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The Next Green Bond Wave: Should Ottawa Step In?

Green bond issues were surging prior to the pandemic, with US\$257.7 billion issued globally in 2019 and C\$9.25 billion in Canada. As the economy recovers, so should the popularity of green bonds. Ottawa has announced it will play a role.

Glen Hodgson

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ABOUT THE AUTHOR

GLEN HODGSON
is Chief Economist,
International Financial
Consulting Ltd. and
a Senior Fellow at the
C.D. Howe Institute.

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*Daniel Schwanen
Vice President, Research*

THE STUDY IN BRIEF

Green bonds have become a fixture on global capital markets since they were first introduced in 2007. International development banks have been present in the green bond space from the outset and have been joined by governments, state enterprises, business enterprises, and financial institutions as issuers. The global market expanded significantly in 2019, with issuance growing by 51 percent over 2018, to reach US\$257.7 billion.

There were strong expectations in early 2020 for continued robust growth, but the severe economic disruption caused by the pandemic-induced shutdown has affected the market's development. However, it is reasonable to expect the green bond market will recover and then keep growing quickly as capital markets re-establish more normal conditions.

Canada has seen the green bond market grow rapidly over the past five years. Canadian green bond issues were largely by the public sector at the outset, including Export Development Canada as the *de facto* representative of the federal government, provinces (Ontario and Quebec), and cities. Canadian green bond market growth accelerated in 2019, with issues estimated at C\$9.25 billion, a 63 percent increase over 2018, and with a growing number of commercial issuers.

The federal government is faced with a series of policy decisions in advancing the development of the green bond market in Canada, beginning with whether it should issue its own green bonds. There are a number of anticipated advantages to direct green bond issuance by the federal government with few disadvantages – but some required decisions. Federal green bond issues could help to restore and then fuel growth in the Canadian green bond market for institutional and other investors, building institutional capacity while setting the best possible price benchmark for Canadian dollar issues. The federal issues could fund green infrastructure projects and other public investments to improve climate resiliency and reduce GHG emissions, modelling high performance standards and setting a benchmark for other Canadian green bonds issuers. The announcement in the 2020 Fall Economic Statement of the government's intention to issue green bonds in 2021/22 is therefore welcome.

Overall, although Canada is still a comparatively small player in green bond issuance compared to China, the United States and European issuers, it now has a material presence in the market. Domestic investors are the main purchasers and continue to be receptive to Canadian green bond supply, although international bond investors have also shown an interest in Canadian issues.

As the global economy recovers, it is reasonable to expect the green bond market to recover and then grow quickly as capital markets re-establish more normal conditions and if green or low-carbon investment advances as anticipated. Due to the surge in shutdown-induced public spending, as well as reduced revenues, nearly all governments are experiencing massive fiscal deficits. While issuing green bonds should not be seen as a tool to finance debt, the reality is that attracting capital is going to be necessary for governments around the world.

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Sustainable (or green) finance is steadily expanding within the global financial system, Canada's system included.

Green finance includes equity investment, debt instruments like loans and bonds, and risk management instruments like insurance and surety. Green bonds, which help finance eligible green projects, specifically projects based on technologies and processes that produce much lower or no net greenhouse gas (GHG) emissions, are a core element of a well-developed system of green finance. This paper addresses the development and use of green bonds, describes the status of the global and Canadian green bond markets, and asks whether specific policy action is warranted to enhance the development of a robust Canadian market for green bonds.

To set the context, the 2019 Expert Panel report on sustainable finance to the federal government defined sustainable finance as:

Capital flows (as reflected in lending and investment), risk management activities (such as insurance and risk assessment), and financial processes (including disclosures, valuations, and oversight) that assimilate environmental and social factors as a means of promoting sustainable economic growth and the long-term stability of the financial system. The conditions for sustainable economic growth are to meet the needs of the present without compromising the future. (Expert Panel p.2.)

The Panel emphasized the role of financial markets in driving the transition to a low-carbon economy. Green finance is a key enabler in addressing the

impacts of climate change and the transition toward an economy with much lower GHG emissions.

This *Commentary* examines the criteria that qualify a bond as ‘green’ and details the rapid recent growth of international and Canadian green bond markets. It finds that while nothing appears to be “broken” in the developing Canadian green bond market, there are a number of anticipated advantages from the federal government directly issuing its own green bonds, with few disadvantages. The Fall Economic Statement 2020 announced the federal government’s intention to issue its own green bonds in fiscal year 2021/22. This is a welcome signal, but other decisions will be required, as discussed in the paper, for successful green bond issuance by the federal government.

WHY GREEN BONDS?

In an ideal world, the price system would reflect the real long-term availability and scarcity of goods and services, including what economists call “negative externalities” like pollution. In this ideal pricing world, financial instruments would already fully capture environmental and social impacts through the price system – and there would be no need for distinct green bonds.

But in a real world where reducing negative externalities like GHG emissions relies on aspirational targets and patch-work regulations, or where a carbon tax is not (yet) high enough

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Key Concept Explainer

Green Bond Principles:

To provide international standards and criteria for green bonds, the International Capital Market Association introduced its Green Bond Principles (GBP), last updated in 2018. These are voluntary process guidelines intended to promote the development of the global green bond market through a defined approach to issuance. Green bonds are expected to align with four GBP core components. These are:

1. Use of proceeds: The cornerstone is the use of the proceeds for green projects and green activities, to be appropriately described in the legal documentation. There should be clearly identified environmental benefits that are to be assessed and detailed by the issuer.
2. Process for project evaluation and selection: The green bond issuer should share with investors the environmental sustainability objectives, the process for determining how the project fits the categories for eligible green projects and the related specific criteria.
3. Management of proceeds: The proceeds should be tracked by the issuer and attested to by the issuer in a formal process.
4. Reporting: Issuers should provide readily available information on the use of proceeds, to be updated at least annually until full allocation of the investors' funds.

The ICMA Green Bond Principles are now being used voluntarily by issuers globally.

Separately, the Climate Bonds Standard builds on the GBP to help create a robust and effective certification system for industries.

The European Union is also creating its own standards-based criteria for green bonds, called the EU Green Bond Standard (GBS).

to reduce emissions sharply, investors are looking for substitutes which demonstrate that negative externalities are being addressed. The same might be said for issuers who want to show that they are focused on reducing GHG emissions through their activities. Both providers and users of investment capital, therefore, have gravitated toward green bonds as an instrument that can mobilize and allocate capital for agreed environmental purposes. So, while green bonds are quite clearly a second

best, and therefore, sub-optimal approach, they represent an incremental option for reducing GHG emissions.

WHAT EXACTLY ARE GREEN BONDS?

According to the International Capital Market Association (ICMA),¹ "green bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance, in part or

1 ICMA is a not-for-profit membership association that serves the needs of its wide range of member firms in global capital markets. As of March 2020, ICMA has around 600 members in 62 countries.

in full, new and/or existing eligible green projects..." (ICMA 2018). Green bonds are a generalized core element of sustainable finance, differentiated from traditional bonds by their green criteria.

ICMA has identified four types of green bond:

- 1 Standard green use of proceeds bond: a standard recourse-to-the-issuer debt obligation aligned with the ICMA's Green Bond Principles (GBP), discussed later in this paper. This is the most basic green bond where the issuer is responsible for repayment.
- 2 Green revenue bond: a non-recourse debt obligation where the credit exposure in the bond is tied to the pledged cash flows of a project's revenue sources. Repayment is thus linked to project-related revenues, not to the financial capacity of the issuing organization.
- 3 Green project bond: a project bond for a single or multiple green project(s) where the investor has direct exposure to the project risks. Repayment is linked to the overall (net) success of the project, with the bond investors sharing in the project risk.
- 4 Green securitized bond: a bond collateralized by one or more specific green project(s) and aligned with the GBP. The first source of repayment is generally the cash flows of the assets. Repayment is linked to the financial success of one or more projects. (*ibid*).

It should be noted that there is some competition among definitions. The Climate Bonds Initiative (CBI), an investor-focused, not-for-profit organization that promotes low-carbon bond investment for climate change solutions, has its own list of 10 different types of debt instruments that would qualify as eligible for classification as green bonds – although they are based on the four types above.²

For Canada and other energy-producing nations, a related concept is transition bonds, which are

directed toward funding projects and activities that are designed to reduce GHG emissions, notably in the energy and mining sectors. Transition bonds can be used to fund projects that reduce GHG emissions but which would not meet the current green bond criteria. This type of transitional debt instrument could be important for regions with resource-extractive industries such as oil, gas and mining, by funding investment in technologies and processes that can reduce GHG emissions.

That said, if foreign capital is to be successfully attracted to Canadian green and quasi-green bond markets, it would make sense that Canadian efforts to develop a transition bond taxonomy should be aligned with similar efforts in other resource-based economies, and also aim to be aligned as much as possible with the evolving global standards for green bonds.

It is reasonable to ask, are there limits to bond market specialization? Other specialized or "theme" bond market segments have also emerged, such as social impact or responsibility bonds that are linked to policies and activities that promote things like poverty reduction, inclusion, and increased diversity. The development of various specialized bond market segments is not necessarily a negative thing – product differentiation exists in most market segments for products and services, from toothpaste to autos, as well as in financial services. The key will be to identify market opportunities and define and implement specific and credible standards, definitions and processes related to the specialized bond issues to build trust and ensure a common understanding of intended results. This will be essential to building a critical mass of both bond investors and issuers to ensure a well-functioning bond market segment. Perhaps the most obvious concern is ensuring that capital raised

² See CBI, <https://www.climatebonds.net/certification/eligible-instruments>.

under a particular theme bond is used directly and transparently for the project it was intended for, and the issue it was meant to address.

KEY FACTORS

Development of the global green bond market has been driven by a number of specific factors. Early leadership was shown by prominent multilateral financial institutions, notably the European Investment Bank and the World Bank, which were instrumental in launching the green bond market as early issuers. Both institutions are designed to play a key policy role as well as a capital mobilization role, and they have been prominent leaders for decades in bringing environmental principles and practices to their activities. Green bonds were launched with the first offering by the European Investment Bank in 2007,³ and the World Bank has been a regular issuer to steadily build market depth and reinforce the linkage to green use of funds.

Next, the green bond market has been fueled by a small but growing supply of capital that is committed to financing green investment activity in addition to earning a market-based financial return. Some institutional investors have designated a portion of their funds for investment in green and socially progressive activities, and this available pool of earmarked capital, while small initially, has been key to green bond market growth. A 2013 OECD paper noted that a growing number of pension funds, insurance companies and others (including Berkshire Hathaway and Google) were making major investments in renewable energy infrastructure; as of July 2013, over 50 percent of installed wind turbines in Europe were reported to be owned by institutional investors (Kaminker et al. 2013).

Issuers for their part are making use of green bonds for a number of reasons, in addition to raising capital on competitive terms. Issuing green bonds signals a commitment to addressing climate change and investing in low-carbon projects and activities, whether the issuers are corporations, state enterprises, multilateral institutions, or governments. Green bonds are a targeted funding tool that can be used to strengthen environmental risk management capacity as well as green asset formation, recognizing that climate risk is investment risk and should be managed accordingly. They are also used to signal an issuer's green business and policy aspirations, and to support branding; issuing firms, organizations and governments wish to associate themselves with sustainable, low-carbon economic development, as well as demonstrating a commitment to greater transparency and reporting.

RECENT INTERNATIONAL DEVELOPMENTS

As noted above, green bonds were launched with the first offering by the European Investment Bank in 2007.⁴ Annual green bond market volume grew slowly at first, from under US\$5 billion in 2012 to \$170.6 billion in 2018. International development banks have been present in the green bond space from the outset and are among the world's largest green bond issuers, consistent with their mandate to finance sustainable development and growth. Issuance by others – governments, state enterprises, business enterprises, and financial institutions – has also expanded rapidly in recent years, in line with strong institutional investor demand. Borrowers in the US, Switzerland, China, and France have dominated cumulative global green bond issuance.⁵

3 Noted in IIAC, "Opportunities in the Canadian Green Bond Market, V2.0", September 2018.

4 Ibid.

5 Ibid.

Green bonds leaped to new levels in 2019. Issuance grew by 51 percent over 2018, to reach US\$257.7 billion. A total of 1,788 green bonds were placed in the global market, from 496 issuers. The 2019 volume was driven by the European market, which accounted for 45 percent of global issuance. The total value of green bonds issued in Europe increased by 74 percent (or US\$49.5 billion) year-on-year, reaching a total of US\$116.7 billion. Asia-Pacific and North American markets followed at 25 percent and 23 percent growth, respectively. The US, China and France continued to top the country rankings, accounting for 44 percent of global issuance in 2019. US issuers contributed US\$51.3 billion to the total, whereas their Chinese and French counterparts brought US\$31.3 billion and US\$30.1 billion to market respectively.

There were 250 new issuers in 2019 contributing US\$67.8 billion to the annual total, issued in 51 jurisdictions, of which eight were new. Debut green bond issuances took place in Russia, Saudi Arabia, Greece, Ukraine, Kenya, Panama, Ecuador and Barbados. The single largest green bond was issued by the Dutch State Treasury Agency, at EUR 5.99 billion. It is worth noting that cumulative non-financial corporate issuance doubled in 2019 compared to 2018 (US\$59.3 billion in 2019 vs US\$29.5 billion in 2018) and represented 23 percent of 2019 volumes. Climate bond certifications passed the cumulative US\$100 billion milestone in 2019, demonstrating the momentum building in green bond markets.⁶ As described in the box below, corporate treasurers have numerous reasons to like green bond issuance.

There were strong expectations in early 2020 that the global green bond market would keep growing rapidly. As the *Financial Times* noted in early

January 2020, “issuance smashed through analysts’ projections in 2019 and is set to continue expanding this year as sustainability-minded investors snap up almost every deal that hits the market.”⁷ New green bond issues were reportedly being oversubscribed by more than three times, reflecting very strong market appetite. This indicated a strong supply of funds available from investors for green bond purchases, which can translate into more attractive pricing for issuers as well as significant volumes of available funding. Moody’s expected stronger growth for the year than previously, due in large measure to the EU’s new guidelines on sustainable investing and finance, which provide clarity on what qualifies as green finance.

However, the severe economic disruption caused by the pandemic-induced shutdown has delayed the market’s development. Global green bond issuance slowed significantly in the first half of 2020, with only US\$91.6 billion hitting markets, down by 26 percent compared to 2019 (CBI 2020). Monthly green bond volumes dropped sharply in March and then partly recovered in the April to June period, although issuance in each month was below 2019 levels.

Both non-financial corporates and government-backed entities were prominent in the market, with the latter comprising nearly a quarter (24 percent) of total volume, up from 15 percent in the first half of 2019. Governments tapped into green and other bond labels to mitigate the effects of the coronavirus as well as to pave the road to recovery, although the share of sovereign issuance remained stagnant. Overall, there were 221 issuers from 34 countries in the first half of 2020, with five of the twelve sovereign issuers returning to the market: Chile, France, Indonesia, Lithuania, and the Netherlands.

6 Data from Climate Bonds Initiative, “2019 Green Bond Summary.” <https://www.climatebonds.net/certification/eligible-instruments>.

7 *Financial Times*, “Green bonds set to keep flying off shelves in 2020.” January 6, 2020.

Box 1: Treasurers' Views on Green Bonds

Corporate Treasurers are a key source of insights on green bonds. Their views were recently sought in the first Green Bond Treasurer Survey by the Climate Bonds Initiative (2020). This survey was conducted in the fall of 2019 to assess the benefits (and challenges) of issuing green bonds. Eighty-six green bond issuers globally participated in the project, with input from global enterprises and from all regions. Twelve of those surveyed were Canadian organizations, including Manulife, Ontario Power Generation and the Province of Quebec.

There was an expectation prior to the survey that a desire to obtain cheaper pricing by accessing green bond markets would be a key finding. However, the survey indicated that better pricing was not a principal benefit. Rather, treasurers surveyed indicate that green bonds can:

- Contribute to transition, risk management, and future-proofing the business: Green bonds encourage enterprises to adjust their business models towards a low or no carbon future. Climate risk is financial risk, and companies can use green bonds to manage these risks in a structured manner.
- Enhance reputation and visibility: Reputational benefits were a top motivation for issuing green bonds, joining a desire to help address climate change.
- Broaden the investor base: Green bonds attracted new investors with a more diverse pool of capital, providing greater flexibility to issue new bonds. Around 50 percent of green bonds were allocated to green or socially responsible investors.
- Encourage better standards: Most respondents preferred standardization of definitions, taxonomies, and reporting. Many cited the development and implementation of the European Commission's Sustainable Finance Taxonomy.
- Strengthen internal integration: Green bond issuance can lead to positive changes to organizations' internal relationships.
- Provide gains worth the effort: The costs of issuing a green bond were seen as negligible compared to the other benefits. For most respondents, the cost of borrowing for green bonds was similar to, or even lower than, vanilla equivalents (*ibid.*).

As the global economy recovers, it is reasonable to expect the green bond market to recover and then grow quickly as capital markets re-establish more normal conditions and if green or low-carbon investment advances as anticipated. Due to the surge in shutdown-induced public spending, as well as reduced revenues, nearly all governments are experiencing massive fiscal deficits. While issuing green bonds should not be seen as a tool to finance debt, the reality is that attracting capital is going to be necessary for governments around the world.

Many governments are also considering how the recovery can be based on an accelerated transition toward sustained growth with lower and declining GHG emissions, which will likely provide many additional specific uses for green bond proceeds.

EVOLVING GREEN BOND CRITERIA

The criteria that are used to qualify as a green bond – including definitions and standards for use of funds, verification processes, and reporting – are

what differentiate green bonds from other types of fixed income instruments and demonstrate that a bond is actually green, beyond providing a market-based financial return to investors.

The available international green bond criteria are going through a rapid evolution, from a voluntary system for standards and validation toward more common and mandatory practices. The following is our understanding of this rapid evolution, drawing upon work by the International Capital Market Association, the Climate Bonds Initiative, and most recently the European Union.

i ICMA Green Bond Principles

To provide international standards and criteria for green bonds, the International Capital Market Association introduced its Green Bond Principles, last updated in 2018 (ICMA 2018). The Green Bond Principles (GBP) are voluntary process guidelines intended to promote the development of the global green bond market through a defined approach to issuance. The GBP are intended to provide guidance to issuers on how to issue a credible green bond, including the characteristics of any given green bond, and to help investors by encouraging provision of information needed to evaluate the environmental impact of their green bond investments. A desirable degree of transparency is described for use by issuers, investors, banks, underwriters, etc.

Green bonds are expected to align with four GBP core components. These are:

- 1 Use of proceeds: The cornerstone is the use of the proceeds for green projects and green activities, to be appropriately described in the legal documentation. There should be clearly identified environmental benefits that are to be assessed and detailed by the issuer.
- 2 Process for project evaluation and selection: The green bond issuer should share with investors the environmental sustainability objectives, the process for determining how the project fits the categories for eligible green projects and the related specific criteria.
- 3 Management of proceeds: The proceeds should be tracked by the issuer and attested to by the issuer in a formal process.
- 4 Reporting: Issuers should provide readily available information on the use of proceeds, to be updated at least annually until full allocation of the investors' funds (*ibid.*).

The ICMA Green Bond Principles are now being used voluntarily by issuers globally as they access the green bond market, to demonstrate their readiness to adopt good practice based on the four core components.

ii CBI Climate Bonds Standard and Certification

For its part, the Climate Bonds Initiative has developed a Climate Bonds Standard, now in Version 3.0 (CBI website). The Climate Bonds Standard is a standards-based, GHG-related methodology applied to many industrial and business sectors, providing criteria to verify the green credentials of a bond or other debt instrument. The CBI standards are based on the development of a consensus among technical experts on standards and criteria by sector related to projects that would reduce GHG emissions, which are then to be confirmed by second-party certification. As CBI states, “confidence in the climate objectives and the use of funds intended to address climate change is fundamental to the credibility of the role that green bonds play in a low carbon and climate resilient economy. Trust in the green label and transparency to the underlying assets are essential for this market to reach scale” (*ibid.*).

CBI has promoted what it calls a “Climate Bonds Standard & Certification Scheme,” which combines the sectoral standards with a proposed certification process. The Climate Bonds Standard & Certification Scheme aims to provide the green bond market with the confidence it needs to grow to scale, recognizing that robust labelling and certification of green bonds is a key requirement for mainstream bond market participation. The Scheme includes projects or assets that directly contribute to

Figure 1: Applying the Clean Bonds Standard: Methodology for Forestry



Source: CBI, <https://www.climatebonds.net/standard/forestry#TWG>.

mitigation of greenhouse gas (GHG) emissions, and adaptation to the consequences of climate change.

CBI emphasizes that its scheme builds on the ICMA's Green Bond Principles, to help create a robust and effective certification system. Key features include:

- Full alignment with the latest version of the Green Bond Principles;
- Clear mandatory requirements for use of proceeds, tracking, and reporting;
- Specific eligibility criteria for low carbon and climate resilient projects and assets;
- An assurance framework with independent verifiers, and clear procedures for certification (*ibid.*).

Standards and criteria for green bond qualification have been developed for about 15 sectors under the CBI, with more to come. These standards define the

acceptable types of green projects and technology being funded (and by implication the resulting low GHG emissions and/or other environmental impacts). For example, for wind energy, qualifying assets are those that operate or are under construction to operate:

- Onshore wind energy generation facilities (but not offshore wind, which is eligible for certification under the marine renewable energy criteria);
- Dedicated transmission infrastructure and support facilities (e.g., transformers, backbone, transmission terminus, grid connections, dedicated facilities for support vessels and vehicles, equipment storage, onshore assembly); and
- Dedicated operational production, manufacturing or distribution facilities for key components, such as wind turbines, platforms etc.

These wind assets must meet the mitigation requirement of the Climate Bonds Standard. This applies to the development, construction and operation of wind farms; operational production or manufacturing facilities wholly dedicated to wind energy development; and wholly dedicated transmission infrastructure for wind farms.⁸

As another example, here are the qualifying criteria for the forestry sector, provided by CBI in a graphic (see previous page).

It should be noted that the sectoral qualification standards and criteria already developed and available under the CBI are not yet aligned in terms of a common framework, core elements and presentation format. This lack of alignment likely reflects a decentralized process being used for the development of the standard and criteria in each sector by a group of technical experts. While the standards and criteria may be technically appropriate, the current format may make the CBI standards complicated to interpret and use for both issuers and investors, especially if a given bond issue is to be used to fund projects in multiple and varied sectors.

Second-party certification by a recognized arm's-length expert is the proposed screening tool that would allow bonds to be "Climate Bond Certified," reducing the need for investors to make judgements or undertake their own due diligence on green certified investments. Certification is a voluntary initiative for issuers under the scheme, aimed at providing an assurance that a green bond meets science-based climate standards, and industry standards for proceeds management and transparency.

The CBI Climate Bonds Standard is a global standard that represents an important advance –but it is also still a work in progress. An overall scheme has been established and technical standards and criteria have been developed for a number

of sectors, but the work is not complete. Work is still required on additional sectors, and on better alignment and presentation of the standards and criteria.

iii EU Green Bond Standard (GBS)

Building on the experience of the ICMA GBP and CBI Climate Bond Standards, the European Union (EU) is creating its own standards-based criteria for green bonds, called the EU Green Bond Standard (GBS). The GBS is voluntary for now, but it is likely to be legislated and therefore mandatory for EU investors and EU green bond issuers as early as 2021.

The European Green Deal of December 2019 emphasized the need for long-term signals to direct capital and financing to green investments. The subsequent European Green Deal Investment Plan of January 2020 announced that the EU Commission will establish an EU Green Bond Standard (GBS) (EU website). The EU recognized that green bonds play an important role in financing the low-carbon transition, but acknowledged there has been no uniform green bond standard within and across the EU.

Establishing such a standard had been recommended in a series of EU expert reports on green finance (*ibid.*). One example is the European Commission's Technical Expert Group on Sustainable Finance (TEG), which has played a central role, recommending adoption of a GBS and providing guidance to market actors in a March 2020 report on acceptable technical standards for using the proposed GBS and the creation of a market-based registration scheme for external verifiers.

The EU green finance taxonomy indicated green projects should contribute substantially to at least one of the six environmental objectives:

- 1 Climate change mitigation;

8 See CBI, accessed at: <https://www.climatebonds.net/files/files/Sector%20Criteria%20Wind.pdf>.

- 2 Climate change adaptation;
- 3 Sustainable use and protection of water and marine resources;
- 4 Transition to a circular economy;
- 5 Pollution prevention and control; and
- 6 Protection and restoration of biodiversity and ecosystems.

They should also do no significant harm and comply with minimum safeguards and Technical Screening Criteria (TSC) (EU 2020, p.14).

The EU green finance taxonomy is supplemented by a Technical Annex containing a full list of TSC-consistent economic activities that can substantially contribute to climate change mitigation or adaptation, including an assessment of doing no significant harm to other environmental objectives. The TSC can be quantitative (metrics and thresholds) or qualitative principles or process-based criteria (*ibid.* p.17).

The European Commission is now exploring the possibility of legislating the EU Green Bond Standard. If so, the international bar will have been raised one notch higher on the criteria and process for qualification as a green bond, in particular if issuers wish to attract EU investors. Absent a similar standard-setting exercise promoted and led by another major global player like the US (or China), the EU Green Bond Standard may become the *de facto* gold standard for green bond issuance. (As noted earlier, European issuance represented 45 percent of global green bond issuance in 2019, the highest year on record (CBI 2019, p. 2.)) It will definitely become the necessary standard if green bond issuers want to attract investors from the EU.

iv Transition Bonds

The 2019 Expert Panel report on sustainable finance recommended (Rec 9.1) that support be given to the development of Canadian transition-oriented fixed income taxonomies, ideally working with other countries with similar resource endowments “in

scoping a ‘transition-oriented’ taxonomy category that captures environmentally beneficial projects that do not meet international green criteria” (Expert Panel p. 29). While the Panel recognized that adopting a common international standard for fixed income products would be ideal, it noted that coverage for industry transition activities was not captured under then-current criteria.

A recent report by the Climate Bonds Initiative and Credit Suisse outlines the conditions they attach to transition financing (CBI and Credit Suisse 2020, p. 3). The report notes that while large GHG emitters have a vital role to play in reducing global emissions (and are often key parts of mainstream investment portfolios) major emitters are still largely absent from the development of green finance. This gap presents an opportunity to shape and finance their sustainable transition.

To fill this funding gap, some issuers are beginning to utilize the ‘transition bond’ concept and label. To date, different definitions of transition have been used, which creates the potential for uncertainty and mislabeling, or even greenwashing. In their view, the transition concept and any associated label should be based on identifying sectors and entities that are making sincere and ambitious efforts to transition, using robust, industry-adopted standards for transition instruments.

CBI and Credit Suisse propose five principles for credible transition financing:

- 1 In line with 1.5 degree trajectory, all goals and pathways need to align with zero carbon by 2050 and nearly halving emissions by 2030.
- 2 Goals and pathways based in science.
- 3 Offsets don’t count.
- 4 Technological viability trumps economic competitiveness. Pathways should include an assessment of current and expected technologies, even if relatively expensive.
- 5 Action, not pledges. A credible transition is backed by operating metrics, not a commitment/pledge (*ibid.* p. 4).

In the view of CBI and Credit Suisse, the transition label should be used for eligible investments that are making a substantial contribution to halving global emissions levels by 2030 and reaching net zero by 2050. The report also states these investments will not have a long-term role to play; or if they have a long-term role to play, at present the long-term pathway to net zero goals is not certain (*ibid.* p.5).

There are gaps in this proposed transition framework, which is predicated on the availability of defined transition pathways. There is little guidance from CBI and Credit Suisse for high-emitting industries such as oil and gas, mining and heavy industry, or for investment activities that potentially could become stranded. The report says these areas are being developed; in the interim it is recommended that borrowers and investors select a pathway they believe is credible and provide transparency on why a given pathway has been selected.

The CBI and Credit Suisse guidance provides a useful reference point for Canadian emitters and investors, although its stated goal of attaining absolute zero emissions for all sectors in 2050 sets a very high bar indeed. The report's guidance also contains a significant gap by not addressing high-emitting sectors that are important to the Canadian economy. Additional work is going to be required to fill this gap by defining credible technology-driven transition pathways for sectors with high emissions intensity.

Work is now under way in Canada, focused at the Canadian Standards Association and involving players from the financial services industry and other sectors, to develop taxonomies that could be applied to transition financing, including transition bonds. The initial focus is to define transition finance in the Canadian market although this work could also help to define an international standard and fill the gap just noted for high-intensity emitters.

The challenge therefore will be to develop a financing taxonomy, and performance standards, that can simultaneously promote transition and reduce

GHG emissions from energy production, meet the transition finance needs of the energy industry and its financiers in Canada, but also win international acceptance and keep the door open to international sources of capital that could help finance the transition. Getting the balance right will be like threading the needle, which is not an easy task.

CANADIAN DEVELOPMENTS

The Canadian green bond market has grown rapidly over the past five years. Evidence of a developing market in Canada is available from specific issuers and most notably from the Investment Industry Association of Canada (IIAC), which has been gathering data and providing regular analysis and commentary on Canadian green bond market developments. Several Canadian issuers have placed green bonds in international markets and domestic investors have quickly become receptive to purchasing Canadian green bonds.

Canadian green bonds were largely issued by the public sector at the outset, unlike in other jurisdictions where many issuers are in the corporate sector. Public-sector issuers have included Export Development Canada as the *de facto* representative of the federal government, provinces (Ontario and Quebec), and cities. The City of Ottawa was the first municipality to issue a green bond in Canada, in 2017, followed by Vancouver and Toronto in 2018 (IIAC 2018). Maturities of early issues were often short compared to the average term of green bonds in global markets, likely reflecting investor caution as the market developed.

IIAC noted in 2018 that the Canadian green bond market was poised to grow in line with the global market (*ibid.*). The largest Canadian issuers in 2018 (to September) are provided in Table 1 below, covering both domestic and international placements.

Green bond activity in Canada accelerated in 2019, consistent with global developments. According to the Climate Bond Initiative database,

Table 1: Large Canadian Issuers, 2018 – Domestic and International Placements

Issuer	Term in Years	Amount (C\$ Millions)
City of Vancouver	10	300
Brookfield Renewable	10	85
City of Toronto	30	300
Province of Quebec	7	500
CPPIB	10	1,500
Manulife Financial Corp	10	600
Ontario Power Generation	30	450
Province of Quebec	5	500
Province of Ontario	7	1,000

Source: Bloomberg from IIAC, "Opportunities in the Canadian Green Bond Market, V2.0." September 2018.

Table 2: Groups of Canadian Issuers, 2019

	(C\$ Billions)
Financial Corporate	3.58
Non-Financial Corporate	1.24
Development Bank	0.50
Government-Backed Entity	0.52
Local Government	2.91
PPP Credit Facility*	0.49

Note: * CBI classifies the Mobillinx issues as a credit facility, not a green bond.

Source: CBI from Smart Prosperity Institute, "Bridging the Transparency Gap in Sustainable Finance," August 2020.

Table 3: Large Canadian Issuers, 2019 – Domestic and International Placements

Issuer	Term	Amount (Millions)
Ivanhoe Cambridge II Inc.	5	300 C\$
CPPIB Capital Inc.	1	500 US\$
South Coast British Columbia Transportation Authority	31	200 C\$
Mobilinx Hurontario GP	19.5	125 C\$
Mobilinx Hurontario GP	24.5	140 C\$
City of Toronto Canada	20	200 C\$
Brookfield Renewable Partners	10	300 C\$
Brookfield Renewable Partners	30	300 C\$
Export Development Canada	5	500 C\$
The Bank of Nova Scotia	3.5	500 US\$
Royal Bank of Canada	5	500 Eur
Province of Quebec	5	800 C\$
CPP Investment Board	10	1000 Eur
Algonquin Power Co.	10	300 C\$
Ontario Power Generation	30	500 C\$

Source: Bloomberg from IIAC, "Opportunities in the Canadian Green Bond Market, V 4.0." February 2020.

Canadian green bond issues totalled C\$9.25 billion in 2019, a 63 percent increase from 2018;⁹ the number of Canadian green bond issuers nearly doubled. These issues are classified by CBI as follows.

Canadian issuance in 2019 came from a broad spectrum of issuers with a growing number of corporate issues, as shown in Table 3 below. There was a mix among financial and corporate firms, and entities from all three levels of government (with the federal government represented by EDC). There was also a mix of currencies used with issues in CAD, USD, and EUR. The EUR 1 billion CPPIB deal in 2019 was the second issuance by CPPIB, which is the only Canadian pension fund to issue a green bond to date (IIAC 2020).

Other 2019 developments are worth noting. The Canadian green bond market has started to see longer maturities, and in IIAC's view, this is likely to continue to lengthen over time. Canadian green bonds are usually priced in line with the borrower's normal bond curve but are often traded at a premium to standard bonds in secondary trading, likely due to their scarce nature (*ibid.*).

As mentioned earlier, Export Development Canada (EDC), a federal Crown corporation and Canada's export credit agency, has been the *de facto* federal government presence in green bonds markets up to now. EDC reported that it was the first Canadian institution to issue a green bond, in January 2014, for US\$300 million (EDC 2019). Its financing of Canadian green tech exports was a key driver for its green bond program, since it already had, and was building, assets that would meet criteria for use of green bond proceeds. The first US dollar green bond issue by EDC was followed by two more, in December 2015 for US\$300 million, and in June 2017 for US\$500 million.

EDC issued its first green bond in Canadian dollars in September 2017, for \$500 million for five

years with a yield of 1.8 percent. A second EDC green bond in Canadian dollars was issued in July 2019, also for \$500 million for five years with a yield of 1.65 per cent (EDC 2020). The CAD issues reflect the fact that EDC's mandate allows it to finance assets in Canada that are related to building Canada's export capacity.

In its 2020 Green Bond Impact Report, EDC provides extensive and detailed information on the 3- to 5-year terms on its green bonds, and on the green loan assets that were funded by the green bond issues. The Report does not indicate explicitly whether ICMA or CBI criteria were used for its green bond issues and asset management. It is also noteworthy that EDC set an aggregate target in 2019 to reduce its exposure to the most carbon intensive sectors by 15 percent over five years (*ibid.*), which goes a step beyond the expectations and criteria for green bond issuance.

Conversations by the author with senior federal officials in 2018 indicated that the federal government, as EDC's shareholder, was satisfied at that time with EDC being the sole federal presence in green bond markets. EDC largely borrows in US dollars, reflecting the fact that most Canadian export trade is conducted in US dollars. The federal government usually does not borrow in US dollars, to avoid financial market activity that might influence the value of the loonie. Green bond issuance by EDC in Canadian dollars in 2017/18 indicated the federal government was prepared to allow EDC to continue acting as the federal representative in the green bond market, plus the fact that EDC finances business in Canada that helps to build export capacity, consistent with its operating mandate.

EDC's active and extensive public reporting on its overall activities in the green bond market shows leadership in developing the public reporting on

⁹ Converted from USD to CAD at Bank of Canada's 2019 Average Annual Exchange Rate.

issuers' green activities. That said, there are tangible limits to EDC's green bonds issued in Canadian dollars for its own purposes, so it could never be a full substitute for direct federal government issuance, for its own uses and those of other Crown corporations. The federal government has recognized these limitations. It has now decided to begin issuing its own green bonds, as discussed more fully below.

Among other issuers, Scotiabank recently published its first Green Bond Report, which outlines the expected use of the proceeds from its inaugural US\$500 million, 3.5-year green bond (Scotiabank 2020). Scotiabank notes it launched its own Green Bond Framework in June 2019, which was developed in line with the ICMA Green Bond Principles 2018 (*ibid.*, p. 3). The net proceeds have been used to refinance eligible green assets, which are new or existing assets, businesses, or projects that meet Scotiabank's green bond eligibility criteria, where 90 percent or more of client business revenues are derived from activities in eight key categories. Green buildings and clean transportation were the primary initial uses of Scotiabank's green bond funding.

The question of appropriate standards and processes is key for further development of the Canadian green bond market. The 2019 Expert Panel report noted that "Ideally, Canada would adopt a single internationally-aligned taxonomy encompassing not just green definitions, but a broader mapping of transition and resiliency-linked economic activities and asset classes" (Expert Panel, p. 28). Is it possible to create common global green bond standards? That would be the ideal for development of an integrated global green bond market – creating one set of clear standards and processes that are applied universally, with one set of administrative and compliance practices for issuers.

There is a useful example of where common global environmental practices have been developed for use by financial institutions across many

countries. Two decades ago, the members of the OECD Export Credit Arrangement (including all industrial country OECD members) negotiated and implemented "Common Approaches" for environmental risk assessment applied to official export credits. (The author was one of the initial Canadian negotiators.) The agreement was last revised in 2016.

The agreement defines "common approaches for undertaking environmental and social due diligence to identify, consider and address the potential environmental and social impacts and risks relating to applications for officially supported export credits, as an integral part of Members' decision-making and risk management systems" (OECD website: Environmental and social due diligence). It is monitored through periodic surveys on Members' policies and practices, and shared information on projects supported with export credit that have had a potentially high or medium negative environmental or social impacts. Countries are also required to publish information on how their export credit agency implements the Common Approaches.

A model such as this, negotiated via a credible multilateral institution like the OECD, could be useful in defining common green bond standards for Canadian and global use.

Overall, although Canada is still a comparatively small player in green bond issuance compared to China, the United States and European issuers, it now has a material presence in the market. Domestic investors are the main purchasers and continue to be receptive to Canadian green bond supply, although international bond investors have also shown an interest in Canadian issues. The Canadian green bond market appeared to be at a take-off stage prior to the pandemic; further and likely rapid growth can be anticipated in the years ahead once more normal conditions return to capital markets.

POLICY DECISIONS FOR ADVANCING THE CANADIAN GREEN BOND MARKET

As the previous section illustrates, growth of the Canadian green bond market took a significant leap forward in 2019, although it is likely to have fallen back temporarily due to the pandemic-induced shutdown in the spring of 2020. If the ability of Canadian companies and governments to attract sufficient capital will in part rely on having a robust green bond market, which we established above, is it enough to rely on recent market momentum? Or does more need be done to advance the market's development, particularly if the green bond market does not restart vigorously after the pandemic shutdown?

The federal government is faced with a series of policy decisions as it considers its role in advancing the development of the green bond market in Canada.

DECISION 1: WHETHER TO ISSUE GREEN BONDS

The first decision is whether the federal government should issue its own green bonds. In retrospect, the role of public issuers in advancing the Canadian green bond market was not discussed in detail in the Expert Panel report, even though public issuers together represent the majority of Canadian bond issues at around 80 percent of Canadian bond issuance value in 2019 (IIAC 2019). This omission is notable as the federal government is by far the largest Canadian bond issuer.

Growth in the Canadian green bond market had picked up momentum until the COVID-19 pandemic, accelerating in 2019 with new issues nearly doubling. Robust green bond market growth can be anticipated to resume once more normal financial conditions are restored as the economy recovers from the shutdown. Green bond standards are evolving internationally and Canadian issuers

are adapting to those evolving standards. In short, it might be argued that nothing appeared to be "broken" in the developing Canadian green bond market prior to the pandemic that would demand policy intervention to fix it (provided more normal conditions do indeed return to capital markets in general and green bond markets in particular). EDC could continue to be the *de facto* federal agent, with EDC issuing green bonds in US dollars and occasionally in Canadian dollars as required.

Yet while the green bond market appears to be developing adequately, there would be numerous lost opportunities from maintaining the status quo. We see three possible reasons for the federal government to issue its own green bonds: micro or market-specific reasons; macro reasons; and policy reasons, as elaborated below. The same three reasons could apply to provincial governments, to varying degrees. Two provincial governments have already issued green bonds and additional provincial issues can be anticipated, particularly as public investment is undertaken in climate-resilient infrastructure and in other climate mitigation and adaptation efforts.

i Micro Market-specific Reasons

There are micro or market-specific reasons for considering federal issuance of green bonds. By issuing directly, the federal government would set the best possible price benchmark for Canadian dollar issues, which other Canadian green bond issuers could then use as a reference point for pricing their own green bond issues. A federal price benchmark would be particularly valuable in secondary markets, where federal green bond issues could provide both a more attractive reference price and help to expand market volume.

We note that other than EDC, federal Crown corporations and especially Crown financial institutions no longer borrow for themselves; we understand that the borrowing function in CAD has been re-centralized at the Department of Finance, which provides the lowest possible cost of

funds for these Crown entities. This reality provides another market-specific reason to consider direct federal issuance of green bonds, since the Canada Infrastructure Bank (CIB), Business Development Bank of Canada (BDC) and Farm Credit Canada (FCC), all Crown corporations, cannot borrow directly in bond markets to fund green infrastructure projects and business activities that could mitigate climate risk, reduce GHG emissions and foster adaptation.

ii Macro Market-size Reasons

Next, there are macro factors to consider that are relevant to the development of a robust Canadian green finance market. Green bond issues by the federal government would fuel growth in the overall size of the green bond market for institutional and other investors in Canada, pushing this market segment into the mainstream and enhancing its profile where institutional investors would (and may be expected to) hold green bonds in their asset portfolios.

Federal green bond issues could also help to attract additional sources of international institutional capital that might otherwise ignore Canadian bond markets or avoid investing in Canada. Some international institutional investors, such as Norway's sovereign wealth fund managed by Norges Bank, have recently indicated they don't have confidence that environmental policies and practices in Canada currently meet their expectations and capital investment standards and are divesting from some Canadian oil sands assets. Recent C.D. Howe Institute analysis indicated there were flaws in the Norges Bank analysis,¹⁰ but perception can quickly become reality for investors. Direct federal activity in the green bond market could help to influence that perception by creating

an instrument with related standards that meets sustainable investor expectations.

Fundamentally, expanding the green bond market would support the development of the overall sustainable finance market in Canada. Financial organizations would have an added reason to develop the green financial expertise and systems necessary to be active players in the green finance space. By building this green finance capacity at home, financial institutions based in Canada would enhance their capacity to compete in delivering green financial services in specific market segments elsewhere in North America and beyond.

iii Policy Reasons

Third, the federal government has its own policy reasons for entering the green bond market. Given the massive increase in public debt that has occurred due to the pandemic-induced shutdown (with the federal debt ratio leaping from 31.2 percent to a projected 50.7 percent of GDP in FY 2020-21), the federal government will need to secure access to all available pools of capital to help finance that debt on the best financial terms possible. The global green bond market is small, but it has been growing very rapidly. It would be shortsighted not to consider accessing this added pool of capital when federal financial requirements have grown so much so quickly, and, even if temporary pandemic measures end, the Fall Economic Statement 2020 indicated more spending is coming. Without any tax increases on the horizon, this spending will in part be fueled by debt. And, if the Canadian green bond market does not recover steadily from the shutdown and return to solid growth, kick-starting the market could provide an added policy reason for federal issuance.

10 See Grant Bishop, "Without the clarity they need, Alberta's oil sands producers are being set up to fail," *Globe and Mail*, June 7, 2020.

Federal government entry into the green bond market would also improve alignment between the federal government's stated commitment, plans and activities to reduce Canadian GHG emissions, and its debt management and financing plan. Cash raised by federal government green bond issues can go to fund green projects of its own choosing, projects that are already being funded with federal resources.

Ottawa's not issuing any green bonds so far is curious and likely speaks to the complexity of aligning and coordinating all parts of the extensive federal government system toward meeting a stated goal. If the federal government is fully committed to reducing GHG emissions and achieving net-zero emissions by 2050 within a well-performing economy, it will need to engage all available economic and policy instruments in achieving that goal. This would include using green bonds to fund infrastructure and related programs designed to mitigate the impacts of climate change, and support adaptation and green growth.

The federal government's 2020 Fall Economic Statement announced the government's intention to issue green bonds, stating:

"To help finance the government's historic investments in green infrastructure and other green initiatives, the government is announcing its intention to issue the federal government's first ever green bond in 2021-22. The government will continue to assess options on the appropriate structure for a federal green bond issuance and will provide more information in the context of the 2021-22 Debt Management Strategy, which will be presented in Budget 2021." (p. 140.)

This announcement provides important policy clarity and is a welcome first step. The decision to

issue federal green bonds in fiscal year 21/22 will need to be supported by decisions in a number of other areas, as discussed below.

DECISION 2: STRUCTURE

Next, a decision will be required on the financial structure of an initial federal green bond issue, including its timing, proposed amount, the term and expected pricing. Market conditions will ultimately determine bond pricing and the resulting yield for investors, recognizing that the federal government is a very attractive issuer and should attract the best price possible.

Is there a risk of federal green bond issuance crowding out private-sector green bond issuers? That risk can exist, particularly if federal green bond issues were to become large and/or numerous. A growing stock of green bond investment, and a growing number of investors, would help mitigate the risk of crowding out. Private corporate issuers of green bonds can likely issue greater variations of green bonds, such as securitized and sustainability-linked green bonds, which can drive innovation in the Canadian green bond market and support the development of corporate ESG frameworks and standards.

To address any concerns, the federal government would need to consult closely with the private sector to understand the impact of its green bond issuance. The Bank of Canada could also consider its role in developing the Canadian green bond market, such as by accepting them as collateral as the ECB has done with sustainability-linked bonds.¹¹ Ultimately, any federal green bond issuance ought to be well-aligned with overall government of Canada debt management strategy, as well as climate policy.

¹¹ The ECB made this announcement in a September 22, 2020 press release (see [https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200922~482e4a5a90.en.html#:~:text=The%20European%20Central%20Bank%20\(ECB,comply%20with%20all%20other%20eligibility\)](https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200922~482e4a5a90.en.html#:~:text=The%20European%20Central%20Bank%20(ECB,comply%20with%20all%20other%20eligibility).)).

DECISION 3: STANDARDS AND OTHER CONDITIONS

As discussed at length earlier, acceptable green principles or standards are critical to defining a green bond. The international yardsticks for green bonds have been moving, with the EU green finance taxonomy and Green Bond Standard providing the most recent high-profile reference point for an international green taxonomy and standards, and conditions.

The federal government's announcement of its plans to become a direct issuer means it will need to decide what green bond standards to use, including the definitions, technical environmental standards, certification and verification practices, and reporting and accountability to investors and the public. It could adopt an existing off-the-shelf standard such as the EU Green Bond Standard, which could be the easiest approach but which may not adequately reflect Canadian conditions or priorities; or it could develop and use its own approach, informed but not bound by current evolving international practices. In either case, the federal government will need to develop the internal technical capacity to define an appropriate green bond standard, monitor developments, and report to investors and the public.

The standard chosen by the federal government would provide a *de facto* benchmark for green bond standards, certification, and reporting for other Canadian green bonds issuers, positioning it to show leadership by example in the Canadian market.

DECISION 4: USE OF TAX INCENTIVES

In its 2019 report, the Expert Panel made three specific recommendations (under Rec 9.2) to promote development of the Canadian green bond market:

- Encourage Canada's major banks and asset managers to pursue benchmark transition debt transactions to open the private sector market;

- Consider a range of temporary issuance-based tax incentives, to address high set-up costs as a barrier to issuance; and
- Encourage Canadian asset managers to create pools, and index providers to create indices, of domestic green and transition-linked fixed income product for institutional-scale investment. (Expert Panel p. 30.)

The second specific recommendation is directed at the federal government, so let's consider the possible use of temporary issuance-based tax incentives. To be effective, tax incentives prompt economic activity that would not otherwise occur, in this case new issuers being encouraged to enter the green bond market by reducing set-up costs. The risk with any tax incentive is that it ends up subsidizing economic activity that would have occurred in any event without the subsidy, wasting scarce fiscal resources. It is difficult to know in advance which situation above would prevail for any tax incentives for Canadian green bond issuance.

The rapid growth of the Canadian green bond market in 2019 suggests that cost barriers to issuance were being managed by many issuers, although issuance cost may have been a hurdle to some. A real-time indicator of the possible benefit of a tax incentive will be the pace of recovery in the green bond market from the coronavirus-induced shutdown, and the number of new issuers. A weak or delayed recovery compared to global green bond developments would strengthen the case for temporary tax incentives, to attract market participants and offset issuance costs. At this point, the suggestion here is to take a wait-and-see approach with respect to tax incentives.

DECISION 5: PURSUING MORE COMMON INTERNATIONAL STANDARDS

The 2019 Expert Panel report encouraged Canada to adopt an international green taxonomy that

aligns with its global investment and trade priorities. Similarly, and as indicated earlier in the paper, most respondents to the CBI Treasurers' survey indicated they would prefer standardization of green bond definitions, taxonomies, and reporting, which would be simpler and less costly to administer.

The federal government could therefore consider whether and how to encourage the development of a single internationally aligned green bond taxonomy and standards, as raised by the Expert Panel.

For example, the federal government could develop a green bond standard that is informed by the EU Green Bond Standard but not bound by it, and it could use this Canadian standard to encourage discussions among like-minded countries on the formation of common international standards, starting with the OECD membership. In that way, the decisions outlined here would be integrated and mutually reinforcing.

The federal approach would also need to be adaptable; other factors will inevitably come into play, such as expecting a sharp change in direction on climate policy and green finance in a major economic partner like the US.

DECISION 6: A FEDERAL ROLE IN TRANSITION FINANCE

There is one additional decision to consider. As noted earlier, work is under way at the Canadian Standards Association, involving players from the financial services industry, to develop taxonomies that could be applied to transition financing including transition bonds. Access to well-defined transition financing is important for reducing GHG emissions in Canada's oil and gas sectors and other emissions-intensive sectors, and the federal government could therefore consider the role it might play in helping to develop the market for transition finance. Many of the decision areas discussed for green bonds would apply to transition finance as well, notably appropriate taxonomy and standards, the use of tax incentives, how to advance

the development of international standards, and possible issuance of federal transition bonds (used to support, for example, the provision of transition financing by federal Crown financial institutions.)

CONCLUSION

The global green bond market has existed since 2007. In an ideal world, the price system would reflect the real long-term availability and scarcity of goods and services, including negative externalities like pollution. In this ideal pricing world, there would be no need for distinct green bonds since financial instruments would fully capture environmental and social impacts through the price system. But in the real world where reducing GHG emissions is a work in progress through carbon pricing and patchwork regulations, investors and issuers are using substitutes like green bonds as second-best choice to demonstrate that GHG emissions are being addressed.

The criteria for qualifying as a green bond – including definitions and standards, verification processes, and reporting – are what differentiate green bonds from other types of fixed income instruments. These criteria are going through a rapid evolution, from a voluntary system for standards and validation toward more mandatory or expected practices.

International development banks have been present in the green bond space from the outset and have been joined by governments, state enterprises, business enterprises, and financial institutions as issuers. The global market expanded significantly in 2019, with issuance growing by 51 percent over 2018, to reach US\$257.7 billion. There were strong expectations in early 2020 for continued robust growth, but the severe economic disruption caused by the pandemic-induced shutdown has affected the market's development. However, it is reasonable to expect the green bond market will recover and then keep growing quickly as capital markets re-establish more normal conditions.

Canada has seen the green bond market grow rapidly over the past five years. Canadian green bond issues were largely by the public sector at the outset, including EDC as the *de facto* representative of the federal government, provinces (Ontario and Quebec), and cities. Canadian green bond market growth accelerated in 2019, with issues estimated at C\$9.25 billion, a 63 percent increase over 2018, and with a growing number of commercial issuers.

The federal government is faced with a series of policy decisions in advancing the development of the green bond market in Canada, beginning with whether it should issue its own green bonds. While nothing appears to be “broken” in the developing Canadian green bond market, there are a number of anticipated advantages to direct green bond issuance by the federal government with few disadvantages – but some required decisions. Federal green bond issues could help to restore and then fuel growth in the Canadian green bond market for institutional and other investors, building institutional capacity while setting the best possible price benchmark for Canadian dollar issues. The federal issues could fund green infrastructure projects and other public investments to improve climate resiliency and reduce GHG emissions, modelling high performance standards and setting a benchmark for other Canadian green bonds issuers. The announcement in the 2020 Fall Economic Statement of the government’s intention to issue green bonds in 2021/22 is therefore welcome.

Next, the federal government will need to decide what financial structure to use for its issues and what approach to adopt for green bond standards, certification and reporting. The federal standards and processes adopted could become the *de facto* benchmark for Canadian issuers. It would need to build internal capacity to manage green bond issuance and related standards. The federal government could also consider policy action to help develop more common global green bond standards, informed by the EU GBS but not necessarily bound by them. The possible use of temporary tax incentives is another area for consideration, though this paper would suggest waiting to see how the market evolves, post-pandemic.

In addition, the federal government could examine its role in transition finance for the oil and gas sectors and other emissions-intensive sectors, where many of the same decision areas would apply.

Ultimately, the federal government should expect to engage all available economic and policy instruments if it is committed to reducing GHG emissions and reach net-zero emissions by 2050 within a well-performing economy. Issuing green bonds directly demonstrates a high level of financial and policy engagement and alignment and we welcome the federal government’s decision to issue its own green bonds in 2021/22. Defining the related financing structure and standards and conditions are key next steps.

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