CICERO
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‘Second Opinion’ on Ontario’s Green Bond framework

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Summary

Overall, Ontario's green bond framework and environmental policies provide a progressive, clear and sound framework for climate-friendly investments throughout the province. Ontario takes a broad view of climate change impacts in its environmental policies, and has well developed plans both for mitigation and adaptation actions. The green bond framework lists eligible projects that are generally supportive of the objective of promoting a transition to low-carbon and climate-resilient growth. The reporting and validation procedures are described well in the description of the Green Bond framework and other documents.

Strategies and processes supporting low carbon and climate resilient growth are well developed at the general level, and clearly described in documents. Procedures for monitoring and measurement of activities are well documented.

1. Introduction and background

As an independent, not-for-profit, research institute, CICERO (Center for International Climate and Environmental Research - Oslo) provides second opinions on institutions' framework and guidance for assessing and selecting eligible projects for green bond investments, and assesses the framework's robustness in meeting the institutions' environmental objectives. The second opinion is based on documentation of rules and frameworks provided by the institutions themselves (the client) and information gathered during meetings, teleconferences and e-mail correspondence with the client.

CICERO's Second Opinions are normally restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general or overall level. CICERO does not validate or certify the climate effects of single projects, and, thus, has no conflict of interest in regard to single projects. CICERO is neither responsible for how the framework or mechanisms are implemented and followed up by the institutions, nor for the outcome of investments in eligible projects.

This note provides a Second Opinion of Ontario's Green Bond Framework and current policies for considering the environmental impacts of their projects. The aim is to assess Ontario's Green Bond Framework as to its ability to support Ontario's stated objective of low-carbon and climate resilient growth.

Climate change will have a significant impact on economic development, both from the perspectives of sustainable future development pathways and from the perspective of adapting to changing

circumstances. The recently released Intergovernmental Panel on Climate Change report (IPCC, 2013) on the physical science of climate change highlighted the seriousness of human-induced climate effects. The report can be viewed as an immediate call to action on the challenge of reducing greenhouse gas (GHG) emissions. The 195 countries that have ratified the United Nations Framework Convention on Climate Change (UNFCCC) have agreed to reduce GHG emissions to limit global temperature increase to below 2°C above pre-industrial level. Reaching this target requires shifting development pathways towards low- or zero-emitting economies without delay, and avoiding locking-in high-emitting capital.

CICERO takes a long-term view on activities that support a low-carbon climate resilient society. In some cases, activities or technologies that reduce near–term emissions result in net emissions or prolonged use of high-emitting infrastructure in the long-run. CICERO strives to avoid locking-in of emissions through careful infrastructure investments, and moving towards low- or zero-emitting infrastructure in the long run.

2. Description of Ontario's Green Bond framework and environmental policies

Within Canada, provinces like Ontario have the primary responsibility for environmental management. Like many other provinces, the Province of Ontario has well developed environmental laws and regulations, as well as plans for energy conservation, the phasing out of coal, landfill gas collection, waste reductions, greenhouse gas mitigation, climate adaptation, etc. Table 1 gives an overview of many of these policies and contains a list of all documents/references on which this second opinion is based.

The main aim of Ontario's Green Bonds is formulated as the following vision: *Ontario's Green Bonds are to be used to finance projects that promote environmentally friendly projects (mainly infrastructure) across the Province and mitigate or adapt to the effects of climate change.*

Projects considered for Green Bond financing are subject to environmental approval and reporting requirements as specified in the Environmental Protection Act and the Water Resources Act. Environmental assessment of the projects will follow rules laid down in the Environmental Assessment Act. Projects may also be subject to additional oversight and reporting.

Table 1: Document overview

No.	Title	Comments
1	Cover letter to CICERO	Explaining submitted documents and procedure for approval and reporting requirements for projects under the Green Bond Program.
2	Ontario Green Bond Framework	Gives vision statement, list of eligible projects and procedure for their selection, and describes transparency issues.
3	GBAP Selection Criteria (Final 21May14)	A short description of the Green Bond Program, the Green Bond Framework and the Selection Process.
4	Ontario Environmental Policy Summary table	A table with descriptions and links to 26 different relevant laws, regulations, policy statements, etc. The list follows below.
4a	Environmental Protection Act	The Environmental Protection Act is the key environmental statute in the Province of Ontario. The main structural elements of the Act are: • Prohibitions • Licensing requirements • The use of codes and standards • Enforcement mechanism, including administrative orders and prosecutions • Investigative protocols • Fines and penalties • Officers' and directors' liability Particular provisions dealing with spills, "brownfields" developments, and the handling of waste.
4b	Environmental Bill of Rights	Act that promotes transparency in government decision making in matters that affect the environment. Creates the office of the Environmental Commissioner of Ontario (ECO). Creates a public registry and process for citizen requests to review policies and programs affecting the environment.
4c	Environmental Assessment Act	Provides a planning and decision-making process to evaluate the potential environmental effects of proposed projects.
4d	Go Green: Ontario's Action Plan on Climate Change	Sets province-wide emission reduction targets and outlines a range of initiatives to reduce greenhouse gas emissions and support a sustainable, clean, low-carbon economy. Key elements of the plan include: • Greenhouse Gas Reduction Targets: a set of short-term (6% below 1990 levels by 2014), medium-term (15% below 1990 levels by 2020), and long-term (80% below 1990 levels by 2050) targets for reducing Ontario's GHG emissions. • Green Energy and Conservation • Transportation: The Big Move Regional Transportation Plan • Green Jobs and Research • Land Use and Stewardship • Agriculture and Waste including methane capture and destruction at large landfills The Climate Change Action Plan is updated through regular reports describing the province's progress on existing and new initiatives. To date, four progress reports have been released; the latest was released on November 13, 2012.
4e	Climate Ready: Adaptation Strategy and Action Plan	Outlines Ontario's Adaptation Strategy and Action Plan.
4f	Places to Grow Act and Far North Act	Set out frameworks for sustainable growth that protect the province's natural resources and recognize the carbon storage and sequestration capacity of natural areas.

4g	50 Million Tree Program	18 year program to invest $79M in the planting of 50 million trees on the settled landscape of southern Ontario that will sequester 6.6Mt of CO_2 by 2050.
4h	The Big Move: Transforming Transportation inthe Greater Torontoand	A 25-year Regional Transportation Plan (adopted by Metrolinx in 2008) to improve regional transportation, bolster global competitiveness, protect the environment and enhance quality of life.
4i	Green Energy and Green Economy Act	The Act was created to expand renewable energy generation, encourage energy conservation and promote the creation of clean energy jobs. Under the Act the Environmental Commissioner of Ontario (ECO) has a responsibility to report annually on the progress of activities in Ontario to reduce or make more efficient use of electricity, natural gas, propane, oil and transportation fuels. The ECO is also required to review the progress in meeting any government-established targets to reduce energy consumption and increase efficient use of these fuels, as well as to identify barriers to conservation and energy efficiency.
4j	Energy Conservation and Demand Management Plans Regulation	This regulation requires that public agencies develop energy conservation and demand management (CDM) plans by July 1, 2014. Public agencies were also required to prepare and publish a summary of their 2011 energy consumption and greenhouse gas emissions by July 1, 2013.
4k	Ontario's Updated Long-term Energy Plan	The plan is designed to balance the following five principles: cost-effectiveness, reliability, clean energy, community engagement and an emphasis on conservation and demand management.
4l	Ontario Coal phase-out	Ontario mandated the cessation of coal-fired electricity generation by the end of 2014 through a regulatory amendment (O. Reg. 496/07).
4m	Bill 138, Ending Coal for Cleaner Air Act	An Act to amend the Environmental Protection Act to require the cessation of coal use to generate electricity at generation facilities.
4n	Conservation First: A Renewed Vision for Conservation in Ontario	Discusses Ontario government's vision for conservation, explores potential new innovative initiatives and outlines objectives for a new conservation framework for Ontario
4o	Greenhouse Gas Emissions Reporting	Establishes GHG reporting requirements in the province of Ontario. The regulation requires that large emitters (25 kt of GHGs) report annually on their GHGs emissions.
4p	Building Code	The Building Code is phasing in higher energy efficiency requirements for new buildings overtime.
4q	Provincial Policy Statement (PPS)	The PPS guides municipalities in making land use planning decisions that influence transportation, energy demand, and encourages the development of compact communities and the reduction of emissions. The PPS requires the consideration of potential impacts of climate change.
4r	Greenbelt Plan	Identifies 1.8 million acres of land where future urbanization should not occur by providing permanent protection for prime agricultural land and environmentally sensitive areas.
4s	Landfill Gas Collection	Requires all landfills larger than 1.5 million cubic metres to install landfill gas collection and flaringsystems.
4t	Bill 91, Waste Reduction Act, 2013	An Act to establish a new regime for the reduction, reuse and recycling of waste and to repeal the Waste Diversion Act, 2002.
4u	Waste Diversion Act	Promotes the reduction, reuse and recycling of waste and to provide for the development, implementation and operation of waste diversion programs.

4v	Ontario Water Resources Act	Provides for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use.
4w	Biogas	Encourages the generation of biogas in Ontario's agricultural sector.
4x	The Environmental Farm	A voluntary program that enables farmers to learn and implement best management practices that can provide economic and environmental benefits. Supports the reduction of greenhouse gas emissions include manure management, feed efficiency and livestock management, nutrient management planning, precision agriculture, farm energy audits, farm energy and water conservation measures.
4y	Crown Forest Sustainability Act	Provides for the sustainability of Crown forests and, in accordance with that objective, to manage Crown forests to meet social, economic and environmental needs of present and future generations.
4z	Province of Ontario	Ontario government's current and long-term plans for combatting climate change in the province.
4aa	What is the GreenFIT Procurement Strategy?	An explanation of the GreenFIT procurement strategy in the Province of Ontario.
5	Note A (amended)	A note clarifying the use of LEED in energy efficiency and conservation projects for inclusion of certifiable buildings in the Green Bond Framework

Ontario's Green Bond framework includes five categories of eligible mitigation and adaptation projects that promote the transition to low-carbon and climate resilient growth (see Table 2). Eligible projects for Ontario's Green Bond Program are selected on behalf of the Province by authorized staff of the Ontario Financing Authority (OFA) on the advice of the Province's Green Bond Advisory Panel (GBAP) who will screen and evaluate projects. GBAP is comprised of employees from various ministries and agencies, including the Ministry of Environment and OFA. Under the Green Bond Program, selected projects will have their funding tracked as well as their progress and environmental performance monitored and reported over the life of the green bond.

Table 2: Eligible project categories

Primary objective	Eligible project types
Mitigation	Clean transportation (e.g. funding of public transportation projects)
	Energy efficiency and conservation (e.g. public sector building efficiency improvements)
	Clean energy and technology (e.g. smart grid infrastructure, energy storage)
	Forestry, agriculture and land management (e.g. sustainable forest management)
Adaptation	Climate adaptation and resilience (e.g. flood protection, storm water management)

A host of selection criteria will be used by GBAP to assess eligible projects for their suitability for inclusion in Ontario's Green Bond Program and includes:

- Projects should fall within one of the five categories identified in the Province of Ontario's Green Bond Framework (see Table 2);

- In order to reduce financing costs, projects should have funding requirements that occur within a twelve month period or six month period prior to the issuance of the respective green bond;

- Projects should have measurable results (e.g., GHG reductions) or other performance indicators that clearly outline the environmental benefits and features of each project; and

- It should also be possible to track the progress and funding for selected projects.

GBAP will develop a clear process of documentation and will assess projects for eligibility under Ontario's Green Bond Program. It will not rank projects based on assessments and will not recommend specific projects for funding within the envelope of a specific year.

The selection of projects for inclusion In Ontario's Green Bond Program will be determined based on the above criteria and other factors to ensure that Ontario green bonds issued are consistent with the Green Bond Framework and the initial goals of the Green Bond Program.

2.1 Transparency and reporting

An amount equal to the net proceeds of the green bond issue is recorded in a designated account in the Province's financial records which account tracks the use of and allocation of funds for Eligible Projects. So long as the account has a positive balance, amounts are deducted from the balance of the designated account as they are allocated to Eligible Projects which have obtained approval.

The OFA will provide an annual newsletter to investors on its website including:

- Eligible Projects connected with green bond issues and deduction of amounts from the balance of the designated account;
- Project updates and status reports for Eligible Projects;
- High-level environmental performance indicators (e.g. GHG reductions); and
- A summary of the Province's green bond developments including existing and future projects.

3. Assessment of Ontario's Green Bond framework and environmental policies

Overall, Ontario's green bond framework and environmental policies provide a progressive, clear and sound framework for climate-friendly investments supporting the vision of developing *environmentally friendly projects (mainly infrastructure) across the Province and mitigate or adapt to the effects of climate change*.

On climate change, Ontario has formulated ambitious but realistic targets as follows:

- By 2014, greenhouse gas emissions should be reduced by 6 per cent relative to 1990 levels based on the Canadian National Inventory Report, which follows guidelines of the Intergovernmental Panel on Climate Change (IPCC).
- By 2020 emissions of greenhouse gases should be reduced by 15 per cent below 1990 levels.
- And by 2050, the reductions should be 80 per cent below 1990 levels.

The framework and procedures for Ontario's environmental investments are assessed according to both the micro or project level impacts and the wider (macro-level) impacts in this section.

Eligible projects under the Green Bond framework

The eligible projects listed in the Green Bond framework are generally supportive of Ontario's identified objective and vision of promoting environmentally friendly projects (mainly infrastructure) that mitigate and adapt to a climate change to secure a transition to low-carbon and climate-resilient growth. It covers important sectors like transport, buildings, energy transmission and storage, forestry and agriculture as well as adaptation activities like flood protection and storm water management. Table 3 shows the likelihood of meeting the objective for eligible project categories with respect to the long-term environmental objectives.

Table 3: Eligible project categories and likelihood of meeting objectives

Eligible project types		Likelihood of meeting objective
Mitigation	Clean transportation (e.g. funding of public transportation projects)	Medium. While public transport is good, use of non-fossil fuels for buses etc. should be secured with proper attention to the environmental impacts and climate footprint of various fuels. Also care should be taken to avoid large rebound effects in motorized traffic volumes.
	Energy efficiency and conservation (e.g. public sector building efficiency improvements)	Good. Where Ontario considers potential energy efficiency and conservation projects for inclusion of certifiable buildings in the Green Bond Framework, it will aim for LEED Gold certification. However, in special circumstances, it may consider submitting projects that did not pursue certification (e.g. due to their use) or achieved LEED Silver but with high performance shown under the Energy and Atmosphere LEED category.
	Clean energy and technology (e.g. smart grid infrastructure, energy storage)	Good.
	Forestry, agriculture and land management (e.g. sustainable forest management)	Good.
Adaptation	Climate adaptation and resilience (e.g. flood protection, storm water management)	Good.

Clean transportation

Ontario is expecting relative large growth in population, and the development of an efficient public transport system is key to keeping local air pollution as well as greenhouse gas emissions down. The initiative "The Big Move: Transforming transportation in the greater Toronto and Hamilton area" seems like a very worthwhile plan with its emphasis on "…revitalize our communities into the kinds of places where residents can take transit, ride a bicycle or walk to fulfil their day's activities, and where children can once again walk to school". More short term targets are spelled out in MoveOntario 2020.

While public transport is good, use of non-fossil fuels for buses etc. should be secured with proper attention to the climate footprint of various biofuels. Also care should be taken to avoid large rebound effects in motorized traffic volumes.

Energy efficiency and conservation: Environmental certification systems for buildings

Several voluntary environmental certification systems provide some level of measurement of the environmental footprint of a building, including energy efficiency measures. The most widely used

certification system is Leadership in Energy and Environmental Design (LEED), although many other country-specific systems exist.

LEED ratings originated in the United States but are the most widely used globally. A LEED rating is determined by the number of points earned in a project check-list. A higher number of points earn a higher rating, with some requirements for each rating level. Although the LEED certification system does not have a site selection prerequisite, the sustainability of building site selection, including the urban density and access to public transportation, accounts for 10% of the total points possible.

In Ontario's action plan on climate change, Go Green, it is stated that "LEED will be the design standard for new government-owned construction, major renovations and alternative financing and procurement projects, where appropriate". Furthermore, where Ontario considers potential energy efficiency and conservation projects for inclusion of certifiable buildings in the Green Bond Framework, it will aim for LEED Gold certification. However, in special circumstances, it may consider submitting projects that did not pursue certification (e.g. due to their use) or achieved LEED Silver but with high performance shown under the Energy and Atmosphere LEED category.

Clean energy and technology

Ontario has decided to phase out coal fired power plants. This is good. However, within the green bond scheme, no new fossil fuel powered plant should be allowed. Thus for instance gas fired substitutes, or gas fired power plants as backup for more intermittent renewable energy should be avoided. Technologies for energy storage and smarter grids are however excellent green bond projects.

Forestry, agriculture and land management

Forests and trees bind carbon (for a time), provide shade and cooling and generally make for a better environment in urban areas. An initiative to plant an additional 50 million trees in southern Ontario is therefore welcomed. Protection and sustainable use of the vast boreal forests in northern Ontario is also important. Regarding agriculture, proposed initiatives to buy local (short travelled) food, initiate a carbon trading system and manage and utilize methane from agricultural activities are good.

Adaptation projects

Ontario is recognizing that it has to prepare for ongoing and coming climate changes. To this end it has developed an adaptation strategy and action plan for the period 2011-2014 called Climate Ready. Five main goals and 37 concrete actions are outlined in this plan, which is a very useful and forward looking document. Ontario's adaptation projects seems to be both well-structured and practical.

Strengths

The province of Ontario has a broad approach with a number of relevant laws and regulations aimed at steering the development of the province towards a resilient and low carbon future.

We are in particular pleased with the decision to phase out coal fired power plants at a reasonable speed.

Additional plans outlines and covers actions for transport, energy, climate mitigation and adaptation. For instance the climate action plan "Go Green Action Plan" focuses on five points:

- Green targets – quantified targets for reductions in emissions of greenhouse gases
- MoveOntario 2020 – investments in rapid transit public transportation systems
- Creating Jobs by Going Green – supporting green businesses
- Green Power – support for renewable energy, energy conservation and efficiency improvements
- Grow Green – a tree planting initiative

Also transparency of green bond projects is secured through laws and regulations, and there are procedures for follow up and auditing of projects.

Reasonable focus and concern are in place when it comes to give incentives to suppliers to secure sustainable and green practises. Supply chain issues are therefore addressed.

Weaknesses

A main weakness is the inability of the Province of Ontario to secure that only 'green' fuels (e.g. electricity, biofuels, etc) are used in public transport systems.

Pitfalls

Energy efficiency projects in the buildings sector refer to good standards and certification systems. LEED and other certifications include aspects important to long-term sustainable development, e.g. site selection and consideration of brownfields, urban density and planning, and access to public transportation. Still, the certification systems alone do not guarantee a low climate impact.

To the extent that fuels used in the public transport system are regulated, it is important to secure the environmental friendliness of the fuels in question considered in a life cycle perspective.

Rebound effects

This can occur when GHG reductions result in a net increase in emitting activities. For example, energy efficiency improvements that lower energy costs, inducing more energy use and partially offsetting energy savings. Similarly, more public transport may increase the overall traffic activities by providing better access to roads. This can have the end result of lower reduction in GHG emissions than anticipated. While these effects can never be entirely avoided, it is recommended to be aware of possible rebound effects and avoid investing in projects where the risk of such effects is particularly high.

Transparency and monitoring, reporting and verification

The reporting and validation procedures are described well in the description of the Green Bond framework and other documents. Ontario's policies support regular and transparent updates to investors and the public.

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