

Taxonomy Roadmap Report

Mobilizing Finance for Sustainable Growth by
Defining Green and Transition Investments

Sustainable Finance Action Council
September 2022



Our core knowledge partners:





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Executive summary

Canada needs to scale up climate investment rapidly to achieve a net-zero economy by 2050. By some estimates, Canada’s climate investment gap is as high as \$115 billion annually. In recent years, many countries facing similar investment gaps have been developing taxonomies as part of broader policy frameworks, to help mobilize and accelerate the deployment of capital in support of achieving climate objectives.

Taxonomies can provide a standardized approach for benchmarking economic activities that are consistent with domestic and global climate goals. They set screening criteria that allow users, such as investors, companies and financial intermediaries, to evaluate the climate credentials of economic activities (e.g., in connection with investment and business decisions). Globally, taxonomies to date have largely focused on setting criteria for green activities; however, there are growing efforts to broaden the scope to transition activities. Taxonomies are frequently used to set standards for classifying climate-related financial instruments (e.g., green bonds), but, increasingly, they serve other use cases where the benchmarking feature is viewed as beneficial, including in the areas of climate risk management, net-zero transition planning and climate disclosure.

Given the urgency and complexity of transitioning to a net-zero economy, taxonomies can provide greater certainty about whether economic activities are aligned with credible, science-based transition pathways. They can liberate and accelerate the deployment of climate capital, mitigate greenwashing risks and promote the integrity of net-zero transitions. Against this, questions have emerged about whether taxonomies are overly prescriptive and burdensome, whether they can adequately accommodate market and technological innovations and how to reconcile urgency with what is often a multi-year effort to develop credible, science-based taxonomies.

In May 2021, the Sustainable Finance Action Council (SFAC) was mandated to provide advice and recommendations to Canada’s Deputy Prime Minister and Minister of Finance and the Minister of Environment and Climate Change on defining green and transition investment (taxonomy). The SFAC confirmed and prioritized taxonomy as an early area of focus. The SFAC subsequently convened a Taxonomy Technical Experts Group (TTEG) to harness the leadership and expertise needed to deliver on this mandate item. Following substantial research and engagement, the TTEG prepared this report—the Taxonomy Roadmap Report—which was endorsed by the SFAC in September 2022.

The Taxonomy Roadmap Report contains 10 recommendations addressing the merits, design and implementation of a green and transition finance taxonomy for Canada. The recommendations are listed at the end of the Executive Summary and are followed by a summary of the taxonomy’s value proposition.

Part 1: Opportunities and Risks of Taxonomy

The TTEG recommends the development of a green and transition finance taxonomy, given that the potential opportunities for Canada far outweigh the risks.

A Canadian taxonomy can:

- promote the integrity of Canada's net-zero transition by mobilizing capital in alignment with Canada's transition pathways and climate objectives;
- further develop Canada's sustainable finance market, and help mitigate greenwashing risks;
- serve multiple use cases across public and private sectors where there would be value in having a standardized tool to benchmark climate and transition activities; and
- ensure that Canada can engage and contribute to the global taxonomy dialogue, particularly as it relates to Canada's economic interest in promoting a smooth transition for high-emitting sectors and workers in these sectors.



A Canadian taxonomy can promote the integrity of Canada's net-zero transition by mobilizing capital in alignment with Canada's transition pathways and climate objectives.

The risks include whether the taxonomy can adequately accommodate market and technological innovations; the amount of resources and time needed to develop a credible taxonomy against the uncertainties about its future take-up and use; and the potential competitiveness implications that may arise with the United States, which does not appear to be developing a national taxonomy. Although these risks are not insignificant, they can largely be mitigated and managed through effective taxonomy design, implementation and leadership.

Part 2: Taxonomy Design

The taxonomy's design ultimately has significant implications for the taxonomy's overall effectiveness, credibility, usability and interoperability. As such, the TTEG considered how the Canadian green and transition finance taxonomy should be designed to maximize opportunities and minimize risks. The taxonomy framework architecture was developed in partnership with the Canadian Climate Institute.

Key Elements for Success

The table below summarizes the key elements that need to be in place, as a foundational matter, to position the Canadian taxonomy for success.

Governance and Leadership

- ✓ Joint federal government-financial sector leadership, with strong provincial and Indigenous participation, to maximize credibility and usability
- ✓ Governance that is transparent and results-oriented and that safeguards scientific integrity
- ✓ Well-resourced, with stable and predictable funding for the long term

Objectives, Usability and Credibility

- ✓ Prioritize climate mitigation but position the initiative to move quickly into other critical areas, such as climate adaptation and resilience

- ✓ Develop a versatile taxonomy that can support classifying climate-related financial instruments (e.g., bonds, loans)—as well as other private and public sector use cases

- ✓ Require issuing companies to commit to issuing net-zero plans, targets and climate disclosure, to ensure the taxonomy is supporting credible transitions

- ✓ Foster rigorous, scientific-based screening criteria that are reviewed regularly to reflect innovation and climate science

- ✓ Promote interoperability with major science-based taxonomies globally to foster market confidence and reduce market fragmentation

Governance

The recommended governance model draws from the governance frameworks frequently observed among financial sector standard-setting bodies and taxonomies globally—while being tailored to meet the distinct needs and circumstances of this Canadian initiative. The governance model is meant to be transparent and results-oriented and to safeguard the scientific integrity of the taxonomy and its technical criteria. In addition, the intended outcome is for the governance model and all other aspects of the Taxonomy initiative to comply with the *United Nations Declaration on the Rights of Indigenous Peoples Act*.

The governance model consists of the following elements:

- **Taxonomy Council (oversight and approvals):** led by the federal government and the financial sector, with strong provincial and Indigenous participation, the Council would be responsible for the governance, strategic direction and performance of the Taxonomy initiative. It would approve all taxonomy proposals for publication.
- **Taxonomy Custodian (taxonomy developer):** housed within an independent organization, the Custodian would carry out the technical work to develop taxonomy proposals for Council approval. The Council may direct revisions to taxonomy proposals (subject to rules of procedure) as long as these revisions do not undermine the scientific integrity of the taxonomy and its technical criteria. The Custodian would conduct education and awareness-raising activities as well as respond to feedback and technical inquiries.
- **Technical Working Groups (external expertise):** convened by the Custodian, these working groups would support the development of technical criteria that are scientifically robust, credible and usable. Working groups may be permanent or time-limited and would comprise a combination of industry, academics and subject matter experts.
- **Stakeholder Advisory Forum (engagement and stakeholder relations):** the Custodian would establish a Stakeholder Advisory Forum comprising stakeholders affected by the Taxonomy initiative (e.g., environmental not-for-profit organizations, climate advocates, communities, industry, market-based groups). The Forum would provide an opportunity for the Custodian to update stakeholders on the Taxonomy initiative, invite feedback on consultation drafts and discuss implementation issues.

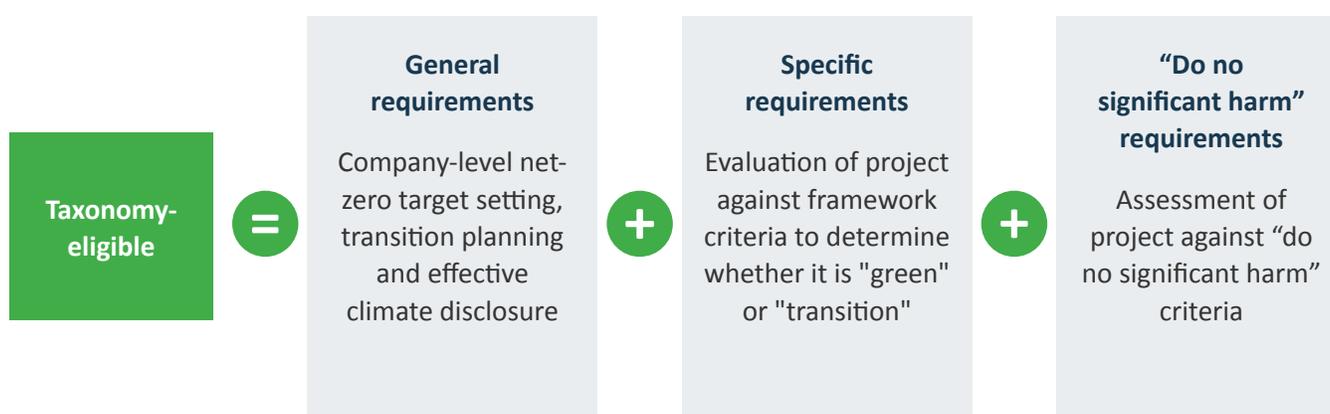
The governance model is meant to advance a voluntary taxonomy that is credible, usable and can serve multiple use cases. For greater certainty, neither the Council nor the Custodian would exercise an enforcement function in connection with the taxonomy's use.

Framework Architecture

The TTEG has developed a recommended framework architecture—in partnership with the Canadian Climate Institute—to guide the development of the Canadian green and transition finance taxonomy.

Under this framework, the taxonomy’s objective is to foster the issuance of green and transition financial instruments that are consistent with Canada’s goal of achieving net-zero emissions by 2050, and with the Paris-aligned commitment to keep global temperature rise to below 1.5 °C (based on pre-industrial levels) across all emissions categories (scopes 1, 2 and 3 emissions).¹

Issuing companies must meet three categories of requirements to issue green and/or transition financial instruments under this taxonomy:



General requirements: Issuing companies must comply with requirements related to company-level net-zero emissions target setting, transition planning and climate disclosure, in keeping with emerging domestic regulatory requirements and international standards and best practices. These requirements are meant to ensure that projects financed under the taxonomy are supporting credible transitions.

Specific requirements: Issuing companies must use a categorization framework to determine whether the project meets the “green” or “transition” eligibility criteria under the taxonomy or is, by default, ineligible.²

1 It is recognized that there may be inconsistencies between federal emissions reduction targets and the global climate target of keeping emissions well below 1.5 °C (relative to pre-industrial levels). In its design and application, the taxonomy should err on the side of the most robust and scientifically-grounded emissions targets.

2 The expectation is that the categorization framework is the element of the taxonomy that would be developed to support other use cases where it would be beneficial to have a standardized tool to categorize green and transition projects. Despite its presentation here, its use should not be viewed as being limited to classifying climate-related financial instruments.

Eligible green projects for issuing green financial instruments:

- Projects with low or zero scope 1 and 2 emissions, low or zero downstream scope 3 emissions and that produce goods or services that are expected to see significant demand growth in the global low-carbon transition.³ As a result, green projects also face relatively limited transition risks. Examples: green hydrogen production, afforestation projects, zero-emissions vehicle manufacturing (with low-emissions supply chains), electricity transmission infrastructure.

Eligible transition projects for issuing transition financial instruments:

- Projects that decarbonize sectors that historically have high scope 1 and 2 emissions (e.g., iron and steel, chemicals, aluminum and cement production). These are projects that—through making significant emissions reductions—improve the carbon competitiveness of activities exposed to higher carbon costs in the global low-carbon transition. These are projects that do not generate material downstream scope 3 emissions and operate in markets that are expected to remain stable or grow in the transition (due to a lack of economically and technically viable alternatives). Example: a steel production facility that installs an electric arc furnace, or constructing a new blue hydrogen facility with a high emissions capture rate.
- Projects that decarbonize sectors that historically have high downstream scope 3 emissions (e.g., oil and gas, or gas-fueled vehicles). These include projects that sell products that, due to high scope 3 emissions and the availability of viable alternatives, are expected to face decreasing global demand in transition. To remain transition-eligible, these projects must have well-defined lifespans that are approximately proportionate to the expected decline in global demand in representative 1.5 °C pathways. In the case of oil and gas projects, eligible projects must lead to significant emissions reductions from existing assets. Example: installing world-leading methane capture on existing natural gas production (with a short to moderate lifespan), or installing carbon capture, utilization and storage (CCUS) on an existing oilsands facility (with a short to moderate lifespan).

Ineligible projects:

- All projects related to solid fossil fuels. These are highly emissions-intensive activities that must be phased out immediately to align with representative 1.5 °C pathways (and even representative 2.0 °C pathways) and represent technological dead-ends, with economically and technically viable alternatives. Example: thermal coal mining, coal-fired power generation.
- Any projects that: create carbon lock-in and path dependency; are at a high risk of becoming stranded in net-zero pathways due to high scope 3 emissions and declining global demand; have scope 1 and 2 emissions that are inconsistent with net-zero pathways; and/or those that are unable to scale in transition. Example: exploration and development of new oil fields and industrial projects that fail to significantly reduce emissions.⁴

³ Eligible green projects are defined as having low or zero scope 1 and 2 emissions, and low or zero downstream scope 3 emissions, whereas the piloted methodology for scoring green projects, introduced in this Report, uses low or zero lifecycle emissions to define eligible green projects, which includes both upstream and downstream scope 3 emissions. The use of lifecycle emissions is consistent with the thresholds used in the European Union's Sustainable Finance Taxonomy. It accounts for emissions across the entire supply chain (or lifecycle) of the good or service.

⁴ While the Taxonomy Custodian ultimately needs to develop precise definitions, criteria and thresholds for the types of ineligible oil and gas projects, the proposed definition in this document is based on the best available climate science and scenario analysis and uses the International Energy Agency's treatment of oil and gas, described in its 2021 [report](#) *Net Zero by 2050: A Roadmap for the Global Energy Sector*, as a starting point. See Box 5 in this Report for more details.

The examples presented above on what may be eligible or ineligible under the taxonomy, and those in the main body of the Report, are provided for illustrative purposes only. The examples are meant to enhance the readability of the Report and are not meant to bind future work and decisions. The final determination on these matters will be made by the Taxonomy Council, based on the technical work of the Taxonomy Custodian, which is expected to include a thorough review of existing and emerging net-zero scenarios and other technical, science-based considerations. A particular focus will be to establish science-based criteria, anchored in emissions thresholds and metrics, that clearly delineate between projects that are transition versus those that are ineligible. This work should examine the recent decision by the European Union to include natural gas and nuclear power generation projects in its sustainable finance (green) taxonomy, circumscribed by strict emissions thresholds and technical screening criteria, including, for natural gas, requiring the replacement of a high-emitting fossil fuel-powered facility with a lower-emitting natural gas power generation facility (where no renewable alternatives are feasible).

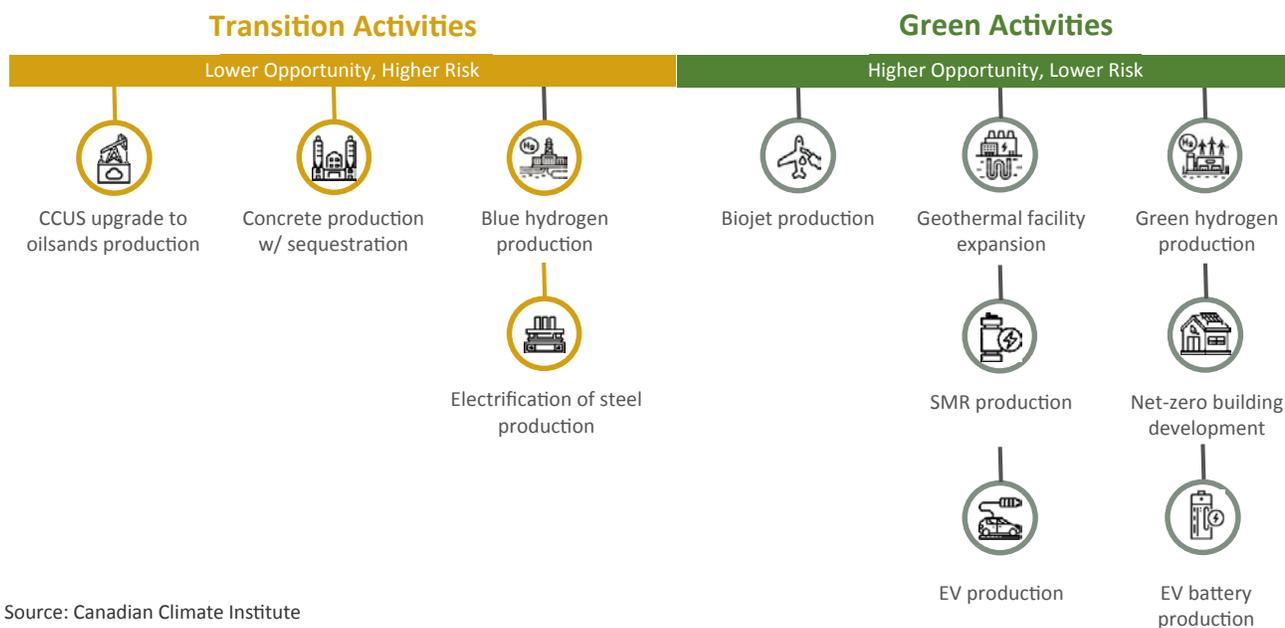
“Do no significant harm” requirement: The issuing company must assess the project against “do no significant harm” (DNSH) criteria to ensure the project is not detrimental to other environmental, social and governance (ESG) objectives (e.g., constructing wind turbines in a wetland). If a project violates the DNSH criteria, it would be ineligible for taxonomy financing. For example, a project categorized as green, which causes significant (non-climate) environmental damage, would be ineligible. To avoid creating duplication and additional work for issuers, the intention is to align the DNSH requirements with existing Canadian law (e.g., environment, labour and Indigenous Rights). The DNSH terminology and concept was pioneered in the European Union Sustainable Finance (green) Taxonomy and now features prominently in taxonomies globally.

Evaluating Transition Opportunity and Risk

The projects that fall within the categories of green or transition under the taxonomy vary in terms of transition opportunity and risk, sometimes significantly. The framework introduced above only categorizes projects as either green or transition, and does not evaluate the relative merits of the projects within these categories. As a future priority, the Taxonomy initiative should consider developing a methodology and criteria so that eligible green and transition projects are differentiated, for the purposes of classifying issuances, according to their relative transition opportunity and risk.

This would enhance market information on the specific opportunity and risk profile of green and transition projects underlying these issuances, which would be particularly beneficial for investors. It would also promote the credibility of the taxonomy, particularly as it relates to transition, as it would differentiate projects within the transition category and demonstrate how eligibility may evolve over time in the face of regular reviews and more stringent criteria.

To provide a running start, this Report sets out a proposed methodology and criteria to classify green and transition financial instruments in a differentiated manner. Figure 1 below illustrates how this could work in practice. It shows a range of hypothetical green and transition projects, evaluated based on their relative transition opportunity and risk. These examples are, however, for illustrative purposes only. The actual assessment of projects will require developing rigorous methodology and criteria, as well as identifying an appropriate delivery model for its use and administration.

Figure 1: Hypothetical Green and Transition Projects

Source: Canadian Climate Institute

Part 3: Implementation

There is an imperative to proceed expeditiously to develop and implement the Canadian green and transition finance taxonomy. Delays would present missed opportunities for Canada to mobilize green and transition capital in a meaningful way, as well as influence the global taxonomy dialogue. Proceeding expeditiously, however, cannot come at the expense of quality and credibility.

Given these considerations, the TTEG recommends that the taxonomy be developed and implemented in two discrete phases, as follows:

- ✓ **Phase 1** would see the SFAC publishing a short-form taxonomy covering priority sectors and activities by mid-2023, as well as laying the groundwork for the implementation of the taxonomy for the long term, including governance, funding and strategic planning.
- ✓ **Phase 2** would involve the full implementation of the Taxonomy initiative and publishing a substantially more complete and detailed taxonomy by end-2025 at the latest.

Phase 1 would be led by the SFAC and the TTEG. It would continue to rely on the existing governance arrangements, including engagement with the federal-provincial Official Sector Coordinating Group⁵, while recognizing that balanced engagement will be needed with provincial governments, Indigenous rightsholders and leadership, industry and other stakeholders to support implementation towards Phase 2. This Report should be viewed as a foundational starting point for Phase 1, which will then be further developed and refined under SFAC leadership to arrive at a comprehensive taxonomy model for Phase 2 implementation.

⁵ Members of the Official Sector Coordinating Group are Finance Canada, Environment and Climate Change Canada, Bank of Canada, Office of the Superintendent of Financial Institutions, Autorité des marchés financiers (Québec), Ontario Securities Commission, Alberta Securities Commission, British Columbia Securities Commission, Financial Services Regulatory Authority of Ontario and the British Columbia Financial Services Authority.

Recommendations

1. We recommend that Canada develop a green and transition finance taxonomy.
2. We recommend that the Canadian green and transition finance taxonomy be led jointly by the federal government and the financial sector, with strong provincial and Indigenous participation, under a governance model that is transparent and results-oriented, safeguards the scientific integrity of the taxonomy and is resourced commensurate with the importance and scope of the initiative.
3. We recommend that the taxonomy be developed, in the first instance, to focus on supporting climate mitigation objectives and be constructed so that it may support multiple use cases. The taxonomy's criteria must be rigorous, objective and anchored in climate science to build and maintain international credibility. The criteria must be reviewed and updated regularly and support interoperability with other major science-based taxonomies.
4. We recommend the implementation of a three-tier governance model, with a Taxonomy Council (Tier one)—jointly governed by the federal government and financial sector, with strong provincial and Indigenous participation—responsible for the overall strategic direction, design and funding of the initiative; a Custodian (Tier two) that develops the taxonomy proposals and technical criteria; and, technical working groups and a Stakeholder Advisory Forum (Tier three) that provide expert input to the Custodian in support of the development and evolution of the taxonomy.
5. We recommend that the taxonomy's principal objective be to support the achievement of Canada's emissions reduction targets, consistent with keeping global temperature rise to below 1.5 °C (based on pre-industrial levels) across all emissions categories. Grounding the taxonomy with this ambitious climate objective can build and maintain international credibility and also help drive progress on other important economic, financial and social objectives.
6. We recommend that companies issuing green or transition financial instruments under the taxonomy be assessed against general requirements related to company-level net-zero target setting, transition planning and climate disclosure. These would be aligned with emerging domestic regulatory requirements and international standards and best practices.
7. We recommend that the green and transition finance taxonomy embody the categorization framework introduced in this Report, where projects are determined to be taxonomy-eligible only if material scope 1, 2 and 3 emissions, excluding carbon offsets, are aligned with representative pathways in a 1.5 °C scenario. Projects that lead to significant increases in emissions and make it difficult to reduce emissions in the future would be ineligible under the taxonomy.
8. We recommend that the eligibility requirements under the green and transition finance taxonomy include an assessment against "do no significant harm" criteria, which meet the unique needs of Canada and are informed by the European Union's Sustainable Finance Taxonomy, including, but not limited to, meeting minimum standards for respecting Indigenous rights and reconciliation as well as for supporting workers and communities in relation to just transition.

9. We recommend that the Taxonomy initiative consider, as a future priority, developing a methodology and criteria to differentiate the relative risk and opportunity of green and transition projects, to enhance investment decision-making and the taxonomy's sophistication and credibility.
10. We recommend that the green and transition finance taxonomy be developed in two discrete phases. Phase 1 would see the SFAC publishing a short-form taxonomy covering priority sectors and activities by mid-2023, as well as laying the groundwork for the implementation of the taxonomy for the long term, including governance, funding and strategic planning. Phase 2 would involve the full implementation of the Taxonomy initiative and publishing a substantially more complete and detailed taxonomy by end-2025 at the latest.

Value proposition

The development and implementation of a Canadian green and transition finance taxonomy would:

- provide definitions of classes of projects and activities that support credible efforts to limit emissions that are aligned with Canada's transition pathways to net zero;
- introduce standards and performance metrics that directly, clearly and credibly align with Canada's net-zero transition (for both mitigation and adaptation and resilience) to generate confidence and encourage capital flows in domestic and international financial markets;
- illustrate Canada's leadership in the transition of a resource-based economy, aligned with international expectations;
- consider the realities of various pathways to net zero (including detailed economic assessments of alternatives) and the global need for access to energy;
- promote Canada's leadership in net-zero technology and support efforts to improve the resilience and competitiveness of the Canadian economy in the global low-carbon transition and reinforce Canada's net-zero commitments;
- establish a single, standardized and market-informed taxonomy for Canada with common principles defining green and transition investment in a form that is easy to use and promotes confidence;
- assist investors with clearly disclosing their progress towards meeting their net-zero targets; and
- improve capital flows to green and transition projects.

Consistent with the findings of Canada's Expert Panel on Sustainable Finance, a Canadian taxonomy holds the potential to enable climate change opportunity and risk management to become business as usual in financial services and be embedded in everyday decisions, products and services—a key imperative to keeping global temperature rise to below 1.5 °C and improving Canada's resilience to the impacts from climate change.



Introduction

To build a net-zero economy by 2050, Canada will need to increase its climate investment to an estimated \$125 billion to \$140 billion annually, from its current levels of about \$15 billion to \$25 billion annually.⁶ Scaling up climate investment to this magnitude will require significant actions by the public and private sectors—and having the right market infrastructure in place upfront.

Many countries have developed, or are in the process of developing, taxonomies—as a foundational tool, within a broader policy framework, to help mobilize and accelerate the deployment of capital to combat climate change. Given the urgency and complexity of the transition to net zero, taxonomies are viewed as a way to help liberate and expeditiously align capital and business activities in a manner consistent with national transition pathways and climate objectives.

Although approaches vary, taxonomies generally set criteria about which economic activities are climate-aligned. Taxonomies to date have largely focused on setting criteria for green activities; however, there are growing efforts to broaden the scope to transitional activities, given the importance of rapidly decarbonizing high-emitting sectors.⁷ In this context, taxonomies have been most frequently used to set standards for classifying climate-related financial instruments (e.g., green bonds), to help mitigate greenwashing risks and direct capital to activities with substantive climate credentials. However, given that taxonomies serve to assess climate and transition performance against benchmark criteria, their use cases have been growing, including to inform prudential policy, climate risk management practices, net-zero transition planning and climate disclosure frameworks, among others.

Despite the rise of global taxonomy development, questions have emerged about whether taxonomies are overly prescriptive and burdensome, whether they can adequately accommodate market and technological innovations and how to reconcile urgency with what is often a multi-year effort to develop credible, science-based taxonomies.

6 Government of Canada, [Budget 2022](#), page 60.

7 Singapore, South Africa and the Association of Southeast Asian Nations (ASEAN) are developing discrete transition categories for their taxonomies. Japan is focused on transition finance and has developed technical roadmaps to support transition finance in higher-emitting sectors. The European Union (EU) has recently decided to include some forms of natural gas and nuclear power generation in the EU Sustainable Finance Taxonomy, subject to strict screening criteria. The EU's Domestic Platform on Sustainable Finance has provided [advice](#) to the European Commission on how the concept of transition could be integrated into the EU Sustainable Finance Taxonomy.

In light of this context, and in keeping with the findings of Canada's Expert Panel on Sustainable Finance on taxonomy,⁸ the Government of Canada mandated the Sustainable Finance Action Council (SFAC) in May 2021 to provide recommendations to Canada's Deputy Prime Minister and Minister of Finance and the Minister of Environment and Climate Change on defining green and transition investment (taxonomy). This item was included as part of a set of mandate items aimed at developing the foundational market infrastructure to scale up sustainable finance in Canada. The mandate has since been updated to develop and report on strategies for aligning private sector capital with the transition to net zero.⁹

The SFAC confirmed and prioritized taxonomy as an early area of focus,¹⁰ and interpreted the mandate item to encompass two elements: to provide a recommendation on whether, based on the merits, a green and transition finance taxonomy would be an appropriate tool for the Canadian context; and, if in the affirmative, to provide recommendations on the optimal taxonomy design for Canada, including the key elements for success, the governance model and the framework architecture for the taxonomy.

Process

In summer 2021, the SFAC established the Taxonomy Technical Experts Group (TTEG) to harness the leadership and expertise to advance this mandate item. The TTEG comprises a subset of SFAC participating organizations and includes official sector representation and a number of external knowledge partners.

The TTEG subsequently engaged in extensive discussions about the theoretical and applied merits of a Canadian taxonomy as well as how such a taxonomy could be best designed, in light of domestic and international best practices and what would be appropriate for the Canadian context. These discussions were informed by a range of inputs and contributions, including:

- a green and transition taxonomy framework developed by the Canadian Climate Institute;
- a report titled, "Global Financial Taxonomies: Considerations for the Canadian Context," commissioned by the CSA Group and prepared by the Climate Bonds Initiative;¹¹
- an in-depth review of domestic and international reports on transition finance and taxonomies, a comparative survey of taxonomy and standard-setting governance models and an overview of domestic and international sustainable finance trends and developments (see Annex 3) prepared by the Institute for Sustainable Finance;

8 Recommendation 9.1 of the [Final Report](#) of the Expert Panel on Sustainable Finance states the following: "Convene key stakeholders to develop Canadian green and transition-oriented fixed income taxonomies." The Final Report also notes that Canada should begin by adopting an international green taxonomy that aligns with its global investment and trade priorities. It should then work either independently, or with other countries with similar resource endowments, to develop supplemental coverage for industry transition activities that are essential to Canada but not captured under current criteria. Canada's taxonomies should be granular enough to avoid ambiguity, while flexible enough to evolve with policy, demand and innovation.

9 The SFAC's [Terms of Reference](#) (mandate) were updated in May 2022.

10 The SFAC Chair confirmed taxonomy as a priority for the SFAC and an early area of focus through discussions with participating organizations and the results of a pre-work questionnaire.

11 This [report](#) presents research on 21 international taxonomies and highlights the approaches and characteristics that may be useful in developing a Canadian taxonomy.

- education sessions and discussions with domestic and international experts on a range of topics related to taxonomy; and
- lessons learned from the private sector initiative to develop a transition finance taxonomy under the guidance of the CSA Group.¹²

This Taxonomy Roadmap Report (“Report”) reflects the outcome of this work process. The TTEG finalized the Report following a series of feedback sessions conducted with taxonomy stakeholders in summer 2022. The SFAC Plenary considered and endorsed the Report in September 2022.

About This Report

The Report consists of three parts, each with analysis and discussion supporting recommendations for consideration and action. Part One introduces the concept of a green and transition finance taxonomy and evaluates its opportunities and risks for Canada. Part Two discusses how such a taxonomy should be designed for the Canadian context, with sections on key elements for success, governance and framework architecture. Part Three describes how to implement the taxonomy. A glossary of key terminology is provided at the end of the Report. The Report is accompanied by a [research compendium](#) that contains the research and supplementary documentation that were prepared in support of the TTEG’s work.

Acknowledgement

The SFAC Chair, Kathy Bardswick, the TTEG Chair, Barbara Zvan, and the SFAC broadly would like to thank the TTEG members for their deep commitment to this exercise and the significant time and effort that they devoted to developing this comprehensive Report. We would like to thank our external knowledge partners for sharing their expertise and insights throughout this work process, and the important contributions that they made to support the development of this Report. These are the Institute for Sustainable Finance, the Canadian Climate Institute, the CSA Group and the Global Risk Institute. The Canadian Climate Institute led the analysis informing the taxonomy framework architecture developed in this Report. We are grateful to have benefited from the separate private sector initiative on transition finance taxonomy, which was conducted under the guidance of the CSA Group. Although concluded without the publication of a consensus document, this private sector initiative was an important foundational undertaking, which helped to inform and accelerate this work process. Finally, we would like to thank the domestic and international experts who were kind enough to provide their perspectives on taxonomy, as well as the climate, research, Indigenous, industry and regulatory stakeholders and rightsholders who participated in feedback sessions on this Report.

¹² This included feedback sessions on the approach taken with targeted stakeholders (with environmental and emission mitigation expertise) not involved in the initiative.



Part One: Opportunities and Risks of Taxonomy

This section introduces the concept of a green and transition finance taxonomy. It then sets out the TTEG's assessment of the potential opportunities and risks associated with developing and implementing such a taxonomy in Canada. It concludes with a discussion of the findings and a recommendation.

A Primer on Green and Transition Finance Taxonomy

A green and transition finance taxonomy is a tool that is meant to help mobilize the allocation of capital to economic activities that are consistent with national transition pathways and climate mitigation objectives. It can be advanced by government, the private sector, or both, acting jointly.

This form of taxonomy establishes criteria, frequently organized by major economic sector, about which economic activities (assets, projects or revenue segments) are:

- ✓ **Green:** low- or zero-emitting activities (e.g., green hydrogen, solar and wind energy generation) or those that enable them (e.g., electricity transmission lines, hydrogen pipelines); and
- ✓ **Transition:** decarbonizing emission-intensive activities that are critical for sectoral transformation and consistent with a net-zero, 1.5 °C transition pathway (e.g., installing lower-emitting (electric) furnaces to produce steel).

Taxonomies also, by omission or exclusion, provide information about which activities present high risks to the climate transition by virtue of fostering the potential for stranded assets, perpetuating carbon lock-in and/or being unaligned with transition pathways to net zero.

Emissions categories in connection with green, transition or ineligible activities under the taxonomy can encompass direct scope 1 emissions (occur from owned or controlled sources (e.g., emissions generated onsite at a factory)), indirect scope 2 emissions (occur from the use of purchased energy (e.g., emissions associated with purchased electricity, used at a factory)) and value chain scope 3 emissions (occur in the value chain, including both upstream and downstream emissions (e.g., emissions associated with all the upstream inputs used at a factory, along with their consumption or disposal downstream)).

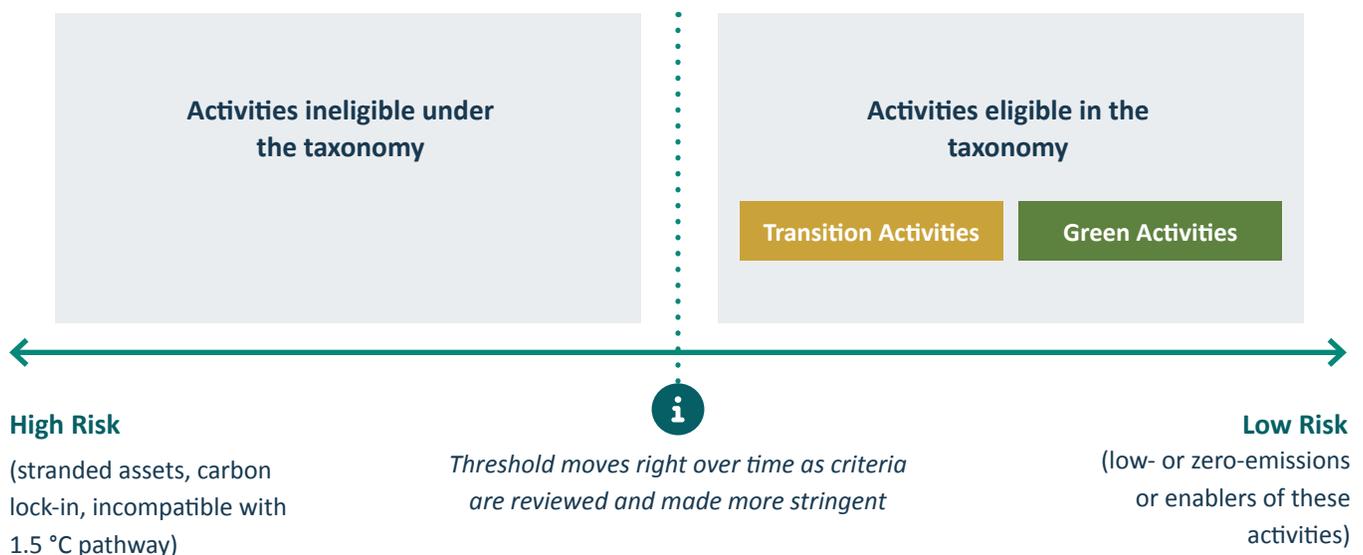
The criteria can be set by relying on high-level principles, lists of approved activities, technical screening criteria or a combination. The criteria can either be static or dynamic. Dynamic criteria are subject to a regular review process, where the criteria are made more stringent over time to reflect technological advancement and the need for increasing ambition as climate targets draw closer. Diagram 1 provides an overview of a green and transition finance taxonomy with dynamic criteria.

Taken together, the criteria are meant to support a theory of economy-wide change aimed at rapidly expanding green activities, decarbonizing higher-emitting sectors where possible and moving away from economic activities that are inconsistent with global climate objectives and carry significant transition risk.

The taxonomy can be used by investors, companies and financial intermediaries to assess the green and transition credentials of investment and business decisions, as well as to classify green and transition economic activities to support the issuance of corresponding financial instruments (a particular focus of this Report and the taxonomy architecture presented in Part Two).

It can also be used by government policymakers and regulators in multiple areas, including informing climate-related prudential frameworks (risk oversight and capital requirements), net-zero transition planning, sovereign green and transition bond issuance frameworks and climate disclosure requirements, among other use cases.

Diagram 1: Illustrative Example of a Green and Transition Finance Taxonomy Framework with Dynamic Criteria



Source: Canadian Climate Institute

The Opportunities of Taxonomy

Mobilizing green and transition capital

A Canadian taxonomy would help to mobilize and accelerate the deployment of capital in a manner that reflects Canada's transition pathways.

The challenge in Canada is not a shortage of transition capital per se, but the risk that capital is funding corporate transitions that are not well aligned with Canada's transition pathways. In the absence of a taxonomy to promote and facilitate alignment, it is unclear whether capital is being allocated in furtherance of achieving Canada's transition pathways or in an incremental, suboptimal manner. This uncertainty represents a material risk to the integrity of Canada's transition to net zero. A Canadian taxonomy would reduce this risk by setting robust criteria in keeping with transition pathways and government policy (see Table 1 for illustrative alignment examples).

Table 1: Opportunities to Align Taxonomy with Federal and Provincial Initiatives

(Initiatives are indicative and not exhaustive)

Federal initiatives	Description
Clean Fuel Regulations	The taxonomy could set criteria for the development and use of clean fuels in accordance with the Clean Fuel Regulations.
Carbon Capture, Utilization and Storage (CCUS) Tax Credit	The definition of eligible CCUS projects in the taxonomy could be aligned with the eligibility criteria set out in the CCUS tax credit.
Proposed Clean Electricity Standard (in support of a net-zero electricity sector)	The criteria prescribed in the taxonomy for emitting electricity generators could be set in accordance with the proposed Clean Electricity Standard that is presently under development.
Small Modular Reactors Action Plan	The taxonomy could define the development and deployment of small modular reactors as an eligible green activity.
Provincial initiatives	Description
Alberta Hydrogen Roadmap	The taxonomy could set emissions intensity thresholds and criteria for clean hydrogen in accordance with the considerations and vision set out in the Roadmap (e.g., low-carbon intensity production pathways that are cost effective and capable of large-scale production volumes).
CleanBC Industrial Incentive Program	The sector-specific emissions performance benchmarks set out in the CleanBC Industrial Incentive Program could be used to inform the emissions benchmarks and thresholds in the taxonomy.
Nuclear Green Bond Frameworks	The taxonomy's criteria related to power generation could be informed by the Ontario Power Generation and Bruce Power green bond frameworks, second party opinions and associated issuances.

Growing Canada's transition finance market for the long term

A Canadian taxonomy would foster investor confidence and support the growth of Canada's transition finance market. This is critical to ensuring Canadian companies have access to a reliable source of capital over time to support credible net-zero transition plans.

Canada's transition finance market is small and faces greenwashing risks. The transition bond segment of the transition finance market does not exist, having had only one transition bond come to market to date.¹³ Meanwhile, the sustainability-linked bond segment has grown rapidly in recent years but is now facing criticisms of greenwashing.¹⁴ The structure gives issuers control over how the proceeds are used as long as the forward-oriented sustainability targets are met. If these targets are not met, issuers will face a financial penalty, which is typically a 25 to 50 basis point increase on the bond's coupon payment.¹⁵ Questions have been raised, in connection with some Canadian and global issuances, about the ambition of the targets and the adequacy of the penalty for noncompliance.

To govern the issuance of green and transition bonds and loans, and to inform measures and metrics for sustainability-linked products, a Canadian taxonomy would accelerate the growth of this market in Canada. Growing the transition finance market is critical to ensuring that Canadian companies, especially those in hard-to-abate sectors, have access to a reliable source of capital to fund credible transition plans over the long term. Although companies may be presently able to raise capital from traditional sources to fund transition plans that may not align with Canada's transition pathways, this may not always be the case, as stakeholders increase pressure for greater alignment and accountability, assisted by disclosure and accountability frameworks that will become more widespread and sophisticated. As pressure increases, and market expectations evolve, there is value in having an established transition finance market, anchored in a science-based taxonomy that can be used to support credible transition plans.

Enhancing private and public sector climate frameworks

A Canadian taxonomy would provide a strong foundation upon which to inform and enhance climate frameworks across the private and public sectors; it is a versatile tool with a multitude of use cases (see Table 2).

Within the private sector, a taxonomy can be used to set standards for classifying climate-related financial instruments (bonds and loans). It can be used to highlight investments gaps and transition risks and opportunities, assess the transition performance of portfolio companies, support scenario analyses, enhance financed emissions reporting and improve climate data.

¹³ In 2021, Seaspan, a British Columbia-based marine transportation company, raised \$750 million from a blue transition bond to fund low-carbon container-ship construction and develop low-carbon fuels for marine vessels.

¹⁴ Annex 3 provides additional information on sustainability-linked bond issuances in Canada and globally, as part of a broader overview of key developments in the sustainable finance market over the last number of years.

¹⁵ See the S&P Global Ratings research note [How Sustainability-Linked Debt Has Become a New Asset Class](#), published on April 28, 2021.

Table 2: A Multitude of Use Cases to Support Canada's Climate Objectives

- | | |
|--|--|
| ✓ Climate and economic policy | ✓ Classifying green and transition financial instruments |
| ✓ Net-zero transition plans | ✓ Procurement policy |
| ✓ Carbon accounting/financed emissions reporting | ✓ Bank and insurance capital requirements |
| ✓ Scenario analyses | ✓ Green budgeting |
| ✓ Risk management | ✓ Climate-related tax policy |
| ✓ Climate stress testing | ✓ Blended finance |
| ✓ Climate disclosure | ✓ Trade policies (e.g., border carbon adjustments) |
| ✓ Data standardization | |

Source: NATIXIS, [The New Geography of Taxonomies: A Global Standard-Setting Race](#), November 2021.

The taxonomy can also be used as a key input in developing credible transition plans in line with emerging best practices. Box 1 highlights how taxonomies can be used by financial institutions to develop transition plans in keeping with the best practice framework being advanced by the Glasgow Financial Alliance for Net Zero (GFANZ). As a practical example, PSP Investments' in-house taxonomy devotes a full dimension to transition planning. It includes a three-phase categorization system in relation to portfolio companies, namely "no transition", "early transition" and "mature transition" (or aligned with the Science Based Targets initiative (SBTi)).¹⁶

Within government, a taxonomy can inform the issuance of sovereign green and transition financial instruments (e.g., transition bonds). It can be used by prudential supervisors to inform the development of prudential policy, including capital requirements and risk management. It may also be used by prudential supervisors to help standardize and improve the types of information and data filed by supervised entities in relation to green and transition financial exposures and related areas. Better information and data could support more robust climate risk analysis and, in turn, inform policy development. Finally, it can enrich climate disclosure requirements (e.g., reporting on taxonomy alignment); inform fiscal, tax, trade and export development policies; and enhance green- and transition-related procurement practices.

¹⁶ The SBTi defines and promotes best practice in emissions reductions and net-zero targets in line with climate science; provides technical assistance and expert resources to companies that set science-based targets in line with the latest climate science; and brings together a team of experts to provide companies with independent assessment and validation of targets.

Box 1: GFANZ's Proposed Recommendations and Guidance on Financial Institution Net-Zero Transition Plans

GFANZ proposes that financial institutions globally develop transition plans that lead to reductions in emissions and support net-zero transition through financing or enabling:

1. the development and scaling of climate solutions to replace high-emitting technologies, activities or services;
2. companies that are already aligned to a 1.5 °C pathway;
3. the transition of real-economy firms according to transparent and robust net-zero transition plans in line with 1.5 °C-aligned sectoral pathways; and
4. the accelerated, managed phase out of high-emitting physical assets.

Taxonomies can enhance transition plans by establishing criteria to help align financing decisions and targets with these four priority areas. They can serve to establish what the GFANZ refers to as "guardrails" to safeguard against greenwashing, in particular in relation to elements 3. and 4. that deal with financing related to transition and managed phase outs. More broadly, they can contribute to other elements of GFANZ's transition plan framework, including governance, implementation strategy and metrics.

Source: GFANZ. *Recommendations and Guidance on Financial Institution Net-Zero Transition Plans*, [Consultation Paper](#), June 2022.

Influencing the Global Taxonomy Dialogue

The global importance of taxonomy as a tool to mobilize and accelerate the deployment of capital towards climate objectives is significant and growing. Canada cannot influence and shape the global taxonomy dialogue without its own taxonomy.

There are 30 countries at different stages of taxonomy development (implemented, in development or being considered), including most of the Group of Seven (G7), the Group of Twenty (G20) and many developing economies (see Table 3). Among these, the EU Sustainable Finance Taxonomy is the most advanced and viewed as a global best practice. Taxonomy is a key framework item identified in the G20 Sustainable Finance Roadmap and a focus of the International Platform on Sustainable Finance, which has developed a common-ground taxonomy to promote taxonomy interoperability globally.¹⁷

¹⁷ See the [G20 Sustainable Finance Roadmap](#) and the International Platform on Sustainable Finance [documentation on the common-ground taxonomy](#). The G20 Sustainable Finance Working Group has developed principles for taxonomy development, which are presented in Box 2 later in the report.

Central banks and prudential supervisors globally are increasingly interested in taxonomies. The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) recently released the results of a survey showing that well over half of the 25 central bank respondents (55 per cent) and 24 supervisor respondents (60 per cent) are planning to use or are considering using taxonomies.¹⁸ In addition, the NGFS has issued two reports over the last year, in connection with its work program on bridging climate data gaps, indicating that taxonomies are an important building block for improving data reliability and comparability on a global basis.¹⁹ The reports note the need to intensify the development of taxonomies globally, in a manner that promotes interoperability and standardization, with a view to creating a baseline global taxonomy over time.

Taxonomies are featuring prominently in the private sector. Some suggest there are as many as 200 taxonomies in use globally by financial institutions and other private sector entities (e.g., PSP Investments, BlackRock).²⁰

The first phase of global taxonomy development has been on defining green activities; the second phase, which is underway, is to broaden taxonomies to define transition activities in the context of higher-emitting sectors. This second phase is more challenging, and of particular strategic interest to Canada, given the importance of resource and industrial sectors to Canada's economy.

A Canadian taxonomy would allow Canada to promote its interests in the global taxonomy dialogue and advance interoperability, as appropriate, with other major science-based taxonomies. In the absence of a Canadian taxonomy, there is risk that certain sectors and activities of importance to Canada are omitted, or that criteria are set that do not reflect the likely transition pathways of Canada.

¹⁸ See the NGFS [report](#) titled, Enhancing Market Transparency in Green and Transition Finance, published in April 2022. The NGFS is a network of 116 central banks and prudential supervisors dedicated to exchanging experiences, sharing best practices and contributing to the development of environment and climate risk management in the financial sector and to mobilizing mainstream finance to support the transition towards a sustainable economy. The Office of the Superintendent of Financial Institutions and the Bank of Canada are members.

¹⁹ The NGFS established a data work program in July 2020 to identify climate-related data needs and gaps, and to propose policy recommendations. In connection with this work, the NGFS issued a [progress report](#) in May 2021 and a [final report](#) in July 2022.

²⁰ E3G, [Expanding Common Ground: Deepening International Cooperation on Taxonomies](#), February 2022.



“The EU Taxonomy is emerging as a green standard that serves as a ‘common language’ between companies and investors. As of August 24th [2022], a total of 365 companies representing \$6.2 trillion in market cap have reported Taxonomy-eligibility, followed by 147 companies (\$3.1 trillion market cap) reporting Taxonomy-alignment a year ahead of time. Recognition and appreciation of the influence of the Taxonomy have been growing among companies in annual reporting and on earnings calls. Companies recognize that they can benefit from easier access to capital or lower cost of capital given their high Taxonomy exposure. Meanwhile, some companies with low Taxonomy relevance have noted the potential for financial and reputational risk.”

- Global Investment Bank

Table 3: Global Taxonomy Development

Taxonomy in Place	Taxonomy in Draft Development	Taxonomy Under Consideration	Other Taxonomy Initiatives
<ul style="list-style-type: none"> Bangladesh Brazil^a China Colombia European Union (27 member states) Georgia Indonesia Kazakhstan Korea (Republic of) Malaysia^b Mongolia New Zealand^c Philippines Russian Federation South Africa Sri Lanka 	<ul style="list-style-type: none"> Australia^d Chile Dominican Republic India Japan^e Kyrgyzstan Mexico Panama Singapore Thailand United Kingdom Vietnam 	<ul style="list-style-type: none"> Canada Egypt Hong Kong 	<ul style="list-style-type: none"> Association of Southeast Asian Nations (ASEAN) Taxonomy Climate Bonds Initiative Taxonomy International Platform on Sustainable Finance Common Ground Taxonomy International Organization for Standardization (ISO) Taxonomy Working Group on Sustainable Finance Taxonomies in Latin America and the Caribbean^f

a) Brazil's taxonomy was developed by the Brazilian Federation of Banks (FEBRABAN), which represents the Brazilian banking industry.

b) Malaysia's central bank, Bank Negara, has finalized and issued a principles-based taxonomy focused on climate change; Malaysia's Securities Commission is developing a Sustainable and Responsible Investment Taxonomy, which is under consultation.

c) New Zealand's taxonomy is focused on the agricultural sector (livestock and crops); it was developed by a Steering Group comprising banks and the Ministry for Primary Industries. It appears that New Zealand's public-private Centre for Sustainable Finance is committed to working with government partners to develop a comprehensive sustainable investment taxonomy by end-2023.

d) The Australian Sustainable Finance Institute is supporting an industry-led initiative to develop an Australian sustainable finance taxonomy, working closely with government and financial sector regulators.

e) Japan has published the "Basic Guidelines on Climate Transition Finance" that define transition finance and set out disclosure expectations for issuing transition-related financial instruments. The annex of this publication provides ten roadmaps for nine hard-to-abate sectors, which are meant to serve as a reference point for capital raising and investment in the transition context.

f) Launched in June 2022 by Costa Rica's Minister of Environment and Energy and Chair of the Forum of Ministers of Environment of Latin America and the Caribbean, the Working Group on Sustainable Finance Taxonomies in Latin America and the Caribbean (GTT- LAC) will work to develop a common framework of sustainable finance taxonomies for the region.

Source: internal research, with reference to the Climate Bonds Initiative publication [Global Green Taxonomy Development, Alignment, and Implementation, 2022](#).

The Risks of Taxonomy

Resource Intensity

Developing, implementing and maintaining a credible taxonomy would be time-consuming and resource-intensive. The initiative would be a substantive, long-term commitment, which would effectively involve fostering the development of an entirely new segment of Canada's capital markets focused on transition finance. It would require a permanent governance structure, a large team of expert and technical staff and a stable funding model. It would involve going sector by sector to set criteria for green and transition economic activities. Taxonomy proposals would require targeted and public consultations, and published versions would need to be supported by detailed guidance as well as education and awareness-raising activities. There would need to be ongoing maintenance and review activities. Although advancing a taxonomy would be a significant undertaking, there is deep knowledge and expertise in Canada in taxonomy-relevant areas that could be leveraged to accelerate taxonomy development efforts in the first instance and to support the initiative over time.

Uncertain Support

The level of support for a green and transition finance taxonomy among companies remains unclear. In the absence of policy signals (e.g., supervisory guidance, regulation), it is unclear how much demand there would be for the taxonomy. There is risk that companies, especially those in higher-emitting sectors, may bypass the rigours of the taxonomy in favour of continuing to raise capital for transition purposes through the use of traditional financial instruments. In addition, some oil and gas companies are currently "cash rich" and may not have an immediate need for the taxonomy.

Pace of Innovation

The taxonomy is too prescriptive and rules-based and may not be able to keep pace with innovation. There is risk that the taxonomy's criteria may not be able to be reviewed and updated enough to keep pace with the rate of technological and market innovation. The taxonomy may prevent capital from being allocated to areas at the technological frontier of green and transition, especially in comparison to more principles-based approaches. There may also be challenges in designing a sufficiently comprehensive taxonomy to cover all the activities, projects and assets to which it should reasonably apply.

Alignment With the United States

The United States (U.S.) has no stated plans to develop a taxonomy, which raises policy questions and design challenges for Canada. In March 2021, the U.S. Climate Envoy expressed interest in the taxonomy concept but indicated that any approach would need to safeguard U.S. capital markets from excessive regulation.²¹ Since that time, the U.S. has been publicly silent on taxonomy, appearing to be in favour of more market-centric, principles-based approaches to transition, with a focus on strong climate disclosure, including net-zero transition plans.

Although the U.S. does not appear to be proceeding with a national taxonomy at this time, U.S. investment managers that actively manage "green" or "sustainable" bond mandates will generally have evaluation frameworks (or taxonomies) to determine what is eligible for their fund. The green bond indices also employ methodologies to determine eligibility. For example, the S&P 500 Green Bond Indices are composed of a universe of global bonds classified as "green" by the Climate Bonds Initiative (CBI) and subject to eligibility criteria.

²¹ The only reported public comment on the prospect of a U.S. taxonomy came from Climate Envoy John Kerry following climate discussions with European leaders in March 2021 (see the Financial Times article [John Kerry Warns EU Against Carbon Border Tax](#), March 11, 2021). He indicated that no final decision had been made on the topic and expected that the Treasury Secretary and the Chair of the Securities and Exchange Commission may weigh in on this topic and other areas related to sustainable finance. He noted that any approach to a taxonomy would need to safeguard against excessive regulation.

The development of a Canadian taxonomy should be advanced to support achieving Canadian climate objectives and transition pathways but be mindful of the potential cost and competitiveness implications for Canadian market participants, and to seek interoperability wherever possible with the capital markets in the U.S. This Report is advancing a taxonomy for voluntary use, at least in the first instance, which means that any potential cost and competitiveness implications are not binding. However, for the taxonomy to be most useful to Canadian market participants, it is critical that taxonomy development be grounded in climate science, while being mindful of level playing field and interoperability considerations with U.S. capital markets and consistency with U.S. climate policy at federal and state levels.

Discussion and Recommendation

The assessment indicates that the opportunities for Canada of a green and transition finance taxonomy are significant.

The taxonomy can:

- ✔ promote the integrity of Canada's net-zero transition by mobilizing capital in alignment with Canada's transition pathways and climate objectives;
- ✔ further develop Canada's sustainable finance market, and help mitigate greenwashing risks;
- ✔ serve multiple use cases across public and private sectors where there would be value in having a standardized tool to benchmark climate and transition activities; and
- ✔ ensure that Canada can engage and contribute to the global taxonomy dialogue, particularly as it relates to Canada's economic interest in promoting a smooth transition for high-emitting sectors and workers in these sectors.

Against this, the assessment of the risks indicates they are not insignificant—but they can be largely minimized and managed through commitment and leadership from government and the financial sector, as well as through effective taxonomy design and implementation. Overall, the opportunities of a well-designed taxonomy far outweigh the risks.

Recommendation 1

We recommend that Canada develop a green and transition finance taxonomy.





Part Two: Taxonomy Design

In light of the affirmative recommendation, the TTEG then considered how the Canadian green and transition finance taxonomy should be designed to maximize the opportunities and minimize the risks and costs. The taxonomy framework architecture was developed in partnership with the Canadian Climate Institute.

Section A below identifies the key elements that are needed for the taxonomy to be successful. These deal with strategic considerations regarding leadership, governance and resourcing, as well as objectives and design considerations to promote credibility and usability.

The subsequent two sections (B and C) apply these requirements. The first sets out the proposed model to govern the Canadian Taxonomy initiative and the second describes the proposed framework architecture to guide taxonomy development, including the objectives and requirements for the issuance of green- and transition-classified financial instruments.

The overall approach is consistent with the general principles for taxonomy development set by the G20 Sustainable Finance Working Group (see Box 2).

Box 2: G20 Sustainable Finance Working Group:

Principles for Taxonomy Development

1. Ensure material positive contributions to sustainability goals and focus on outcomes;
2. Avoid negative contribution to other sustainability goals;
3. Be dynamic in adjustments reflecting changes in policies, technologies and state of the transition;
4. Reflect good governance and transparency;
5. Be science-based for environmental goals and science- or evidence-based for other sustainability issues; and
6. Address transition considerations.

Source: G20 Sustainable Finance [Roadmap](#), October 2021

A) Key Elements for Success

Leadership and Governance

Joint Federal Government–Financial Sector Leadership: The leadership and commitment of the federal government and the financial sector, with strong provincial and Indigenous participation, would create optimal conditions for taxonomy development and implementation.

- Federal leadership would help ensure that the taxonomy is grounded in national climate objectives and that it informs climate and economic policy. It would bring credibility to the taxonomy exercise, including, importantly, from international stakeholders, and it would have a range of levers at its disposal to support the widespread adoption of the taxonomy. Strong provincial and Indigenous participation would reinforce many of these areas. The vast majority of taxonomies developed to date have been by governments (see Table 3 above), and, according to the World Bank and the Organisation for Economic Co-operation and Development (OECD), taxonomies are most effective when implemented alongside supporting regulation/incentives and within a broader policy framework.²²
- Financial sector leadership would ensure that the taxonomy is usable, credible and fit for purpose, and that it is adopted as the financial sector standard for classifying green and transition financial instruments.

Effective Governance: The taxonomy’s governance model needs to be transparent and results-oriented and to safeguard the scientific integrity of the taxonomy. The governance should be informed by the best-practice models observed among many financial standard-setting bodies globally and taxonomy initiatives. It should ensure that industry and technical experts inform the development of the taxonomy and that there are opportunities for a range of Canadian stakeholders to provide perspectives on the work.

Adequate Resourcing: The initiative needs dedicated and stable funding over the long term, on a level consistent with the substantive nature of the undertaking. A proper taxonomy initiative cannot be developed without a well-funded custodian that is able to attract and retain the expert staff needed to develop the framework and, in turn, develop the guidance and undertake the outreach necessary to promote its use.

Recommendation 2



We recommend that the Canadian green and transition finance taxonomy be led jointly by the federal government and the financial sector, with strong provincial and Indigenous participation, under a governance model that is transparent and results-oriented, safeguards the scientific integrity of the taxonomy, and is resourced commensurate with the importance and scope of the initiative.

²² The World Bank publication [Developing a National Green Taxonomy: A World Bank Guide](#) notes that “[t]he taxonomy should have the stature of an official guideline or policy for filtering such investments in both the public and private sectors,” and that “[i]nternational experience also suggests a green taxonomy may not succeed in catalyzing the targeted investments to the extent desired without supporting policy and/or regulations.” The OECD publication [Developing Sustainable Finance Definitions and Taxonomies](#) notes that “... taxonomies are only one part of the range of policies needed to mobilise investment, but that they have significant potential to mobilise investment in the context of a broader supportive policy framework,” and that “[s]ustainable finance taxonomies can be tools to articulate sustainability policy objectives, and are a potentially important element of sustainability policies.”

Objectives, Credibility and Usability

Climate Mitigation as the Priority Objective: Given the climate urgency, the taxonomy should focus, in the first instance, on setting green and transition criteria to mobilize private capital in support of Canada's transition pathways and climate mitigation objectives. The taxonomy should aim to set criteria for all sectors and activities that have material opportunities and risks in transition. Over time, the taxonomy should be expanded to cover other environmental and social objectives, including, importantly, climate adaptation, which is a critical issue for Canada and which would benefit from the taxonomy's benchmarking features. Many taxonomies globally cover multiple objectives.

Promoting Versatility in Use Cases: Taxonomy development should focus on classifying "green" and "transition" activities for the purposes of issuing financial instruments, including bonds and loans. Although the use case is oriented towards market participants, especially investors, companies and financial intermediaries, this does not mean the taxonomy should be confined to this single use case. Since the taxonomy sets criteria to assess whether an activity is green or transition, the taxonomy can serve many other use cases (see Table 2 above) and should be developed, as such, to facilitate and promote its broader application.

Net-Zero Commitments and Reporting: The company issuing financial instruments under the taxonomy should be required to commit to net zero by 2050 and then publish a corresponding net-zero transition plan with science-based emissions targets, followed by annual progress reporting. Specifically, the requirements should be based on emerging domestic regulatory requirements and international standards and best practices. The company should also disclose climate risks and opportunities to investors and other stakeholders in accordance with the Task Force on Climate-Related Financial Disclosures (TCFD) and forthcoming Canadian regulatory requirements and global sustainability reporting standards. In terms of issuance reporting, the taxonomy should set issuance verification requirements in line with current international best practices and, among these, encourage the use of the higher standard of third-party assurance at both the pre- and post-issuance stages.

Rigorous Screening Criteria:

- **Objective, Science-Based:** The criteria used to determine whether an activity qualifies as green or transition under the taxonomy should be based on Canada's transition pathways and aligned with the federal government's Emissions Reduction Plan and the goals of the Paris Agreement, including trying to limit the global average temperature increase to 1.5 °C above pre-industrial levels. The criteria should be specific, clearly defined and science-based, using thresholds (not principles) that are technology-agnostic to the greatest extent possible. The criteria and thresholds should require the reporting of standardized metrics and qualitative information, which would establish clear data requirements and support the intra- and inter-industry comparability of taxonomy alignment and post-issuance reporting.
- **Adapt With Science and Innovation:** The domain of climate mitigation is evolving rapidly, and it is important that the taxonomy remains relevant and up to date. To that end, the taxonomy should be reviewed regularly to ensure that the criteria and other requirements reflect the most recent climate science, government policy and technological and market innovations. For example, the European Commission is required to review the screening criteria of the European Union's sustainable finance taxonomy at prescribed intervals, namely at least every three years for transition activities and at least every five years for green activities. It is anticipated that, through this process, some activities that were previously considered taxonomy-aligned would lose their eligibility, as criteria becomes more stringent over time.

- **Process to Consider Ad Hoc Inclusion Requests:** In addition to regular reviews, the developers of the taxonomy should consider the merits of a mechanism that would allow for the review of material ad hoc requests from market participants to scope in one-off activities, projects and assets for inclusion in the taxonomy. As it is difficult to set criteria that would cover all intended green and transition activities, a review mechanism would provide discretion to grant ad hoc requests, in keeping with the taxonomy’s climate objectives and climate science.

“Do No Significant Harm” Principle: Criteria should be set to require taxonomy users to screen out green and transition activities being considered for investment if they do significant harm to other ESG objectives (e.g., to Indigenous reconciliation (e.g., constructing a green hydrogen-enabled pipeline network in proximity to Indigenous communities absent appropriate consultation/approvals), to climate adaptation (e.g., constructing a solar farm in a projected future flood plain) or to biodiversity (e.g., building wind turbines in a wetland). The objective is to prevent myopic investment processes where the objective of climate mitigation is advanced without regard for other important objectives.

Global Interoperability: Canada should seek to align the common features and criteria of the Canadian taxonomy with the science-based taxonomies of other major jurisdictions, including, for example, the European Union’s sustainable finance taxonomy. A Canadian taxonomy that is comparable and interoperable with other major taxonomies globally would promote market confidence and reduce market fragmentation. It would be attractive to international investors and promote Canada as a destination for green and transition investment.

Recommendation 3



We recommend that the taxonomy be developed, in the first instance, to focus on supporting climate mitigation objectives and be constructed so that it may support multiple use cases. The taxonomy’s criteria must be rigorous, objective and anchored in climate science to build and maintain international credibility. The criteria must be reviewed and updated regularly and support interoperability with other major science-based taxonomies.

B) Governance Model

Effective governance is critical to the long-term success of the Taxonomy initiative. In keeping with the identified elements for success, the TTEG has sought to develop a governance model for the taxonomy that is transparent and results-oriented and that safeguards the scientific integrity of its criteria. The aim is to have a model that results in an objective, science-based taxonomy, issued in the form of voluntary guidance, which can be used to inform a range of use cases, with a first focus on classifying eligible green and transition activities to support issuing corresponding financial instruments.

The model set out below is based on the three-tier governance framework frequently observed among financial sector standard-setting bodies and taxonomy initiatives globally (see Annex 1 for examples), while being tailored to meet the distinct needs and circumstances of Canada (Diagram 2 below provides a summary of the governance model). Given the voluntary nature of the taxonomy, the governance model does not contemplate a compliance review and enforcement function, although its use may ultimately intersect with federal and provincials laws (e.g., issuing financial instruments under the taxonomy would be subject to provincial securities laws that are administered by provincial securities regulators, which play a compliance and enforcement function).

The three-tier model generally consists of:

1. a high-level body that is accountable for the initiative and provides strategic direction and oversight (Tier one);
2. a technical custodian body with expert and technical staff that develops the standards and technical criteria (Tier two); and
3. technical advisory groups comprising independent external experts that support the custodian's technical work, as well as forums and due process initiatives to obtain stakeholder feedback on consultation drafts (Tier three).

Tier One: Taxonomy Council

Mandate

The Taxonomy Council ("Council") would be responsible for the governance, strategic direction and performance of the Taxonomy initiative. It would be jointly governed by the federal government and Canada's financial sector, with strong provincial and Indigenous participation.

The Council would set the high-level objectives, design principles and priorities for the development of the taxonomy. The Taxonomy Custodian ("Custodian"), as the chief technical architect of the taxonomy (role described below), would develop taxonomy proposals in accordance with these parameters and strategic direction. The Council would periodically engage with the federal Net-Zero Advisory Body as an input into its priorities and planning activities.

The Council would consider for approval all taxonomy proposals submitted to it by the Custodian for publication. In reviewing a taxonomy proposal for the first time, the Council could approve it outright or send it back to the Custodian with feedback for revision. If the proposal is not approved by the Council after reconsideration, the Council would have the authority to direct the Custodian to make revisions to the taxonomy as long as these revisions do not undermine the scientific integrity of the taxonomy (e.g., the feedback could be related to the practicality of usage).²³ The Council, for example, could not direct the revision of criteria to include a prescribed set of economic activities where the scientific evidence suggests they would not be consistent with a 1.5 °C transition pathway. To the greatest extent possible, it is critical that the Council not interfere with the Custodian's technical function.

The process to consider and approve taxonomy proposals would be established in formal voting procedures set by the Council. Under these procedures, federal representatives would hold a simple majority of the votes, reflecting the initiative's public interest dimension and for credibility purposes (especially for outside observers). Upon establishment, the Council would convene an advisory committee of external experts (e.g., distinguished academics, researchers) that Council members could engage to support their assessment of taxonomy proposals as well as advise on other matters related to their duties on the Council.

The Council would review and approve the business plan, budget and other corporate reporting in respect of the Custodian and the initiative more broadly. The federal government and the financial sector would be responsible for ensuring the initiative is adequately funded, both at start-up and over time. In this context, a funding model

²³ The Council, in its rules of procedure, will set the number of times a proposal can be resubmitted by the Custodian before the Council can direct the Custodian to revise the proposal. The rules would also circumscribe the use of this directive authority by the Council.

where the primary beneficiaries of the taxonomy—the financial sector, industry and government—share its costs may be appropriate. There may also be opportunities that could be explored in the future to monetize elements of the taxonomy work (e.g., sale of taxonomy-related publications).

The Council may direct the Custodian to undertake periodic reviews of financial instruments issued under the taxonomy to identify any systemic issues. The Council may consider taking actions aimed at addressing systemic issues identified during these reviews, including issuing a public statement or referring the matter to the appropriate authorities.

Composition

The federal government and the SFAC (initially) would be responsible for setting the overarching composition of the Council, and each would appoint its respective members to the Council.

Federal representation should encompass those departments and agencies whose mandates motivate a direct policy and/regulatory interest in the Taxonomy initiative. This should include, at minimum, the Office of the Superintendent of Financial Institutions, the Bank of Canada, Finance Canada, Environment and Climate Change Canada and Natural Resources Canada. Federal representation should be permanent and assigned to senior-level positions (not specific individuals) within participating federal departments and agencies.

Financial sector representation should encompass each of the major segments of Canada's financial sector, namely deposit-taking institutions, insurance companies and pension funds (core financial sector users of the taxonomy). Financial sector representation would be assigned to senior executives, selected, in the first instance, by the SFAC to represent the interests of their designated financial sector segment, and the term would be of a fixed duration (e.g., four years). As financial sector representation would rotate over time, the Council would be expected to set procedures for nominating and appointing new financial sector representatives (e.g., create a committee to identify and nominate new financial sector representatives for Council approval).

The Council would benefit from the representation of provincial governments, to promote the development and implementation of a Canadian taxonomy in a manner that is mindful of provincial considerations, including climate and transition policies and resource development. It would also crucially benefit from Indigenous representation given the taxonomy's potential impact on the economies and interests of Indigenous Peoples. The intended outcome would be for all aspects of the Taxonomy initiative to comply with the United Nations *Declaration on the Rights of Indigenous Peoples Act*.²⁴ Prior to finalizing the governance model, the federal government should engage with provincial governments and Indigenous rightsholders and leadership to determine how they wish to participate and be represented on the Council.

Tier Two: Taxonomy Custodian

The Custodian would be responsible for carrying out the technical work to develop taxonomy proposals for the Council's approval. The proposals must be conducted in accordance with the high-level objectives, design principles and priorities set by the Council.

24 This Act became law in June 2021, which requires the federal government to take all measures necessary to ensure the laws of Canada are consistent with [UNDRIP](#). Article 18 of UNDRIP states that “[i]ndigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions,” and Article 19 indicates that “[s]tates shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.”

The Custodian should be established within an independent, non-partisan organization, to have some pre-established separation from governments, the financial sector and other interests. The Custodian should have expertise in climate change and the environment, as well as an established network of experts in taxonomy-relevant areas, which could be engaged for research and advice purposes and as potential participants on technical working groups to support taxonomy development (discussed below).

The Custodian would house the taxonomy's management and technical staff, at levels in keeping with the scope of the exercise and funding levels, as set by the Council. The staff would be responsible for leading the development of the taxonomy architecture (structure, content presentation, methodologies) as well as developing the technical criteria. This would involve work planning and priority setting and establishing the technical working groups of experts needed to support the taxonomy work, based on an understood approach established with the Council. The Custodian would set an internal process, acceptable to the Council, for the review of draft taxonomy proposals before they are released for public consultation and subsequently submitted to the Council for approval. Following the taxonomy's publication, the Custodian would lead efforts to develop guidance and educate stakeholders on the taxonomy's content, as well as establish a service delivery function to respond to feedback and technical inquiries.

The Custodian would establish a process to regularly review and update the technical criteria to reflect the most recent climate science, government policy and technological and market innovations. It would also establish a formal process to consider material ad hoc requests from market participants to scope in one-off activities, projects and assets for inclusion, limited to those that reflect the taxonomy's climate objectives and are in keeping with climate science. The Council would be responsible for approving changes to the criteria and granting ad hoc requests, on the advice and recommendation of the Custodian.

Tier Three:

Technical Working Groups

The Custodian would be responsible for convening technical working groups that would support the development of technical criteria that are scientifically robust, credible and usable. Working groups may be permanent or of fixed duration and would comprise the right mix of industry, academics and subject matter experts. The working groups may be organized by sector (e.g., oil and gas, mining), topic/theme (e.g., clean technology) and/or by stakeholder group (e.g., Indigenous matters). The working groups' terms of reference and composition should aim to appropriately balance rigour and efficiency.

Stakeholder Advisory Forum

The Custodian would establish a Stakeholder Advisory Forum ("Forum") comprising stakeholders affected by the Taxonomy initiative, such as environmental not-for profit organizations, climate advocates and just transition stakeholders (e.g., industries, workers and communities). In setting the composition, the Custodian should seek to establish a broadly representative Forum.

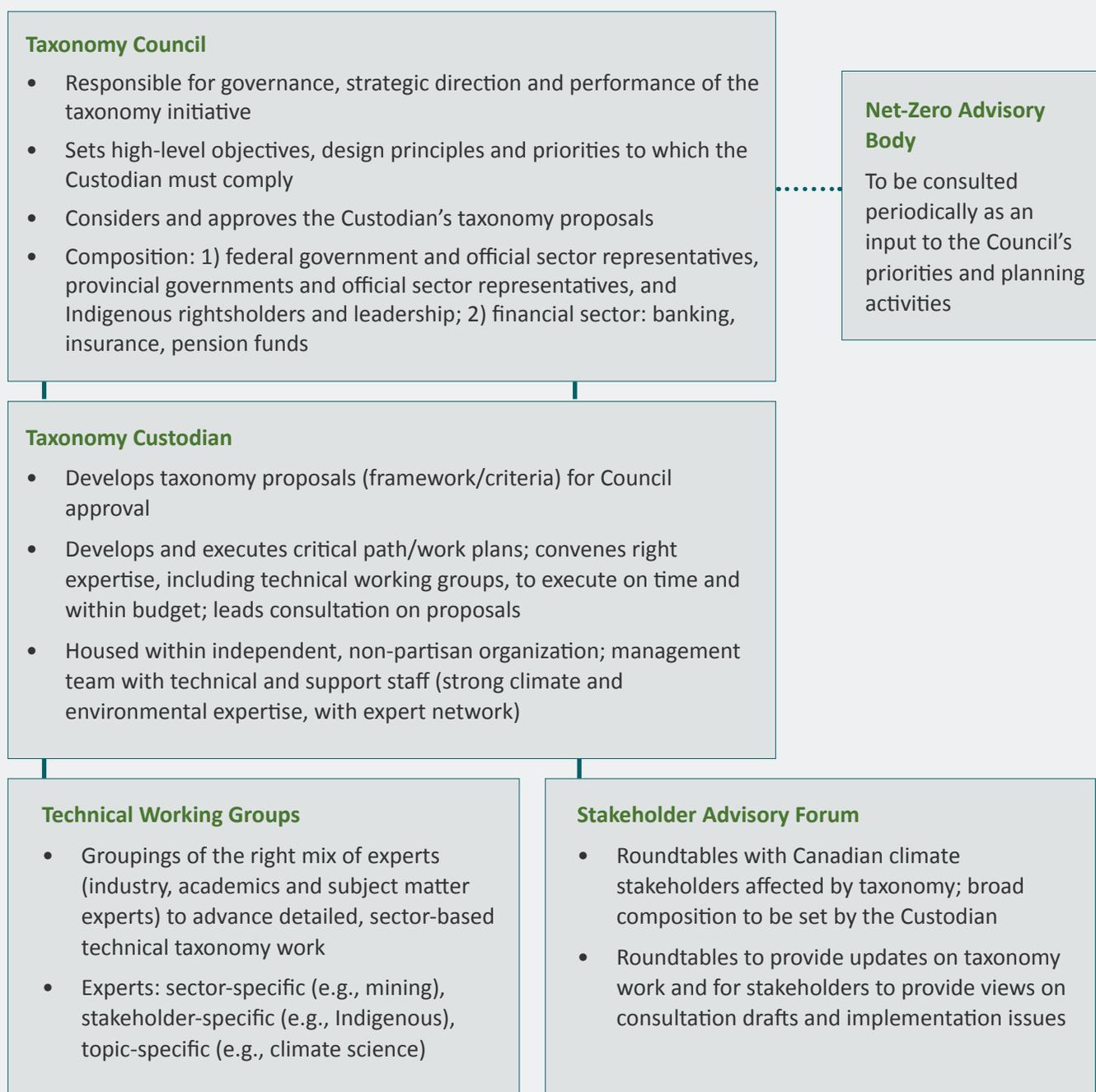
The Forum would provide an opportunity for the Custodian to update stakeholders on the status and priorities of the Taxonomy initiative. It would be used to invite feedback on consultation drafts as well as to discuss matters related to the implementation of the taxonomy (e.g., greenwashing, "do no significant harm" principle). The Forum would not be meant as a body to develop technical criteria (this is the role of the technical working groups above), but rather to ensure that those affected by the taxonomy have an opportunity to engage with the Custodian in a dedicated forum at prescribed intervals.

Recommendation 4



We recommend the implementation of a three-tier governance model, with a Taxonomy Council (Tier one)—jointly governed by the federal government and financial sector, with strong provincial and Indigenous participation—responsible for the overall strategic direction, design and funding of the initiative; a Custodian (Tier two) that develops the taxonomy proposals and technical criteria; and, technical working groups and a Stakeholder Advisory Forum (Tier three) that provide expert input to the Custodian in support of the development of the taxonomy.

Diagram 2: Overview of the Proposed Taxonomy Governance Model



C) Framework Architecture

This section describes the recommended framework architecture to guide the development of the Canadian green and transition finance taxonomy. It sets out the objectives of the taxonomy and discusses the general and specific requirements that must be met by companies to issue green and/or transition financial instruments under the taxonomy. It can also be used to classify bonds, equity and loans held in a portfolio. The Canadian Climate Institute developed the framework architecture based on its research on domestic net-zero pathways and the implications for Canada of global low carbon shifts.

The general requirements deal with the preparation of company-level transition plans and climate disclosure to ensure that financing under the taxonomy is supporting credible transitions. The specific requirements then set out a multi-step process to evaluate whether projects are taxonomy-eligible and do no significant harm to other ESG objectives.

To support interoperability, the taxonomy builds on approaches used in other countries while incorporating new elements and thinking based on the unique attributes of the Canadian economy and the pathway to achieving net-zero emissions by mid-century. Although the section focuses on a single use case (i.e., standards for issuing green and transition financial instruments), the intention is for the framework to support other public and private sector use cases (e.g., net-zero transition planning, climate disclosure).

The framework—the criteria, metrics and thresholds—is meant to provide a strong foundation upon which to advance Canada’s taxonomy agenda. It should, however, not be interpreted as final, but as an informed starting point for additional research, consultation and refinement as the initiative progresses.

Objectives

The taxonomy framework is intended to guide the issuance of green and transition financial instruments that are consistent with Canada’s goal of achieving net-zero emissions by 2050, along with the interim emissions reduction milestones required to achieve this goal. More broadly, the framework is designed to be consistent with the Paris-aligned global commitment to keep global temperature rise to below 1.5 °C (based on pre-industrial levels).²⁵

The framework addresses the entire lifecycle of greenhouse gas (GHG) emissions associated with economic activities, including scope 1, 2 and 3 emissions (see Box 3). Scope 3 emissions are not part of Canada’s federal emissions reduction targets, but they must feature prominently in the taxonomy because they are a critical transition issue for Canada’s financial sector (financed emissions) as well as other sectors, including oil and gas (emissions from third-party use or consumption).

25 SFAC recognizes that there may be inconsistencies between the emissions reduction targets established by Canadian governments and the global climate target of keeping emissions well below 1.5 °C (relative to pre-industrial levels). In its design and application, the taxonomy should err on the side of the most robust and scientifically-grounded emissions targets.



Box 3: Use of emission ‘scopes’ in the taxonomy

GHG emissions are categorized into three scopes by the [GHG Protocol](#), which provides the most widely used standards for carbon accounting. Scope 1 emissions are direct emissions that occur from owned or controlled sources. Scope 2 emissions are indirect emissions that occur from the generation of purchased energy. Scope 3 emissions are indirect emissions outside of scope 2 that occur in the value chain of the reporting entity, including both upstream and downstream emissions.

The taxonomy framework includes all three scopes. While most federal and provincial mitigation targets and policies do not include scope 3 emissions, it is an increasingly important part of understanding transition risk. For example, industries whose products generate significant downstream (scope 3) emissions are vulnerable to declining product demand as climate policies become more stringent and place carbon constraints on consumers.

Scope 3 emissions are an important issue for financial institutions, as they encompass the emissions in their lending and investment portfolios (i.e., financed emissions). As a reflection of their importance, GFANZ requires members to report on all three emissions categories. Scope 3 emissions are also a major focal point in global efforts to improve climate-related disclosures, particularly in global capital markets. The ISSB is currently developing a draft global climate disclosure standard that would require companies to disclose scope 3 emissions ([ISSB, 2022](#)). The Partnership for Carbon Accounting Financials (PCAF) [standard](#) was launched in 2020 to help financial institutions consistently measure and disclose scope 3 emissions associated with their loans and investments. Scope 3 financed emissions are often the most significant part of the emissions inventory of financial institutions and thus a prime means to assess climate-related risks and opportunities.

The taxonomy focuses primarily on the role of downstream scope 3 emissions when assessing the demand-side risk of projects. This reflects the fact that downstream emissions typically represent a significant portion of scope 3 emissions of products facing material demand-side risk. Burning fossil fuels in internal combustion engines, for example, represents 70 per cent to 80 per cent of their total lifecycle emissions ([IHS Markit, 2020](#)), which would be considered the downstream scope 3 emissions for oil producers and refiners. Also, companies have little or no control over downstream emissions, whereas they can exert influence over upstream suppliers.

The credibility of the Canadian green and transition finance taxonomy hinges on this ambitious and stringent climate objective. The taxonomy is designed to set the highest possible standard and provide a path that aligns with the global transition, and global capital markets that will facilitate the transition. Where there is ambiguity, the taxonomy should err on the side of maintaining this international credibility.

In addition to the principal climate mitigation objective, the taxonomy should seek to support the advancement of other objectives that are critical to Canada in the transition, including:

- **Economic:** improving the resilience and competitiveness of the Canadian economy in the global low-carbon transition;
- **Financial:** reducing transition risks in the financial system and mobilizing private sector capital to align with the global transition; and
- **Social:** smoothing the transition for workers and their families, communities and Indigenous Peoples.

In many cases, achieving success on the taxonomy's climate objective can simultaneously drive progress on these other, secondary objectives. For example, a taxonomy with stringent emissions intensity thresholds can help mobilize capital to decarbonize existing sources of economic growth, such as emissions-intensive manufacturing. Such investments can improve the competitiveness of the Canadian economy in the global low-carbon transition, reduce transition risk for the financial sector, and also help smooth the transition for workers by maintaining employment opportunities. A taxonomy that helps mobilize capital toward new sources of growth (e.g., clean hydrogen, agtech and alternative proteins, batteries and storage) can achieve similar benefits.

In addition to these primary and secondary objectives, consideration was given as to whether energy security and affordability should be explicitly integrated into the taxonomy. Although these are important objectives, it was decided not to recommend their integration since the taxonomy would be unable to treat them appropriately given their broad scope and complexity. There is also risk that the trade-offs that would be introduced among these objectives would reduce the clarity and information value of the taxonomy, which is fundamentally about advancing climate objectives in a science-based manner. There also does not appear to be a global taxonomy precedent for such integration. Ultimately, the taxonomy cannot successfully incorporate all critical energy transition issues, and its use should not prevent the development and utilization of different tools to consider other objectives.

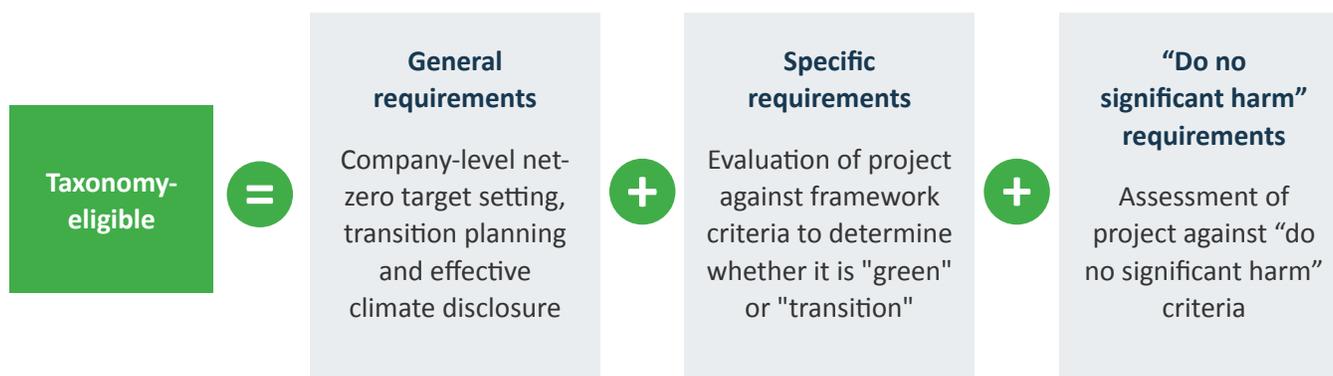
Recommendation 5



We recommend that the taxonomy's principal objective be to support the achievement of Canada's emissions reduction targets, consistent with keeping global temperature rise to below 1.5 °C (based on pre-industrial levels) across all emissions categories. Grounding the taxonomy with this ambitious climate objective can build and maintain international credibility and also help drive progress on other important economic, financial and social objectives.

Issuance Requirements

Issuing companies must meet three categories of requirements to issue green and transition financial instruments under the taxonomy:



1) General Requirements

Each issuing company must comply with general requirements related to company-level net-zero target setting, transition planning and climate disclosure. These requirements are meant to ensure that the project financed under the taxonomy is being undertaken to support credible, science-based transition plans, rather than in an ad hoc, incremental manner.

Under the taxonomy, issuing companies are required to:

- ✓ set a credible and science-based, net-zero emissions target for 2050 or earlier and an interim target for 2030 on the path toward net zero (and preferably with one or more additional interim targets between 2030 and 2050);
- ✓ develop a preliminary net-zero transition plan within 12 months of the issuance and a comprehensive, science-based net-zero transition plan within 24 months thereof;
- ✓ report publicly on progress annually and review and update plans every five years; and
- ✓ prepare climate disclosures and make them public, based, in the near term, on the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) and then in compliance with emerging domestic regulatory requirements and international standards.

As the subject matter of some of these requirements is evolving rapidly, it is important that, prior to the finalization of this category of requirements, they are reviewed and updated by the Taxonomy Custodian to reflect any best-practice developments arising from the work presently underway in this area. In this regard, noteworthy initiatives include the following:

- The Office of the Superintendent of Financial Institutions (OSFI) has issued a draft of *Guideline B-15: Climate Risk Management*, which sets out its supervisory expectations for federally regulated financial institutions in relation to climate-related governance, risk management practices, disclosure requirements and net-zero transition plans.
- The Canadian Securities Administrators (CSA) is developing a national climate-related disclosure rule for public companies; it recently published guidance for investment funds on climate and other ESG disclosure practices.

- The Government of Canada launched the Net-Zero Challenge in August 2022. Businesses that join the Challenge must commit to developing and implementing credible and effective plans to transition their facilities and operations to net-zero emissions by 2050.²⁶ Financial institutions that have joined GFANZ are able to join the Net-Zero Challenge through an accelerated process.
- The ISSB was established at COP26 in November 2021 to develop and maintain global sustainability reporting standards. As a first priority, it is developing standards for the disclosure of general sustainability matters as well as climate change. In response to these developments, the Canadian accounting, auditing and assurance oversight councils announced the establishment of the Canadian Sustainability Standards Board (CSSB), which will become operational by April 2023.²⁷ The CSSB will be responsible for reviewing and recognizing future ISSB standards for application in Canada.
- GFANZ is preparing recommendations and guidance for financial institutions on net-zero transition plans (See Box 1 presented earlier in the Report).

The Taxonomy Custodian should develop guidance on the technical aspects of the general issuance requirements that ultimately are not prescribed by regulators, but are nevertheless critical to the integrity of the taxonomy framework and voluntary issuance process. This could include, for example, providing greater specificity on what terms like “comprehensive”, “credible” and “science-based” mean in the context of transition plans and net-zero commitments. It may also elaborate on the application of the general requirements in the context of smaller issuers. The guidance should be informed by domestic and international best practices, including the established global process guidelines for issuing climate-related financial instruments, which reference the use of external party and independent technical reviews for issuance verification purposes.

Recommendation 6



We recommend that companies issuing green or transition financial instruments under the taxonomy be assessed against general requirements related to company-level net-zero target setting, transition planning and climate disclosure. These would be aligned with emerging domestic regulatory requirements and international standards and best practices.

2) Specific Issuance Requirements

The issuing company must determine whether the project meets the “green” or “transition” eligibility criteria under the taxonomy, or is ineligible. To do so, Figure 2 introduces a categorization framework to evaluate and determine the eligibility of projects. The questions in this categorization framework focus on a project’s absolute greenhouse gas emissions. The framework evaluates the materiality of a project’s scope 1, 2 and 3 emissions, where “materiality” is based on representative pathways in a 1.5 °C scenario (see Box 4).

²⁶ The core requirements for companies to join the Net-Zero Challenge are to: develop a preliminary net-zero plan within 12 months of joining the initiative and, subsequently, a comprehensive plan within 24 months thereof; set at least two interim emission-reduction targets consistent with achieving net zero by 2050 or earlier; and report on progress annually and review and update the net-zero plan at least once every five years.

²⁷ See the [news release](#) titled, “Accounting, Audit, and Assurance Standards Oversight Councils announce Canadian Sustainability Standards Board.”

Box 4: Determining the materiality of greenhouse gas emissions for individual projects

While the concept of materiality is well-grounded in financial and capital markets, determining the specific thresholds for material scope 1, 2 and 3 emissions are challenging. Materiality also has important implications for determining whether a project is categorized as “green” or “transition”. In some cases, the question of materiality is clear. A new green hydrogen project, for example, could have low or zero scope 1 and 2 emissions and would have limited or no scope 3 emissions. Other projects, however, may not be so clear. For example, if a new blue hydrogen facility can capture and sequester 90 per cent of its emissions, are the remaining 10 per cent considered material?

Detailed and transparent materiality criteria will need to be set to categorize activities. This process could, for example, be informed by emerging best practices in climate-related disclosures, which are based on scope 1, 2 and 3 emissions. It could also use scenario analysis to assess general categories of activities or sectors in 1.5 °C pathways, similar to the approach in the Canadian Climate Institute’s 2021 report, entitled [Sink or Swim](#). In these scenarios, it is clear that steel, aluminum and cement manufacturers face significant scope 1 and 2 emissions, whereas oil and gas producers and refiners face significant downstream scope 3 emissions.

Transition-eligible projects

Starting at the top of the categorization framework in [Figure 2](#), the first question for a project is whether it faces or enables **demand-side risk** in representative 1.5 °C pathways (step #1). That is, it evaluates whether the project sells into or depends on markets that are expected to contract over time in the global transition due to decreasing demand.

Effectively, this question relates to the materiality of a project’s downstream scope 3 emissions. Under a global transition, demand for products that produce significant emissions when consumed or used will decrease. These scope 3 emissions are particularly important for evaluating the transition risk of particular assets or financial products because they are emissions that individual projects and producers cannot control or address. As demand shifts toward lower-carbon options—whether due to policy, technology or consumer preferences—downstream scope 3 emissions become a significant source of transition risk and therefore need to be treated separately in the taxonomy framework.

While most fossil fuel-related projects would answer “yes” to this first question due to significant downstream emissions from the use of their products, it could include other activities, such as traditional automotive manufacturing, where demand is expected to decline significantly for these products in the transition. It could also include peat mining, which can release large quantities of stored CO₂ in end-use applications (e.g., horticulture, electricity generation).

Other types of projects may answer “yes” to this question that may be less intuitive. Building new natural gas distribution infrastructure, for example, could enable demand-side risk by locking in the consumption of natural gas for space heating and cooking and, as a result, increase the risk of the asset becoming stranded in the future. It is worth noting, however, that if future advancements in technology provide pathways to mitigate or eliminate scope 3 emissions from the combustion of fossil fuels, projects would no longer answer “yes” to this first question in the taxonomy framework.

For projects that face demand-side risk, the next question (step #2 in Figure 2) reflects **demand-side risk time horizons** (in a representative 1.5 °C pathway). The timing of when global demand decreases in the transition will be different for different products, which affects the relative transition risk associated with the investment. A commodity with widely available lower-carbon substitutes, such as thermal coal, faces material demand-side risk today in a net-zero pathway: it must be phased out immediately to stay on a 1.5 °C pathway and is therefore ineligible under the taxonomy.

New oil and natural gas extraction projects are also expected to be ineligible because they embody significant demand-side risk that materializes in the short term under a net-zero pathway. New extraction projects are capital intensive (especially in Canada), often with multi-decade payback periods. And, given that global demand for oil and gas must start declining in the 2020s under a 1.5 °C pathway, new oil and gas projects appear inconsistent with the transition under current climate scenarios.

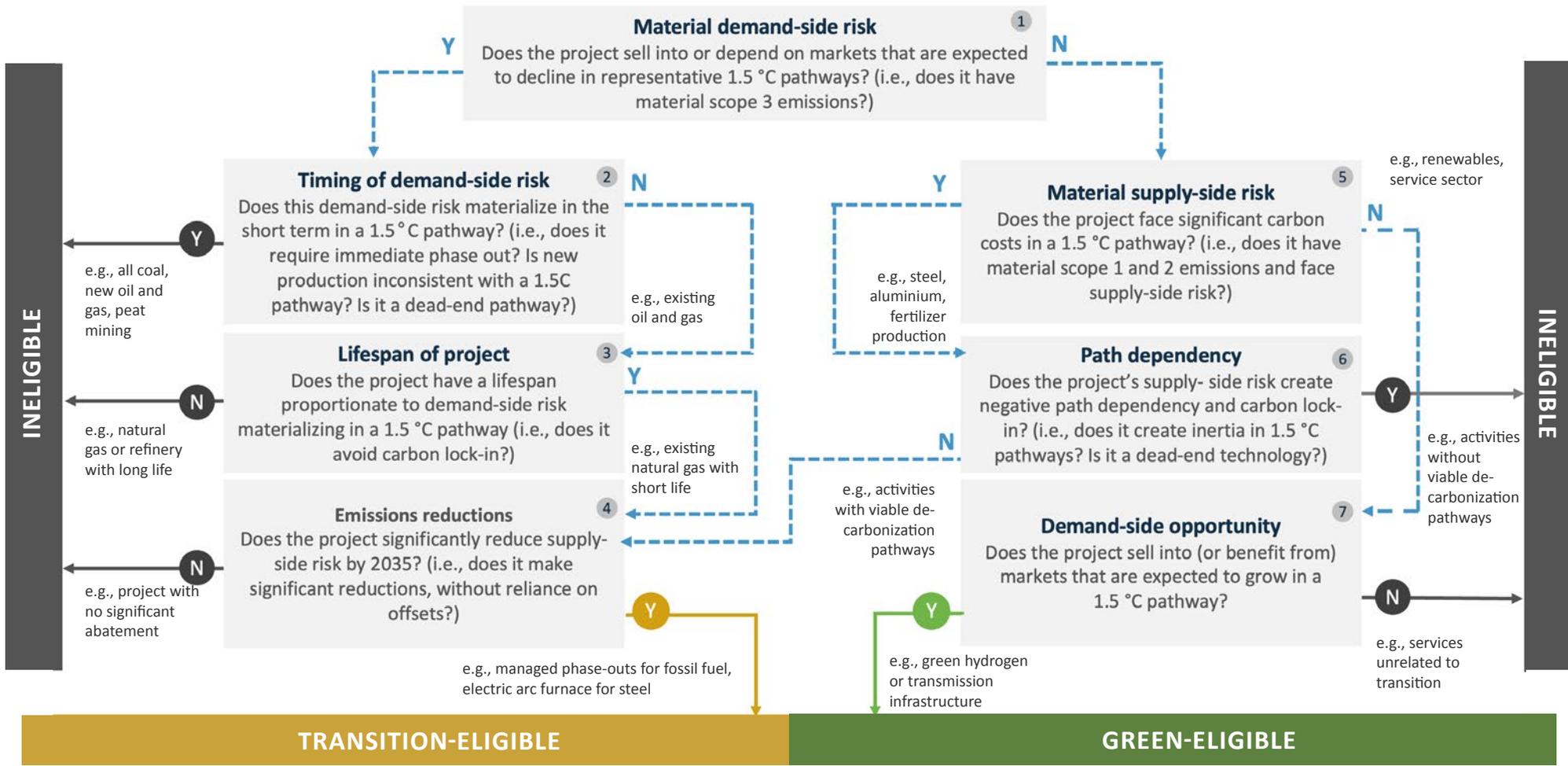
By contrast, existing oil and gas projects are not necessarily ineligible at this stage in the categorization framework, and the pathways forward for oil and gas must be assessed separately. Global demand for oil and gas will exist for several decades—even in representative 1.5 °C pathways—raising the importance of decarbonizing existing production. Reducing emissions from oil and gas production is critical for Canada to achieve its own emissions targets. As such, the taxonomy should reward projects that deploy Canadian and international technologies to reduce scope 1 and 2 emissions, even in sectors that face demand-side risk in the medium term. Box 5 provides a definition of “new” and “existing” oil and gas projects.

For projects facing demand-side risk, but where this risk does not materialize immediately, the next question (step #3 in Figure 2) is focused on the **project lifespan** and whether it is proportionate to when global demand for the specific product is expected to decline in representative 1.5 °C degree pathways. The rationale behind this question is to reduce the probability that projects end up locking in significant carbon emissions or become stranded in the future.

Generally, projects that have scope 3 emissions risk and shorter lifespans reflect a lower degree of transition risk and remain in the framework. The early retirement or phase out of high-emitting assets could also be included as an eligible activity if it aligns with net-zero pathways for the sector, which would be consistent with GFANZ’s Proposed Recommendations and Guidance on Financial Institution Net-Zero Transition Plans (see Box 1).

(It is worth noting that to make a project eligible for taxonomy financing, the taxonomy would require assurances from the issuer that the project will, in fact, be decommissioned by a specific date.)

Figure 2: Categorization Framework for Determining Whether a Project Is Green- or Transition-Eligible under the Taxonomy



Box 5: Defining eligible and ineligible oil and gas activities in the taxonomy

Designing a practical and credible taxonomy for Canada requires drawing boundaries around the types of activities that are consistent with 1.5 °C emissions pathways. These boundaries are important for oil and gas activities given their emissions profile, and they need to be analyzed separately, but calibrating them appropriately is a complex undertaking that will require significant technical work and industry engagement in future implementation phases.

In terms of considerations, declining global demand will take time, and investments to decarbonize oil and gas production are needed to reduce cumulative global emissions and help Canada achieve its emissions targets. The taxonomy should therefore be designed to help mobilize capital toward projects that deploy Canadian and international technologies to reduce scope 1 and 2 emissions. Against this, increasing investment in oil and gas production may carry risk. Fossil fuels produce downstream scope 3 (combustion) emissions even if upstream emissions are reduced. Increasing production from current levels may make requisite emissions reductions more difficult.

Recognizing these complexities, the taxonomy should differentiate between *existing* and *new* oil and gas extraction projects when assessing eligibility. Existing oil and gas production projects are potentially eligible but must meet a set of criteria. Existing projects include already-producing oil and gas fields and under-development fields that have received a final investment decision. It includes, for example, activities where production licences within the defined boundaries of the geological reservoir have been granted, and where significant capital expenditures have been allocated.

To be categorized as transition, existing oil and gas projects would need to demonstrate improvements to their emissions intensity by 2030. Eligible projects would therefore need to demonstrate that current and future capital expenditures put them on a track to reduce their emissions intensity such that it complies with the 2030 threshold established via net-zero modeling. Eligible projects would also need to have lifespans that are proportionate to global demand scenarios in representative 1.5 °C pathways (recognizing that the runway for gas is likely longer than for oil). Existing oil and gas extraction projects would also need to demonstrate that making the new investment to reduce emissions will not *increase* the lifespan of their operations.

Finally, new oil and gas extraction projects are expected to be ineligible under the taxonomy based on current climate scenarios reflecting 1.5 °C transition pathways. These projects involve the exploration and development of oil fields (a geographical area overlying an oil and gas pool) currently not producing or not already in development. It encompasses those exploration and development projects that, as of a prescribed date (e.g., 2023), have not received a final investment decision or government licence (or tenure), and where limited capital expenditures have been allocated.²⁸ Ultimately, precise definitions, criteria and thresholds for the types of oil and gas projects that qualify as transition under scenarios consistent with limiting global warming to 1.5 °C will need to be developed reflecting the latest technical knowledge and modeling, starting in Phase 1 of the taxonomy development process (see Section 3).

²⁸ This definition is based largely on the International Energy Agency's treatment of oil and gas described in its 2021 report [Net Zero by 2050: A Roadmap for the Global Energy Sector](#), where the cancellation of new licences is used as a mechanism for ending new oil and gas extraction (see, for example, the [Danish approach](#)).

If a project with material demand-side risk has a lifespan that is proportionate to when global demand for the product declines, the next question (step #4 in Figure 2) is about whether the project **significantly reduces its scope 1 and 2 emissions**. The rationale behind this question is fundamental to the purpose and credibility of the taxonomy: rewarding only those projects that are consistent with domestic and global emissions pathways to net zero by mid-century and excluding those that are not. Significant emissions reductions can also make these assets more competitive in the global low-carbon transition by reducing its carbon costs (i.e., reducing the price paid on its emissions).

For this emissions reduction criterion, the project must demonstrate an emissions intensity that is consistent with net-zero pathways by 2030. Meeting this future time horizon is critical to ensuring the taxonomy rewards activities that not only show emissions reductions today, but that make a significant contribution on the path to net zero. These emissions reductions must also come from mitigation or abatement from within the boundaries of the project itself and cannot rely on purchasing offsets (see Box 6).

While the specific emissions-intensity thresholds for projects still need to be developed, they should be based on sectoral pathways consistent with achieving the global 1.5 °C target. The Transition Pathway Initiative, for example, already provides this type of analysis and could inform threshold development for Canada's taxonomy. Emissions thresholds could also be informed by Canada's Emissions Reduction Plan, which was released earlier in 2022.

It is also necessary to use a regional lens when determining these thresholds and operationalizing the concept of 'economic and technical viability', with particular consideration for northern Indigenous communities and Nations. Economically and technically viable pathways for Canada's south may not be viable in Canada's North, which could make it difficult (or impossible in some cases) for projects in the North to achieve the same emissions thresholds for projects in the south. Early on in the process, the Custodian will need to conduct more research, analysis and engagement with Indigenous rightsholders as it operationalizes these key concepts and develops emissions thresholds to ensure they reflect Canada's important regional differences.

Box 6: Why carbon offsets are ineligible under the taxonomy framework

While carbon offsets are expected to play a major role in achieving global climate targets, projects in the taxonomy are not permitted to rely on carbon offsets to comply with emissions-intensity thresholds. The purpose of the taxonomy is to encourage investments that directly reduce emissions. Directly abating or reducing emissions within the boundaries of a project (e.g., improving energy efficiency, fuel switching, carbon capture, utilization and storage) reduces its transition risk.

By contrast, allowing projects to purchase carbon offsets that occur elsewhere in the economy weakens the incentive to make the transformative investments necessary to align operations with the global transition. If these offsets were suddenly unavailable, or proven to have questionable credibility, it could expose the project to significant transition risk: undoing the initial offset could expose the project's emissions to a carbon price (likely at a higher cost than the offset).

As the taxonomy framework develops, criteria will need to be further developed and refined around this limitation. Drawing the boundaries around projects is particularly important. A project may, for example, rely on a third party to manage the carbon capture, utilization and storage portion of its operation to reduce its scope 1 emissions. The taxonomy would need clear guidelines for these types of projects, ensuring that the project proponent receiving taxonomy-approved financing is held accountable for those emissions reductions.

Projects that do not face or enable material demand-side risk (i.e., those that do not have material downstream scope 3 emissions) face a different set of questions in the categorization framework in Figure 2.

The first question for these projects (step #5 in Figure 2) is whether they have material scope 1 and 2 emissions and, as a result, face supply-side risk. As identified in the [Canadian Climate Institute's 2021 Sink or Swim report](#), these include emissions-intensive activities that become increasingly exposed to rising prices on carbon—a necessary reality if the world is to achieve its climate targets. Over time, increasing carbon costs put upward pressure on production or supply costs for emissions-intensive producers—especially those with higher-emitting operations (among peers)—and become a dominant source of transition risk.

This category of activities includes, for example, many emissions-intensive activities and sectors, such as manufacturers of iron and steel, cement, aluminum, chemicals or the airline sector. It could also include projects that use natural gas-fired electricity to replace higher-emitting coal-fired electricity generation, but only when accompanied by stringent emissions thresholds that would require the addition of carbon capture, utilization and storage technologies. This approach has received significant attention due to the recent changes to the EU sustainable finance (green) taxonomy, which has made these types of replacement activities eligible for its green classification (see Box 7).

Box 7: The EU decision to include natural gas and nuclear in its sustainable finance (green) taxonomy

Each activity within the EU taxonomy has technical screening criteria to determine whether it is making a substantial contribution to an environmental objective and doing no significant harm to other objectives. The EU's *Taxonomy Complementary Climate Delegated Act*, which will apply in 2023, introduces screening criteria for the construction and operation of nuclear energy facilities and facilities using fossil (natural) gas.

Making these activities eligible in the EU taxonomy has sparked significant debate over whether using nuclear power and natural gas can be consistent with global climate (and other environmental) goals. It also raises important considerations for how these activities could be treated in a Canadian taxonomy. Below are some key considerations for Canada moving forward.

First, it is important to highlight that the new screening criteria for natural gas do not apply or cover upstream extraction and production (these activities are not included in the EU taxonomy). Eligible natural gas projects must be electricity generation facilities or heat generation facilities that either co-generate power or are connected to efficient district heating and cooling systems.

Second, the thresholds set by the EU criteria are stringent relative to existing emissions intensities at existing EU facilities. To be green-eligible, all power generation facilities (including nuclear and natural gas) must have lifecycle emissions below 100g CO₂e/kWh (carbon dioxide equivalent per kilowatt hour). The emissions intensity threshold for natural gas facilities permitted before 2030 are less stringent (set at 270g CO₂e/kWh) but must satisfy other criteria. For example, these facilities must be replacing a high-emitting fossil fuel-powered facility where no renewable alternatives are feasible and must not significantly increase total production capacity. They must also make a full switch to renewable or low-carbon fuel by 2036.

For perspective, the EU-wide emissions intensity for natural gas-powered electricity is estimated at 370g CO₂eq/kWh, well above the screening thresholds ([Ember, 2022](#)). Both natural gas-fired electricity and nuclear power projects would also need to satisfy the "do no significant harm" criteria to remain eligible under the taxonomy.

Finally, whereas the EU taxonomy only covers green activities, the proposed taxonomy framework for Canada covers both green and transition activities, which could help allay some of the concerns surfaced in the EU. Under this proposed framework for Canada, natural gas-fired electricity projects would be considered to have material scope 1 and 2 emissions (and therefore face high carbon costs in the future) and would therefore need to demonstrate significant emissions reductions to be categorized as transition-eligible. In these cases, the Custodian of the Canadian taxonomy could consider adopting thresholds developed by the EU, and evaluate whether they are stringent enough to comply with Canadian net-zero pathways.

The Canada-wide emissions intensity of natural gas-fired electricity was 489g CO₂eq/kWh in 2020, which is significantly higher than the EU screening criteria ([ECCC, 2022](#)). Nuclear power, on the other hand, could be categorized as green in the proposed taxonomy framework for Canada. Globally, nuclear power has a median lifecycle emissions intensity of 12g CO₂eq/kWh ([Schlömer et al, 2014](#)). These projects would also need to satisfy the "do no significant harm" criteria.

The next question for projects with material scope 1 and 2 emissions (step #6 in Figure 2) is about preventing **pathway dependency**. Some projects and activities with supply-side risk may, in fact, create carbon lock-in and path dependency that are inconsistent with representative 1.5 °C pathways. This could include, for example, the construction of a first-generation biofuels facility producing corn or wheat-based ethanol. Scaling up these types of conventional biofuels is constrained by relatively low blending limits in the existing gasoline-powered vehicle fleet and, indirectly, could create inertia in the shift toward electric- or hydrogen-powered vehicles.²⁹ Projects with long lifespans can also create path dependency and carbon lock-in, particularly in heavy industrial sectors whose facilities can operate for several decades.

For supply-side risk projects that do not create path dependency, the next question is whether they make significant **emission reductions** (step #4 in Figure 2). This could include, for example: a steel manufacturing facility investing in an electric arc furnace that significantly reduces its scope 1 and 2 emissions; building a new line of aircraft that uses clean hydrogen to significantly reduce its combustion emissions (which, for the airline, are counted as its scope 1 emissions); a pulp and paper producer that converts to using biomass for its energy needs; or a cement manufacturer installing carbon capture and storage to significantly reduce its process emissions. Whatever it is, if the project can demonstrate significant emissions reductions (consistent with a net-zero path by 2030), it would be categorized as transition-eligible.

29 While more advanced biofuels could be eligible under the taxonomy (e.g., drop-in biofuels for hard-to-abate sectors like aviation and heavy-duty trucking), new first-generation biofuel facilities whose primary use is in light-duty vehicles are expected to be ineligible.

In summary, there are two different ways projects can be categorized as transition-eligible. Projects that face or enable material **demand-side risk** must meet the following criteria:

- ✔ Demand-side risk that does not materialize in the short term and is a project that does not require immediate phase-out in representative 1.5 °C pathways;
- ✔ A lifespan that is proportionate to when its global demand is expected to decline in representative 1.5 °C pathways; and
- ✔ Significant emissions reductions, consistent with a 1.5 °C pathway by 2030.

By contrast, projects that have **supply-side risk** must meet a similar set of criteria:

- ✔ No negative path dependency or carbon lock-in; and
- ✔ Significant emissions reductions, consistent with a 1.5 °C pathway by 2030.

In both pathways to transition eligibility, the categorization framework is designed to filter out projects and activities that are inconsistent with 1.5 °C pathways. Part of this process is filtering out activities that do not make significant emissions reductions. But it is also about avoiding dead-end pathways. As noted by Canada's Net-Zero Advisory Body, some technologies and energy sources will make net-zero pathways more difficult by "locking in building infrastructure, systems, and technologies that will need to be replaced or retrofitted again."³⁰

Solid fossil fuels, peat mining and internal combustion engines are three examples of dead-end pathways that are automatically ineligible under the categorization framework. These are pathways that need to be phased out under a 1.5 °C pathway and where substitutes are both technically and economically viable. As the transition progresses, other dead-end pathways will emerge. The taxonomy framework will need to be updated accordingly.

Green-eligible projects

Projects that do not have material scope 1 and 2 emissions and that have low or zero downstream scope 3 emissions are automatically categorized as green under the framework. The only additional question for these low-emissions projects (step #7 in Figure 2) is whether they face or enable demand-side opportunity in representative 1.5 °C pathways. The *Sink or Swim* report shows that the push towards net zero will significantly increase global demand for some goods and services, representing new and growing market opportunities. The low-carbon transition is—and will continue to—directly increase demand for things like clean energy, clean or environmental technologies and alternative proteins. In other cases, goods and services may enable these activities, such as electricity transmission infrastructure or green engineering services.

Yet there are many economic activities that may have low or zero emissions but do not necessarily face opportunity in the transition. These would include, for example, a big portion of the service sector in the economy. While the taxonomy could be broadened to include these types of activities in the future, the rationale behind this question is to focus the taxonomy on activities with the greatest opportunity *because* of transition, or those projects and activities selling into growing markets.

In the initial stages of taxonomy development, issuers could assess the degree of market opportunity at a high level—recognizing that small and medium-sized issuers may have difficulty evaluating this particular criterion.

³⁰ See [Annex 3 of Canada's 2030 Emissions Reduction Plan](#), where the Net-Zero Advisory Body provides its overarching advice in relation to the line of inquiry on buildings.

The key markets and technologies listed in the *Sink or Swim* report, for example, could be used as a starting point, which have already been assessed for the Canadian context. Once the Custodian is established, it could provide more detailed analysis to support the evaluation of “market opportunity” that would make it easier for issuers to move through the framework. Similar to other aspects of the taxonomy, the Custodian could also update this regularly to reflect the evolving nature.

The breadth and scope of projects that would qualify as green are expected to increase significantly over time. The Canadian Climate Institute considered nine markets in its *Sink or Swim* report that are expected to grow in the global low-carbon transition, including low-carbon electricity, low-carbon transportation, agricultural technologies and alternative proteins, and clean hydrogen. These are markets where Canadian companies already have a foothold and are attracting investment, and where green eligibility under the taxonomy could help mobilize and track capital. Moreover, costs continue to fall for a range of low- or zero-carbon technologies, such as renewables, batteries and electrolyzers (for producing green hydrogen), which will accelerate their adoption and market growth in the future.

Green eligibility under the taxonomy could apply to low- or zero-emissions projects across the innovation chain, from early technology development to widescale commercialization. For example, there are a range of low-carbon technologies that are not yet commercially viable, but could provide material environmental and economic benefits on Canada’s pathway toward net zero. These include producing high-value chemicals from low-carbon feedstocks, such as methanol from municipal solid waste or ammonia from hydrogen with CCUS, or aviation biofuels from agricultural and wood waste. Depending on project specifications, these types of early-stage demonstration projects would be green-eligible.

It is also notable that the path for green eligibility includes projects that *enable* demand-side opportunity in the transition. These include projects and activities that may not experience demand-side opportunities directly, but rather provide the critical market infrastructure necessary to capture transition opportunities. The construction of a pea protein processing facility, for example, enables local farmers to shift their crops and grow more pea proteins. Another example is grid infrastructure that enables greater electrification.

Projects with low or zero (absolute) scope 1, 2 and 3 emissions that face significant demand-side opportunity in transition are green eligible under the taxonomy.

Recommendation 7



We recommend that the green and transition finance taxonomy embody the categorization framework introduced in this Report, where projects are determined to be taxonomy-eligible only if material scope 1, 2 and 3 emissions, excluding carbon offsets, are aligned with representative pathways in a 1.5 °C scenario. Projects that lead to significant increases in emissions and make it difficult to reduce emissions would be ineligible under the taxonomy.

3) “Do No Significant Harm” Requirements

The final step to evaluating the taxonomy eligibility involves assessing each project against a set of “do no significant harm” (DNSH) criteria, illustrated in Table 4. These are binary criteria: if a project violates any one of these criteria, it would be ineligible under the taxonomy. For example, a project that is categorized as green that also causes significant (non-climate) environmental damage would be ineligible. The DNSH terminology and concept, which was pioneered in the EU sustainable finance (green) taxonomy, is now a best practice and a common requirement of taxonomies globally.

These DNSH criteria are informed by the approach taken in the EU (see Box 8) but are adapted to meet the unique needs for Canada. A criterion to ensure projects meet minimum standards for respecting Indigenous rights and reconciliation was added to reflect the importance of this issue within the Canadian context. Another criterion was added to ensure projects do no harm to workers and communities (and align with just transition principles).

Additional development work will be needed to enrich the thresholds and minimum standards in Table 4, and to clearly define the significant harm concept so that it is used properly and not misinterpreted. Development work will also be needed to ensure that the DNSH criteria are consistent with applicable Canadian laws (e.g. environment, labour, Indigenous rights), and that they minimize duplication and additional work for issuers. The objective is to set requirements that are clearly defined and user-friendly, and which result in credible DNSH assessments.

Box 8: The EU’s “do no significant harm” criteria

The EU was the first jurisdiction to articulate and include a set of DNSH criteria directly into its taxonomy. To remain eligible for the EU taxonomy, a project must meet the minimum requirements for 1) climate change mitigation, 2) sustainable use and protection of water and marine resources, 3) pollution prevention and control, 4) climate change adaptation, 5) circular economy and 6) protection and restoration of biodiversity and ecosystems.

The DNSH requirements could build on international best practices, including those reflected in the EU’s sustainable finance taxonomy. Thresholds for workers and just transition could be informed by the work of the World Benchmarking Alliance as well as the International Labour Organization. In addition to the DNSH criteria, future consideration may be given to setting criteria that screen out projects that do not comply with minimum social safeguards, including in relation to international human and labour rights and anti-corruption and bribery. This could be informed by the EU approach, where projects must comply with major corporate social responsibility frameworks, including the UN Guiding Principles on Business and Human Rights and the OECD Guidelines on Multinational Enterprises.

Table 4: “Do No Significant Harm” Criteria

Objective	Rationale	Criteria
No significant harm to environmental outcomes	Some taxonomy activities may impose environmental (non-climate) damages or costs that must be minimized. This criterion amalgamates three categories from the EU taxonomy (sustainable use and protection of water and marine resources, pollution prevention and control, and protection and restoration of biodiversity and ecosystems).	Activity meets minimum requirements for water, biodiversity, pollution and waste impacts
No significant harm to climate resilience	Some taxonomy activities may be maladaptive or increase physical climate risk.	Activity incorporates best practices to reducing physical risk
No significant harm to Indigenous rights	Some taxonomy activities may infringe on the rights of Indigenous peoples, communities and nations.	Activity demonstrates adherence to the UN Declaration on the Rights of Indigenous Peoples
No significant harm to workers or just transition	Some taxonomy activities may result in unintended negative impacts to labour market transitions, including in the forms of job creation, training, investment in vulnerable communities and Indigenous equity participation.	Activity does not worsen employment outcomes for workers

Recommendation 8



We recommend that the eligibility requirements under the green and transition finance taxonomy include an assessment against “do no significant harm” criteria, which meet the unique needs of Canada, and are informed by the European Union’s Sustainable Finance Taxonomy, including, but not limited to, meeting minimum standards for respecting Indigenous rights and reconciliation as well as for supporting workers and communities in relation to just transition.

Spotlight: Taxonomy in Practice – Issuing Green and Transition Bonds and Loans

Illustrative Example 1: Issuing Green and Transition Bonds

Issuers seeking to bring to market green and/or transition bonds to fund taxonomy-eligible projects are likely to do so in accordance with established global process guidelines, including the Green Bond Principles and the Climate Transition Finance Handbook published by the International Capital Market Association (ICMA).³¹ According to ICMA, the vast majority of sustainability bond issuances globally refer to its principles and guidelines to support comprehensive and transparent disclosure practices.³²

Using these guidelines, issuers would generally initiate the formal issuance process by developing and publishing a green and/or transition bond framework. This framework would explain to investors how prospective bond issuances will support the issuer's financing objectives and sustainability strategy, as well as comply with the taxonomy and the broader informational requirements set out in global process guidelines. Taken together, the framework would disclose the following types of information:

- ✓ Identification of the categories of green and/or transition projects eligible for funding with the bond proceeds as well as the corresponding screening criteria based on the taxonomy's specific and DNSH requirements;
- ✓ Description of the governance and management of the issuance process, including the evaluation and selection of eligible projects, the DNSH assessment methodology, the review of framework-related reports and disclosures and the monitoring of issuances and evolving market practices; and
- ✓ Details on the procedures to ensure that proceeds are only used for eligible projects, as well as an explanation of the frequency, nature and scope of reporting on the use of proceeds and associated environmental impact.

The framework would typically be subject to an external review, resulting in a second-party opinion on the framework's alignment with the ICMA Green Bond Principles and the taxonomy. In keeping with the Climate Transition Finance Handbook, issuers may also obtain an independent technical review of their transition plans, including in relation to the climate targets, de-carbonization pathways and the environmental materiality of the business models.

Following publication, issuers would then bring the green and/or transition bonds to market. Issuers would generally begin to publish reports on how proceeds have been used as well as the associated environmental impact within one year of issuance, and then on an annual basis thereafter. An external auditor would normally be used to verify that the proceeds are being allocated to eligible green and/or transition projects.

Throughout the issuance process, issuers would need to comply with provincial securities laws in respect of the distribution of financial instruments, including registration, disclosure and record-keeping requirements, among others. Provincial securities regulators are responsible for administering these laws, which include monitoring compliance and undertaking enforcement action in the event of misconduct (e.g., misleading disclosure, fraudulent claims). Investors also have civil remedies available to pursue damages for misrepresentation in connection with issuances on primary and secondary markets.

³¹ These publications are available on the ICMA's [website](#) alongside process guidelines for issuing sustainability-linked bonds and other types of sustainability bonds.

³² ICMA [reported](#) that, in 2020, 97 per cent of sustainability bonds globally were based on its process guidelines.

Illustrative Example 2: Issuing Corporate Green and Transition Loans

Similar to green and transition bonds, corporate borrowers seeking green and/or transition loans to fund taxonomy-eligible projects are likely to do so in accordance with the established global process guidelines, including the Green Loan Principles published by the Loan Market Association (LMA), Asia Pacific Loan Market Association (APLMA) and the Loan Syndications and Trading Association (LSTA).³³

Borrowers would typically begin the loan origination process by preparing a green and/or transition loan framework, which will contain many of the same elements as its bond counterpart discussed above. As the loan market is frequently relationship driven, a borrower would often work closely with their established lenders to develop this framework. Reflecting the borrower's financing objectives and sustainability strategy, the framework would identify the categories of green and/or transition projects that would be eligible for loan financing as well as the corresponding screening criteria based on the taxonomy's specific and DNSH requirements. It would explain the internal governance process to evaluate and select eligible projects; the systems to monitor and track the loan proceeds; and the frequency of reporting to lenders on how the loan proceeds have been allocated.

The borrower may choose to publicly release the framework or limit its distribution to prospective lenders only. The framework may be standalone or integrated as part of a larger framework that covers a number of green and/or transition financial instruments. Borrowers may have some or all aspects of the framework reviewed by an external party (e.g., second-party opinion), but this may not always be undertaken, especially in instances where lenders are satisfied that borrowers have adequate internal expertise to self-certify the veracity of their proposed frameworks.

Following its adoption, the framework would be integrated into the formal green and/or transition loan (contractual) agreements between the borrowers and lenders. Although there is no market standard for the content of green and/or transition loan agreements, the Green Loan Principles guidance indicates that these agreements should clearly set out the eligible green/transition project categories in the use of loan proceeds provisions; provide the information undertakings/covenants relevant to the green/transition projects; and establish a legal obligation on the borrower to accurately report on the use of loan proceeds. The agreement should also clearly set out the consequences of a breach of the use of loan proceeds provisions, including whether it would trigger a default or simply result in a re-categorization of the loan (e.g., from green to non-labelled loan).

³³ The Green Loan Principles as well as the principles and guidance for issuing sustainability-linked loans are available [here](#).

Priority for Future Development: Evaluating the Relative Transition Opportunity and Risk of Green and Transition Projects

Issuing companies are required to use the categorization framework discussed previously as part of the requirements to evaluate whether projects are either green or transition under the taxonomy. Yet not all green and transition projects are equal in terms of transition performance, and the categorization framework does not capture the important nuances that exist, in terms of relative transition opportunity and risk, of the projects that fall within the broad categories of green and transition.

For example, an aluminum manufacturer investing to electrify its operations to dramatically lower its scope 1 and 2 emissions faces different transition opportunity (and risk) than an existing oilsands facility investing in carbon capture, utilization and storage (CCUS). The oil producer is exposed to demand-side risk that the aluminium manufacturer is not. Global demand for low-carbon aluminum is expected to grow in transition and see increased opportunity, while demand for fossil fuels is expected to decline.

The Taxonomy initiative should consider developing a methodology and criteria so that issuances in connection with green and transition projects can be classified in a differentiated matter, according to their relative transition opportunity and risk. Investors would be able to more readily consider the specific areas of transition opportunity and risk of different issuances in their investment decision-making. It would promote the credibility of the taxonomy by allowing stakeholders to understand and differentiate across the full range of transition-eligible projects and activities and how that range may change over time in the face of regular reviews and more stringent criteria. Lastly, this type of approach would align with advice from Canada's Expert Panel on Sustainable Finance, which recommended that Canada's taxonomy should be granular enough to avoid ambiguity.

The discussion below sets out proposed foundational criteria for evaluating and differentiating green and transition projects. Annex 2 introduces a scoring system to be used in conjunction with the criteria to score and classify green and transition projects, supplemented by a series of hypothetical project examples for illustrative purposes. The proposed criteria and methodologies are meant to provide the Custodian with a running start, as a possible future development priority. In addition to methodological matters, an appropriate administering body would have to be identified to apply the criteria and issue scores to issuances (e.g., ESG rating agencies, standard-setting body).

Evaluating Green-Eligible Activities

Table 5 illustrates a set of proposed criteria to evaluate the transition risks and opportunities of green projects. The first criterion in the table is focused on a project's relative emissions intensity. The thresholds for this criterion could be based on those already developed by the EU, which uses an emissions-intensity threshold based on lifecycle emissions (scopes 1, 2, 3). Using these thresholds, projects could be evaluated on whether there are no or negative emissions, or whether they are above, meet or below the sector or product average. The threshold for green hydrogen projects, for example, could use the EU's emissions threshold of 3 tonnes of carbon dioxide or equivalent per tonne of hydrogen produced ($3\text{tCO}_2\text{e/tH}_2$). Projects could be benchmarked against this threshold.

The second criterion evaluates the relative market opportunity associated with the project (and the goods or services it sells). The rationale behind this criterion is that different types of projects and activities face different opportunities. Cases where the expected market is small or highly uncertain reflect a higher degree of risk (or smaller opportunity) than those where the market opportunity is both large and certain in transition. The availability of technically and economically viable substitutes is a key consideration: projects selling into a large market with few competing viable alternatives have greater opportunity.

Table 5: Criteria and Measures for Green-Eligible Projects

Objective	Criteria	Rationale	Possible Measure
Reduce relative GHG emissions (lifecycle emissions)	Emissions intensity relative to sector/product average	Activities with lower or best-in-class emissions reflect higher transition opportunity (based largely on EU thresholds).	<ul style="list-style-type: none"> • No or negative emissions • Below sector/product average • Meets sector/product average • Above sector/product average
Support activities with higher market opportunity in transition	Size of value chain by 2050 in 1.5 °C pathway	Some activities have larger market demand in transition than others. Those expected to have larger markets in 2050 reflect higher transition opportunity. Larger market opportunity also implies higher scalability of technology and ability to gain/keep market share (breakeven cost).	<ul style="list-style-type: none"> • Large value chain by 2050 • Moderate value chain by 2050 • Small or nonexistent value chain by 2050
Sequestration projects only			
Create permanent emissions reductions	Extent to which sequestered emissions may be re-emitted into the air	Some activities provide higher certainty around the permanence of emissions reductions, reflecting higher transition opportunity.	<ul style="list-style-type: none"> • High certainty of permanence • Moderate certainty • Low certainty

The market opportunity for light-duty electric vehicles (EVs), for example, is significant and converging rapidly. Other types of low-carbon technologies exist for light-duty vehicles, such as hydrogen-based fuel cells, but market forecasters expect that EVs will be the dominant technology.

By contrast, the future market for clean hydrogen is expected to be large, but with a greater range of uncertainty. The market could be worth between \$2.5 trillion and \$12 trillion by 2050, depending on adoption rates across multiple sectors (i.e., some sectors have more viable substitutes to clean hydrogen than others, but there are still a few sectors where clean hydrogen looks like it could become the dominant technology). The market for some critical minerals is even less certain and depends on what type of battery/storage technology ultimately wins market share in the coming decades, so the market for these types of projects would embody less opportunity.

Although measuring the relative market opportunity of a particular good or service raises important challenges (see Box 9), doing so can provide useful information on the relative size of transition opportunity and risk. Thresholds, for example, could be based on the expected size of value chains under different net-zero pathways along with the relative range of estimates. Ultimately, clear and consistent thresholds for this criterion would need to be set, which would require periodic updates based on new technological developments and adjustments to representative pathways.

Box 9: Challenges with defining “the market” for projects

Drawing the boundaries around “the market” for a particular project can be challenging and has significant implications for its relative transition opportunity and risk. Consider, for example, the market for a new facility that produces small modular nuclear reactors (SMRs). On the one hand, the market for SMRs may be relatively small if we consider the availability of cheaper and more cost-effective alternatives to generating electricity, such as renewables (with or without storage technology). If, however, the market for SMRs is defined more broadly—as the entire market for clean electricity, regardless of how it is generated—then it looks much larger.

Setting the boundary around the market also raises important geographical questions. Some goods and services are very tradeable, such as new smart grid software that can be adopted anywhere in the world. The potential market for these types of products (and projects) is large. Whereas other markets, such as generating and distributing clean electricity, are more geographically bounded.

Evaluating and ranking the relative opportunity and risk associated with market size may also have implications for technologies that generate significant benefits but only for a small population. Technologies that provide clean and reliable energy to rural, remote and Indigenous communities, for example, could generate important local benefits but yet the technology could be perceived as having a small market if it does not have wider applications. These types of instances require further research as the criteria and measures are developed.

The last criterion for green projects would only be applicable to those that sequester emissions. This criterion would apply to nature-based solutions, for example, such as afforestation projects or wetland restoration. Nature-based solutions should, by definition, offer negative emissions, which means that the first criterion (emissions intensity) would not apply to these projects. This helps ensure that nature-based solutions would not be disadvantaged in the framework relative to other types of green projects.

The rationale behind this criterion is that not all sequestered emissions are the same: some may have a higher degree of permanence than others. An afforestation project planted in an area with a high risk of wildfires, for example, faces a higher likelihood that some of those sequestered emissions get re-emitted into the atmosphere. The more assurances a sequestration project has (e.g., insurance against wildfire risk or development prohibitions to protect against future encroachment), the lower the transition risk (and higher the opportunity). The thresholds for this criterion should ultimately align with established offset standards.

Evaluating Transition-Eligible Activities

The criteria for transition activities should build on the green criteria (see Table 6), starting with evaluating a project’s emissions intensity in the current year. The emissions intensity for each project would be compared against a sector or product average that is based on representative net-zero pathways.³⁴

³⁴ The development of the criteria should be grounded in climate science, while being mindful of level playing field and interoperability considerations with U.S. capital markets and consistency with U.S. climate policy at federal and state levels.

But whereas the criterion for green activities uses lifecycle emissions as the primary threshold, the thresholds for transition activities are based on scope 1 and 2 emissions only. The reason for this slightly different approach is twofold. First, scope 3 emissions have already been accounted for in the categorization framework; that is, some transition projects are categorized as ‘transition’ precisely because of the higher climate risk associated with material scope 3 emissions. Second, the green category is intended to set the gold standard for projects and therefore accounts for the whole lifecycle of a project’s emissions.³⁵ Transition projects face a slightly lower standard, yet must still make significant reductions in scope 1 and 2 emissions.

Transition projects would also have to demonstrate improvements in their emissions intensity over time. The rationale is that transition projects—by definition in the categorization framework in step #1—represent larger sources of absolute emissions and need to make significant reductions if they are to remain consistent with net-zero pathways.

Table 6: Criteria and Measures for Transition-Eligible Projects

Objective	Criteria	Rationale	Possible Measure
Reduce relative GHG emissions (scope 1 and 2)	Emissions intensity relative to sector/product average (today)	Activities with lower emissions reflect higher transition opportunity. Activities are assessed against their consistency with the Emissions Reduction Plan.	<ul style="list-style-type: none"> • Below sector/product average • Meets sector/product average • Above sector/product average
	Emissions intensity relative to sector/product average in 2030 (based on net-zero pathways)	Activities must demonstrate lower scope 1 and 2 emissions over time to achieve sectoral/product targets. Those that can demonstrate lower future emissions reflect higher transition opportunity (and less risk).	<ul style="list-style-type: none"> • Well below 2030 sector/product average • Below 2030 sector/product average • Meets 2030 sector/product average
Support activities with higher market opportunity in transition	Size of value chain by 2050 in 1.5 °C pathway	Markets for some transition activities could remain robust for decades, whereas others could face long-term decline. Those with larger markets in 2050 reflect higher transition opportunity. Larger market opportunity also implies ability to gain/keep market share (breakeven cost).	<ul style="list-style-type: none"> • Large value chain by 2050 • Moderate value chain by 2050 • Small or nonexistent value chain by 2050

³⁵ The use of lifecycle emissions for determining green eligibility is consistent with the thresholds used in the European Union’s Green Taxonomy.

Objective	Criteria	Rationale	Possible Measure
Sequestration projects only			
Reduce risk associated with deploying CCUS technology	Extent to which emissions may not be captured, or sequestered emissions are re-emitted into the atmosphere ^a	Some forms of CCUS are better than others in terms of the reliability of their capture rate and sequestration permanence.	<ul style="list-style-type: none"> • Low risk • Moderate risk • High risk
Demand-side risk projects only			
Avoid carbon lock-in and path dependency	Project lifetime relative to global demand for product in a 1.5 °C pathway	Transition activities with longer lifespans (or payback periods) reflect higher transition risk. Lifespan thresholds are relative to global product demand for that particular good/product.	<ul style="list-style-type: none"> • Short lifetime • Medium lifetime • Long lifetime
a) While the specific thresholds for this criterion still need to be developed, the objective is to reward projects that deploy CCUS technology that has reliable capture rates and can demonstrate permanent sequestration.			

To qualify under this additional emissions-intensity criterion, projects must be able to demonstrate that they will make significant improvements by 2030. More specifically, projects must demonstrate, through existing capital expenditures and forward-looking capital plans, that emissions are expected to meet or fall below the 2030 threshold. Importantly, the project cannot have an emissions intensity above the 2030 threshold, which helps guarantee that all transition projects in the taxonomy make significant investments to stay transition-consistent (projects that do not make these significant emissions-reduction investments would have been ineligible already in the categorization framework in step #1).

Like the green projects, transition projects are evaluated for their potential market opportunity in transition (see Box 9 above). Using the value chain of specific goods and services as the rough proxy, a project that is selling into a larger market—and where there are fewer viable alternatives to what the project is selling into the market—has more opportunity. The market for green steel, for example, is expected to be significant in the transition.

Transition projects that sequester emissions face the same additional criterion as green projects. For transition activities, this criterion is for projects that utilize CCUS technologies to reduce their scope 1 and 2 emissions. While the specific thresholds for this criterion still need to be developed, the objective is to convey the risk of continued scope 1 and 2 emissions along a project's transition pathway.

The rationale for this additional criterion is twofold. First, avoided or abated emissions are better than generating emissions that then must be captured and stored. Second, some types of CCUS technologies have unreliable capture rates or cannot guarantee the permanence of the sequestered emissions. Both of these issues with CCUS could expose a project (and issuer) to significant transition risk (e.g., a sudden increase in unabated emissions). Recent mechanical failures with the CCUS technology at the Boundary Dam in Saskatchewan, for example, meant the facility emitted more than 500,000 additional tonnes of CO₂ in 2021 that were supposed to be captured.³⁶

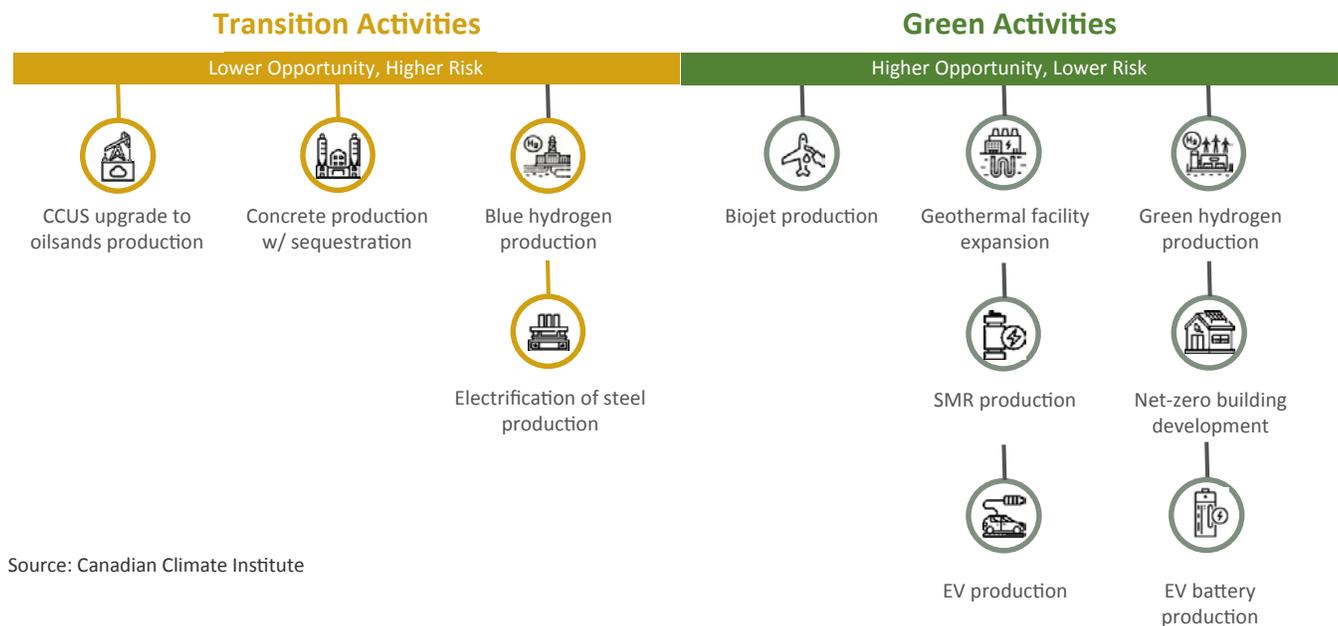
36 See S&P Global Market Intelligence article titled, [Only Still-Operating Carbon Capture Project Battled Technical Issues in 2021](#), published on January 6, 2022.

Finally, transition projects that face demand-side risk have an additional criterion that measures the risk of carbon lock-in and path dependency. While the categorization framework in step #1 is designed to filter out projects that generate significant carbon lock-in and path dependency (e.g., coal production, developing new oil and gas fields), these issues may still be relevant for some transition projects, particularly those that involve decarbonizing existing oil and gas projects. The rationale is that projects with demand-side risk have a higher degree of risk that other projects do not.

The demand-side risk criterion is based primarily on the project's lifespan. Projects with a longer lifespan, such as a natural gas production facility with a 25-year lifespan, would face higher transition risks. While the precise thresholds for this criterion still need to be developed, the timelines need to be proportionate to the relative demand-side risk for that particular activity. That is, the definition of a "long" lifespan for natural gas production facilities may be different than for oil production facilities, given that global demand for natural gas is expected to be more robust (and for longer) than demand for oil.

Taken together, Figure 3 below illustrates how this type of scoring system could work in practice. It shows a range of hypothetical green and transition projects, evaluated based on their relative transition risk and opportunity. These examples are, however, for illustrative purposes only. The actual evaluation or scoring of projects will ultimately require developing the rigorous methodology and criteria discussed above. It will also require identifying an appropriate delivery model for its use and administration (e.g., ESG rating agencies, standard-setting body). See Annex 2 for more details on the scoring methodology, which informs the relative placement of projects in this figure.

Figure 3: Hypothetical Green and Transition Projects



Source: Canadian Climate Institute

Recommendation 9

We recommend that the Taxonomy initiative consider, as a future priority, developing a methodology and criteria to differentiate the relative risk and opportunity of green and transition projects, to enhance investment decision-making and the taxonomy's sophistication and credibility.





Part Three: Implementation

There is an imperative to proceed expeditiously to develop and implement the Canadian green and transition finance taxonomy. Delays would present missed opportunities for Canada to mobilize green and transition capital in a meaningful way as well as influence the global taxonomy dialogue. Proceeding expeditiously, however, cannot come at the expense of quality and credibility. Given these considerations, the TTEG recommends that the taxonomy be developed and implemented in two discrete phases, as follows:

Phase 1: Running start led by the SFAC (Fall 2022 to Summer 2023)

- ✔ Publish a short-form taxonomy covering priority sectors and activities.
- ✔ Lay the groundwork for the implementation of the taxonomy, for the long term

The SFAC endorsed and submitted this Report to Canada's Deputy Prime Minister and Minister of Finance as well as the Minister of Environment and Climate Change for consideration and action in fall 2022. The Ministers will likely require time to consider the Report and provide a formal response to the SFAC on its recommendations.

In the interim, the SFAC, subject to prima facie federal support, would direct the TTEG to develop the taxonomy architecture introduced in this Report, with a focus on establishing voluntary issuance requirements and green and transition criteria for an initial set of priority sectors and activities, identified through a risk- and needs-based assessment.

To advance this work quickly, the TTEG would seek to harness the substantial body of taxonomy-relevant knowledge and expertise that exists domestically and internationally.³⁷ To do so, it would rely on the SFAC's contracted research resources as well as engage with its network of knowledge partners. This work would include undertaking additional in-depth research and stakeholder engagement on critical issues identified over the course of developing this Report, including defining existing versus new, separately for oil and gas production projects, as well as working with SFAC participating organizations (e.g., property and casualty insurance, reinsurance) and other stakeholders on how to incorporate adaptation and resilience into the

³⁷ The TTEG, in developing the green and transition finance taxonomy, should leverage, as appropriate, the green/sustainability criteria set out in the EU sustainable finance taxonomy. This could accelerate the development process and promote interoperability with a global best practice taxonomy.

taxonomy's framework architecture. Industry engagement will also be critical to field test the criteria for usability and practicality. The aim would be to publish a short-form taxonomy, under the banner of the SFAC, by spring-summer 2023.

In parallel, the SFAC and the TTEG would begin to lay the groundwork for the implementation of the taxonomy, for the long term. This would involve implementation-related dialogue with federal and provincial governments and Indigenous rightsholders and leadership, identifying funding models and potential contributors, preparing a short list of financial sector representatives for the Taxonomy Council and identifying possible custodian organizations. It could also involve initiating discussions towards formalizing information sharing and mutual assistance arrangements with taxonomy initiatives in other jurisdictions.

Phase 1 would be led by the SFAC and the TTEG. It would continue to rely on the existing governance arrangements, including engagement with the federal-provincial Official Sector Coordinating Group³⁸, while recognizing that balanced engagement will be needed with provincial governments, industry and other stakeholders to support implementation towards Phase 2.

Phase 2: Full implementation led by the federal government and SFAC (summer 2023 onwards)

- ✓ The federal government and the SFAC establish the Taxonomy Council ("Council"), select its composition and provide establishment funding (summer-fall 2023).
- ✓ The Council conducts a merit-based process to select the Taxonomy Custodian ("Custodian") (by end-2023).
- ✓ The Custodian hires the staff and convenes the technical working groups needed to develop a comprehensive taxonomy, using the short-form version as the starting point (by mid-2024).
- ✓ The Custodian develops the draft taxonomy, publishes it for consultation (early-2025) and submits it to the Council for approval (fall 2025).
- ✓ The approved taxonomy is published (end-2025); the Council sets the next phase of the taxonomy development work (ongoing).

The federal government and the SFAC, in summer-fall 2023, would formally establish the Council as the governing body of the Taxonomy initiative. The Council could be prescribed in legislation, established as a ministerial committee under existing legislation or convened through non-legislative means, such as by memorandum of agreement. As speed of establishment is an important consideration, non-legislative approaches may be preferable; however, each option should be assessed to determine which one would best meet the overall needs of this initiative.

Upon establishment of the Council, the federal government and the SFAC would assign representatives to serve on the Council. Federal representation would be set by the Ministers responsible for the initiative. The SFAC would establish a process to identify and select a representative from each of the major segments of Canada's

³⁸ Members of the Official Sector Coordinating Group are Finance Canada, Environment and Climate Change Canada, Bank of Canada, the Office of the Superintendent of Financial Institutions, Autorité des marchés financiers (Québec), Ontario Securities Commission, Alberta Securities Commission, British Columbia Securities Commission, Financial Services Regulatory Authority of Ontario and the British Columbia Financial Services Authority.

financial sector. Provinces may be engaged at this time to invite representation (e.g., securities regulators). The federal government and the SFAC (i.e., voluntary contributions from its participating organizations) would provide the start-up funding to establish the Council.

The Council would lead a merit-based process to identify and select a research organization by end-2023 to serve as the Custodian. With the Custodian in place, including its senior leadership team, the Council would then direct it to develop and submit for its approval the complete version of the taxonomy by fall 2025. The Custodian would use the published short-form taxonomy as the starting point and proceed to broaden the issuance requirements and green and transition criteria for all sectors and activities in Canada that are material from a climate mitigation perspective. As part of this exercise, it would undertake best efforts to develop criteria in support of climate adaptation and resiliency objectives.

The Custodian's senior leadership would proceed expeditiously to build the capacity necessary to meet this milestone. It is expected that, by mid-2024, the Custodian would have the requisite expert staff and external technical working groups in place and that substantive taxonomy development would be well underway. In parallel, the Council would implement the balance of the infrastructure needed to consider and approve taxonomy proposals, including developing voting procedures and rules, a framework to measure performance and outcomes, as well as establishing the expert advisory committee.

The Custodian would issue a consultation draft of the taxonomy by early-2025. In addition to inviting public comment at this time, the Stakeholder Advisory Forum would be launched and the inaugural meeting would be used to invite feedback from participants on the draft. The Custodian would review the feedback, make any necessary revisions and submit the final taxonomy proposal to the Council for approval by fall 2025, with a target milestone for publication by end-2025.

Additional discussions would need to take place during the development process, particularly among the Council's government and regulatory representatives, to determine what status the taxonomy should take (e.g., voluntary or policy guidance, basis for a regulatory proposal). The Custodian would be responsible for accompanying the release of the taxonomy with supplementary explanatory materials, as well as conducting education and awareness-raising activities.

In the period following the taxonomy's launch and implementation, the Council would set the objectives and priorities for the next phase of taxonomy development, which could include formalizing the process to periodically review the green and transition criteria, deepening elements of the published taxonomy (e.g., climate adaptation and resilience, DNSH criteria) and expanding the taxonomy to include other priority environmental and social objectives.

Recommendation 10



We recommend that the green and transition finance taxonomy be developed in two discrete phases. Phase 1 would see the SFAC publishing a short-form taxonomy covering priority sectors and activities by mid-2023, as well as laying the groundwork for the implementation of the taxonomy for the long term, including governance, funding and strategic planning. Phase 2 would involve the full implementation of the Taxonomy initiative and publishing a substantially more complete and detailed taxonomy by end-2025 at the latest.

Annex

Glossary of Key Terminology

Carbon costs: The price that an entity pays for their greenhouse gas emissions. Carbon costs could be direct through carbon pricing, or implicit through regulation. An entity that reduces its emissions faces lower carbon costs and improves the carbon competitiveness of its products.

Carbon lock-in: Emissions-intensive assets, technologies and energy systems that have long lifespans (or capital payback periods) and 'lock in' future emissions and, as a result, 'lock out' lower-carbon alternatives and are inconsistent with representative 1.5 °C climate scenarios. Investing in assets prone to lock-in restricts future flexibility and can both increase emissions and the costs of climate action. Carbon lock-in can apply to both supply-side risk projects and demand-side risk projects (see definitions).

Carbon offset: An emissions unit issued by a carbon crediting program that represents an emission reduction or removal of a greenhouse gas emission. Carbon offsets are uniquely serialized, issued, tracked and cancelled by means of an electronic registry.

Dead-end pathway: Technologies and technological pathways that are inconsistent with the global climate goal of keeping the rise in global temperatures below 1.5 °C degrees, and that require immediate phase-out based on these pathways. Dead-end pathways often have economically and technically viable alternatives and play no or limited role in the transition to 2050 climate goals.

Demand-side risk: The extent to which global demand for a product will decrease in the global low-carbon transition. Projects that have significant downstream (scope 3) emissions face high demand-side risk, particularly when they have long lifespans. Projects that must be immediately phased out to align with 1.5 °C climate targets also face high demand-side risk.

Path dependency: The extent to which incumbent assets, technologies and energy systems create inertia and reinforce political, market and social factors that delay or block climate action.

Scope 1 emissions: Direct greenhouse gas emissions that occur from sources that are owned or controlled by an entity. Examples are emissions from combustion in owned or controlled boilers, furnaces, vehicles; or emissions from chemical production in owned or controlled process equipment.

Scope 2 emissions: Indirect greenhouse gas emissions that occur from the generation of purchased electricity, steam, heating or cooling consumed by an entity. Scope 2 emissions physically occur at the facility where electricity, steam, heating or cooling is generated.

Scope 3 emissions: Indirect emissions outside of scope 2 that occur in the value chain of the reporting entity, including both upstream and downstream emissions. Examples for a petroleum refinery are emissions from the extraction and transportation of crude oil (upstream) and from the distribution and combustion of refined products (downstream).

Supply-side risk: The extent to which a project's scope 1 and 2 emissions increase its exposure to higher carbon costs in the global low-carbon transition. Higher carbon costs increase production costs, which diminishes a project or company's competitiveness as carbon emissions increasingly become a liability. Generally, projects with higher scope 1 and 2 emissions face higher supply-side risk.

Stranded assets: Assets that, prior to the end of their economic life (as assumed at the investment decision point), are no longer able to earn an economic return, as a result of changes associated with the transition to a low-carbon economy (lower than anticipated demand or prices).

Transition opportunity: The quality of having significant market growth potential in a global low-carbon transition. Having low or best-in-class emissions, large projected future demand or high certainty of emissions reductions all reflect high transition opportunity.

Transition plan: An aspect of an entity's overall strategy that lays out a set of targets and actions supporting its transition toward a lower-carbon economy, including actions such as reducing its emissions.

Transition risk: The quality of having stagnant or negative market growth potential in a global low-carbon transition. Having high emissions, shrinking projected future demand, carbon lock-in or low certainty of emissions reductions all reflect high transition risk.

Annex 1: Examples of Three-Tier Governance Models

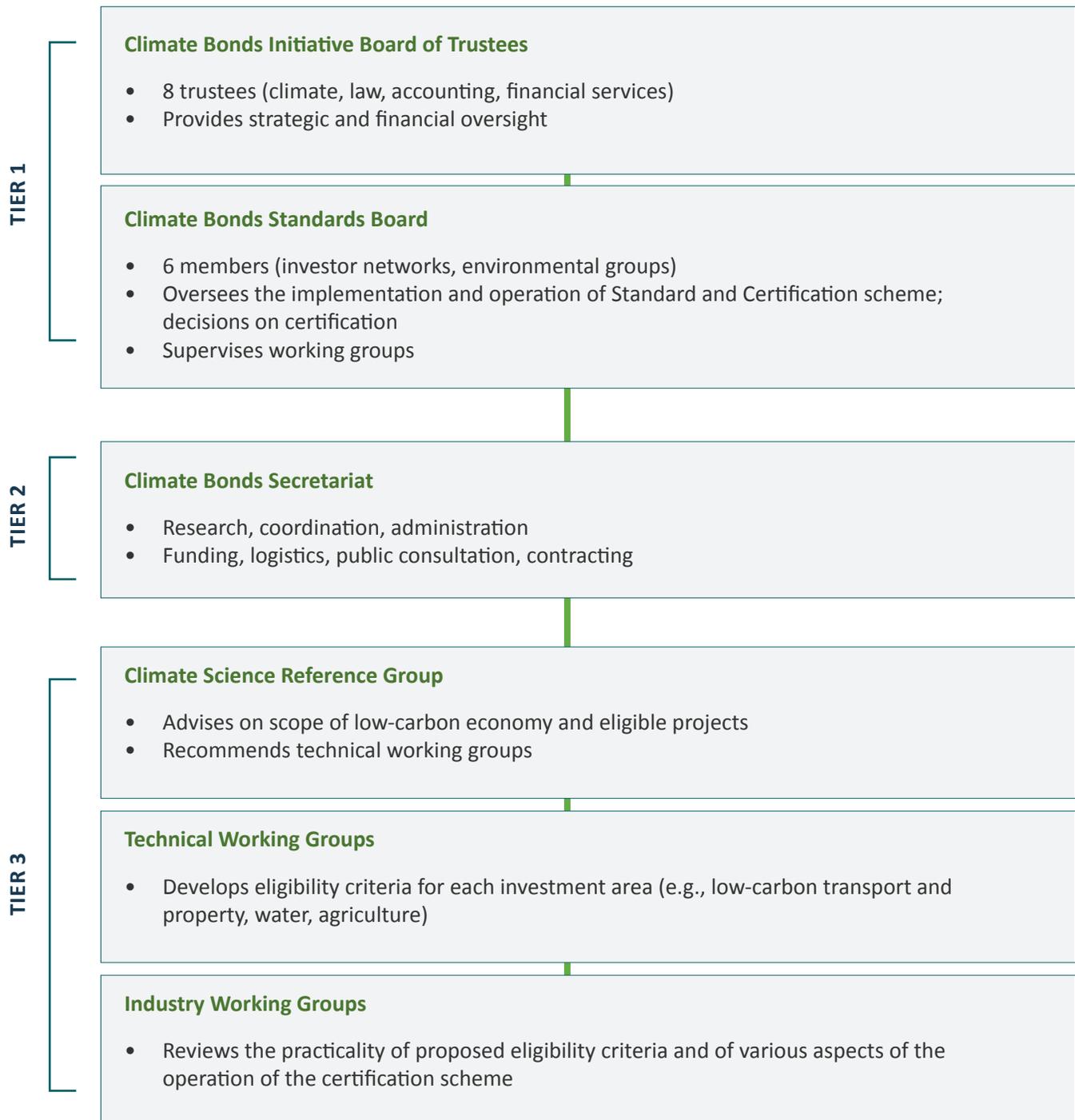
Sustainability Accounting Standards Board (SASB) (pre-merger with the International Integrated Reporting Council)³⁹

GOVERNANCE RELATED TO THE DEVELOPMENT OF SASB STANDARDS



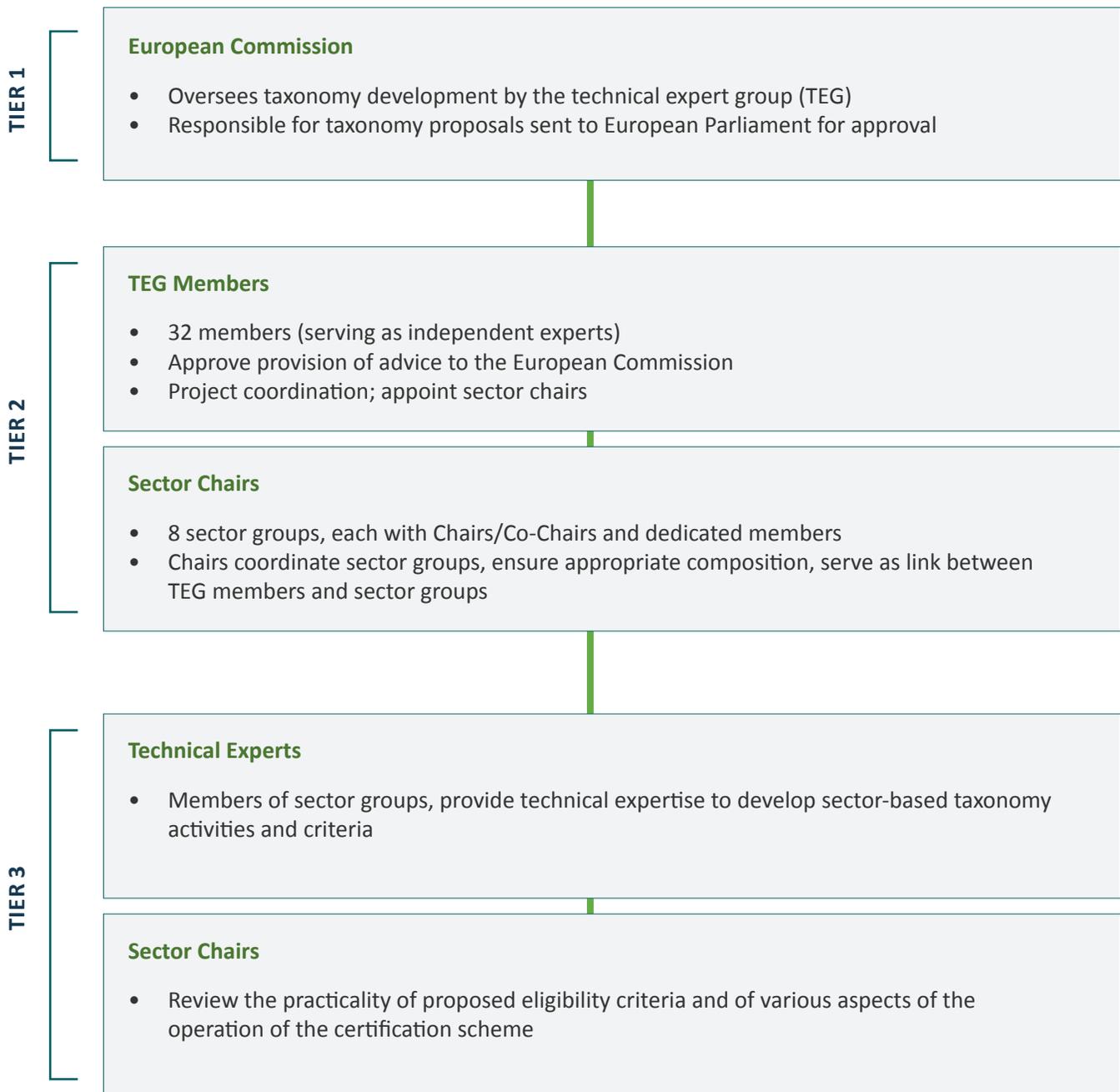
³⁹ Information on SASB's governance structure is provided in SASB's [Rules of Procedure](#). In June 2021, SASB and the IIRC merged under the banner of the Value Reporting Foundation (VRF). The VRF was consolidated into the IFRS Foundation in August 2022.

Climate Bonds Initiative

GOVERNANCE RELATED TO THE CLIMATE BONDS INITIATIVE AS WELL
AS ITS CLIMATE BONDS STANDARD AND CERTIFICATION SCHEME⁴⁰

⁴⁰ Additional governance information is available on the Climate Bonds Initiative [website](#).

European Union Taxonomy

GOVERNANCE RELATED TO THE INITIAL DEVELOPMENT OF THE EU TAXONOMY (PRIOR TO THE CREATION OF THE DOMESTIC PLATFORM ON SUSTAINABLE FINANCE)⁴¹

⁴¹ See page 75 of the *Taxonomy Roadmap Report for Chile (May 2021)*, which provides a figure summarizing the government structure that was implemented to develop the EU Taxonomy.

Annex 2: Piloted Methodology to Score Green and Transition Projects

The following discussion introduces a system to score green and transition projects, according to their relative transition opportunities and risks, reflecting the proposed criteria introduced in this Report. The scoring system was developed to test the feasibility of concept, and may serve as a starting point for the Taxonomy Custodian. Further work is needed to refine and test the piloted approach.

Scoring Green Projects

As summarized in Table A1, each green project would receive a score out of 6 based on its performance against the proposed criteria. Scores between 1 and 2 would receive a Green(+) classification. This represents the best possible score in the transition framework, reflecting significant transition opportunity and limited or no transition risk. Scores between 3 and 4 would receive a Green classification, while scores between 5 and 6 would receive a Green(-) classification. Projects with the Green(-) classification would still show opportunity in the transition (they are, after all, activities and projects that demonstrate low or zero emissions); however, certain attributes of the project would show some elements of relative risk.

Table A1: Criteria and Measures for Green Projects

Criteria	Measure
Emissions intensity relative to sector/product average	0 = N/A (negative emissions) 1 = Below sector/product average 2 = Meets sector/product average 3 = Above sector/product average
Size of value chain by 2050 in a 1.5 °C pathway	1 = Large value chain by 2050 2 = Moderate value chain by 2050 3 = Small or nonexistent value chain by 2050
Sequestration projects only	
Extent to which sequestered emissions may be re-emitted into the air	0 = N/A 1 = High certainty of permanence 2 = Moderate certainty 3 = Low certainty

Scoring Legend

Total between 1 and 2 = **Green +**

Total between 3 and 4 = **Green**

Total between 5 and 6 = **Green -**

Table A2 shows how a range of hypothetical examples of green projects would be scored using the criteria and measures discussed above.

Table A2: Evaluating Hypothetical Green Projects

Projects	Performance Measure	Performance Outcome	Score
New green hydrogen facility In operation by 2026 with an intensity of 2 tCO ₂ e/tH ₂	Lifecycle emissions intensity relative to product average in net-zero pathway	Lifecycle emissions intensity below product average	1/3
	Value chain market size in a 1.5 °C pathway by 2050	Clean hydrogen market expected to be large, but with significant uncertainty (between \$2.5 trillion and \$12 trillion by 2050)	2/3
	Certainty of sequestered emissions permanence	N/A: no sequestration	N/A
Classification: Green			Total: 3/6
Afforestation development project Large-scale afforestation project on designated and protected lands	Lifecycle emissions intensity relative to product average in net-zero pathway	N/A: negative emissions	N/A
	Value chain market size in a 1.5 °C pathway by 2050	Large and growing market for certified negative-emissions solutions	1/3
	Certainty of sequestered emissions permanence	Planted area with low risk of forest fires	1/3
Classification: Green +			Total: 2/6

Projects	Performance Measure	Performance Outcome	Score
Retooled electric vehicle production Retooled facility already in operation with an intensity of 35 gCO ₂ /km until 2030	Lifecycle emissions intensity relative to product average in net-zero pathway	Lifecycle emissions intensity above product average	3/3
	Value chain market size in a 1.5 °C pathway by 2050	EV market expected to be worth over \$1 trillion by 2030	1/3
	Certainty of sequestered emissions permanence	N/A: no sequestration	N/A
Classification: Green			Total: 4/6
New biojet production facility In operation by 2025 with an intensity of 1,343 gCO ₂ e/RTK until 2035. Medium market. No sequestration.	Lifecycle emissions intensity relative to product average in net-zero pathway	Lifecycle emissions intensity above product average	3/3
	Value chain market size in a 1.5 °C pathway by 2050	Global market expected to reach \$800 million by 2030 but highly uncertain after that	2/3
	Certainty of sequestered emissions permanence	N/A: no sequestration	N/A
Classification: Green 			Total: 5/6

Transition Projects

As summarized in Table A3, transition projects would receive a minimum score of 3 and a maximum score of 15. Those with a total score of between 3 and 5 would receive a Transition(+) classification, whereas those with a score of between 6 and 10 would receive a Transition classification. Those with a score of between 11 and 15 would receive a Transition(-) classification.

Table A3: Criteria and Measures for Transition Projects

Criteria	Measure
Emissions intensity relative to sector/product average (today)	1 = below sector/product average 2 = meets sector/product average 3 = above sector/product average
Emissions intensity relative to sector/product average in 2030 (based on net-zero pathways)	1 = well below 2030 sector/product average 2 = below 2030 sector/product average 3 = meets 2030 sector/product average
Size of value chain by 2050 in a 1.5 °C pathway	1 = Large value chain by 2050 2 = Moderate value chain by 2050 3 = Small or non-existent value chain by 2050
Sequestration projects only	
Extent to which emissions may not be captured or sequestered emissions re-emitted into atmosphere	0 = N/A 1 = Low risk 2 = Moderate risk 3 = High risk
Demand-side risk projects only	
Project lifetimes relative to global demand for product in a 1.5 °C pathway	0 = N/A 1 = Short lifetime 2 = Medium lifetime 3 = Long lifetime

Scoring Legend

Total between 1 and 5 = **Transition +**

Total between 6 and 10 = **Transition**

Total between 11 and 15 = **Transition -**

Table A4 below shows how a range of hypothetical examples of transition projects would be scored using the criteria and measures above.

Table A4: Evaluating Hypothetical Transition Projects

Projects	Performance Measure	Performance Outcome	Score
New blue hydrogen facility In operation by 2024 with an intensity of 27 kgCO ₂ e/GJ. Reliance on CCUS for sequestering 90 per cent of emissions	Emissions intensity relative to product average in net-zero pathway (in 2022)	Emissions intensity well below 2022 product average	1/3
	Emissions intensity relative to product average in net-zero pathway (by 2030)	Emissions intensity well below 2030 product average	1/3
	Value chain market size in a 1.5 °C pathway by 2050	Clean hydrogen market expected to be large, but with significant uncertainty (between \$2.5 trillion and \$12 trillion by 2050)	2/3
	Sequestration projects only: risk of deploying CCUS technology	Carbon capture process highly reliable, sequestered emissions have high certification standards	1/3
	Demand-side risk projects only: payback period relative to demand-side risk in a 1.5 °C pathway	N/A: draws on existing gas supply, no new demand-side risk	0/3
Classification: Transition +			Total: 5/15

Projects	Performance Measure	Performance Outcome	Score
Electrified steel production Electrification of a facility already in operation with an intensity of 1.5 tCO ₂ e/t steel until 2030	Emissions intensity relative to product average in net-zero pathway (in 2022)	Emissions intensity above 2022 product average	3/3
	Emissions intensity relative to product average in net-zero pathway (by 2030)	Emissions intensity well below 2030 product average	1/3
	Value chain market size in a 1.5 °C pathway by 2050	Global market for steel valued at nearly \$1T, expected to rise by 2050	1/3
	Sequestration projects only: risk of deploying CCUS technology	N/A: no sequestration	0/3
	Demand-side risk projects only: payback period relative to demand-side risk in a 1.5 °C pathway	N/A: no new demand-side risk	0/3
Classification: Transition +			Total: 5/15
Retrofitted natural gas production Methane capture retrofit of a facility already in operation with an intensity of 62 gCO ₂ e/MJ and a lifespan of 10 years	Emissions intensity relative to product average in net-zero pathway (in 2022)	Emissions intensity meets 2022 product average	2/3
	Emissions intensity relative to product average in net-zero pathway (by 2030)	Emissions intensity meets 2030 product average	3/3
	Value chain market size in a 1.5 °C pathway by 2050	Market starts declining in 2020s but demand remains robust for low-cost, low-emissions producers	2/3
	Sequestration projects only: risk of deploying CCUS technology	N/A: no sequestration	0/3
	Demand-side risk projects only: payback period relative to demand-side risk in a 1.5 °C pathway	Short payback period, expected to close by 2032	1/3
Classification: Transition			Total: 8/15

Projects	Performance Measure	Performance Outcome	Score
Retrofitted oilsands production CCUS retrofit for existing facility with an intensity of 90 kgCO ₂ e/bbl. Facility closes in 2045.	Emissions intensity relative to product average in net-zero pathway (in 2022)	Emissions intensity above product average	3/3
	Emissions intensity relative to product average in net-zero pathway (by 2030)	Emissions intensity below product average	2/3
	Value chain market size in a 1.5 °C pathway by 2050	Market starts declining in 2020s (faster than gas). Demand highly uncertain and volatile post-2035.	3/3
	Sequestration projects only: risk of deploying CCUS technology	Potential challenges with capture reliability, high certification storage standards	2/3
	Demand-side risk projects only: payback period relative to demand-side risk in a 1.5 °C pathway	Long payback period, expected to close in 2045	2/3
Classification: Transition 			Total: 12/15

Annex 3: Sustainable Finance Market Snapshot

Overview

	
GLOBAL MARKET: SUSTAINABLE BONDS	CANADIAN MARKET: SUSTAINABLE BONDS
Total: US\$2.7 trillion	Total: US\$49 billion
2021 issuance: US\$1.1 trillion (+105 per cent year over year)	2021 issuance: US\$20 billion (+105 per cent year over year)
2021 by category:	2021 by category:
Approximately 55 per cent green bonds, 19 per cent social, 16 per cent sustainability, 10 per cent sustainability-linked, 0.4 per cent transition	Approximately: 67.2 per cent green bonds, 17 per cent sustainability, 12.4 per cent sustainability-linked, 3.4 per cent social

What are the Types of Sustainable Debt?

The universe of sustainable debt consists of an evolving realm of financial instruments falling primarily within two debt-financing categories: *use-of-proceeds*, and *performance-* or *sustainability-linked debt*. The key difference between these two categories is the way in which the proceeds can be utilized.⁴²

1. **Use-of-proceeds** finance is any type of bond or loan instrument where proceeds are exclusively made available to finance or re-finance eligible environmental and/or social projects. Many thematic categories have emerged over time, including green bonds/loans, social bonds/loans as well as sustainability and transition bonds.
2. **Sustainability-linked finance** is any type of bond or loan instrument that aims to incentivize material environmental and/or social achievements by linking the financial terms of the bond or loan to pre-defined entity-level sustainability performance targets (SPTs) measured by key performance indicators (KPIs). Unlike the use-of-proceeds model, sustainability-linked debt proceeds can be used for general corporate purposes. This category consists of sustainability-linked loans (SLLs) and sustainability-linked bonds (SLBs).

⁴² The International Capital Market Association has developed extensive voluntary guidance on use-of-proceeds and sustainability-linked bonds, which can be viewed [here](#). Similar guidance for use-of-proceeds and sustainability-linked loans has been developed by the Loan Market Association, Asia Pacific Loan Market Association and Loan Syndications & Trading Association, which can be viewed [here](#).

Global Market: 2021 Overview

With sustainable debt issuance exceeding US\$4 trillion⁴³ by the end of the year, 2021 was a period of exceptional growth driven by record-high annual issuance volume of \$1.65 trillion – an increase of 115 per cent from 2020, and 184 per cent from 2019.

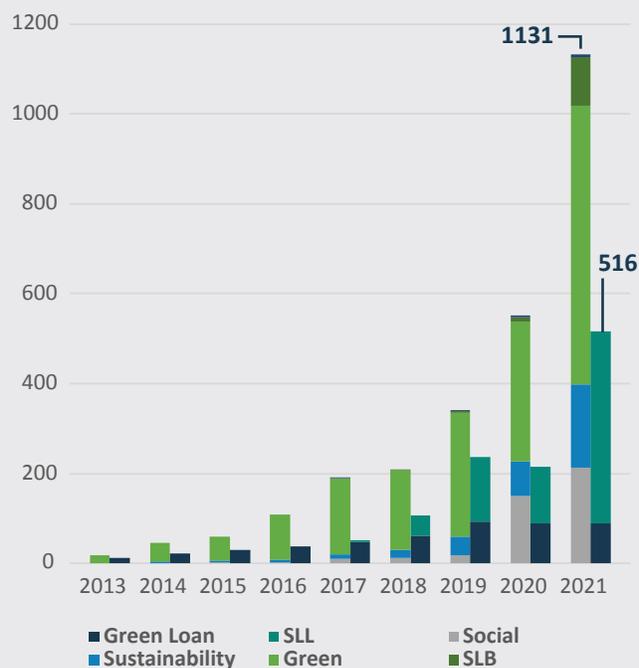
Sustainable bonds⁴⁴ accounted for nearly 70 per cent of the 2021 total and achieved the symbolic, but much anticipated milestone of \$1 trillion in annual issuance for the first time. Green bonds, the oldest and most established bond segment, remained atop the market as issuance doubled to \$621 billion. However, newer categories, including sustainability and sustainability-linked bonds, are gaining momentum, as demonstrated by the green bond's declining share of the bond market, which decreased from 90 per cent in 2017 to 55 per cent in 2021.

Meanwhile, after a moderate decline of 10 per cent between 2019 and 2020, sustainable lending returned to growth in 2021, with sustainable loans accounting for 30 per cent of the annual total. Sustainability-linked loans⁴⁵ were responsible for the entirety of this growth, as lending more than tripled to reach \$428 billion. Green loan lending declined by a modest 1 per cent and was the only category to register a decrease in issuance.

Figure A1: Cumulative sustainable debt issuance (US\$tn)



Figure A2: Annual sustainable bond and loan issuance, by category (US\$bn)



Source: BloombergNEF

43 All figures expressed in U.S. dollars unless otherwise noted.

44 In this report, sustainable bonds refer to green, social, sustainability, transition and sustainability-linked bonds.

45 In this report, sustainable loans refer to green and sustainability-linked loans.

Sustainable Bonds

- Issuance volume of \$1.1 trillion—more than doubled 2020 issuance. Cumulative issuance totaled \$2.7 trillion.
- Record-high annual issuance across all five thematic bond categories.
- Approx.: 55 per cent green bonds, 19 per cent social, 16 per cent sustainability, 10 per cent SLB, 0.4 per cent transition.
- 6,000 debt instruments issued by more than 1,500 issuers.⁴⁶

The \$1 trillion milestone arrives amid growth across all thematic bond categories. Most notably, issuance of sustainability-linked bonds, the first of which was issued in 2019 by Italian energy company, Enel, was nearly nine times higher than 2020.

Sustainability bond issuance more than doubled, whereas social bond issuance, which was coming off a huge surge in 2020 amidst the COVID-19 Pandemic, experienced a more modest increase of about 40 per cent during 2021. Transition bonds, which accounted for just under \$5 billion in issuance, have so far enjoyed less clarity than the other use-of-proceeds bonds regarding eligible projects. This lack of certainty is likely a contributing factor to the category's comparatively modest growth. Notable issuances this year included the EU's inaugural €12 billion green bond, as well as two United Kingdom sovereign green issuances totalling \$22 billion.⁴⁷ Meanwhile, the Province of Ontario's C\$2.75 billion (US\$2.2 billion) green issue was the largest green issue by a local authority in 2021⁴⁸

Figure A3: Share of annual issuance volume by category (%)

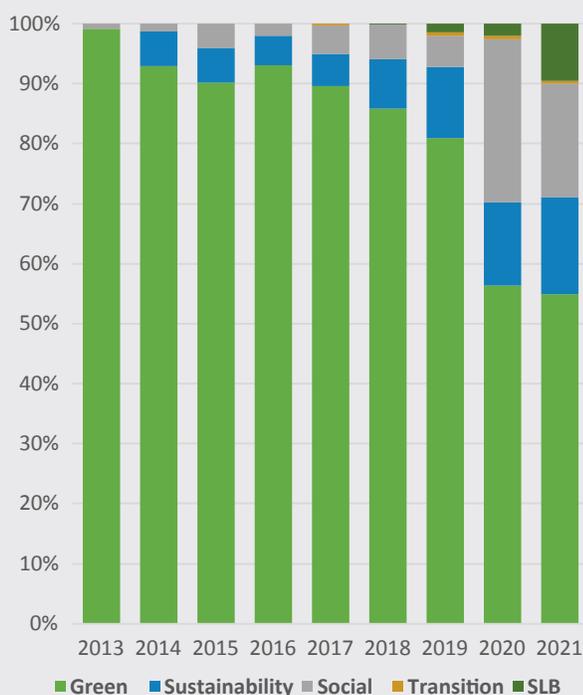
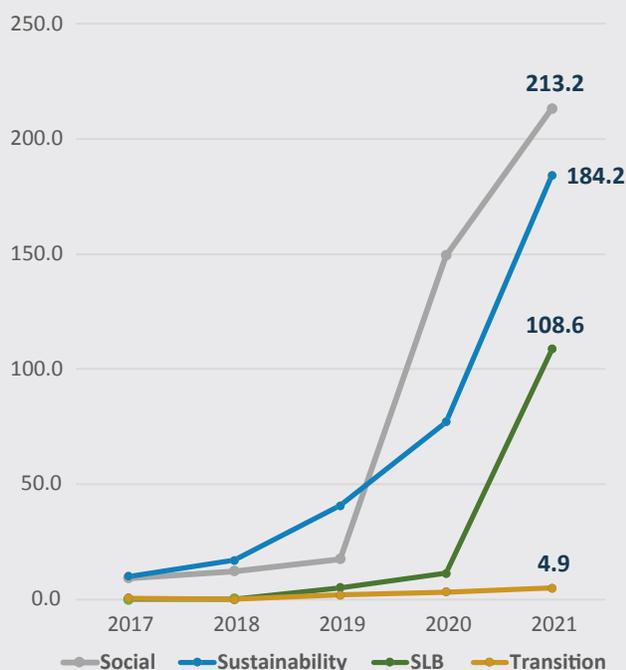


Figure A4: Other bonds continue to gain momentum (US\$bn)



Source: BloombergNEF

46 As reported by the Climate Bonds Initiative. See: [Sustainable Debt: Global State of the Market 2021](#).

47 See [press release](#): European Commission successfully issues first green bond to finance the sustainable recovery. The EU's inaugural green bond was 11 times oversubscribed, attracting total investor demand of €135 billion. The UK's £10 billion inaugural green sovereign issuance in September attracted investor demand of £100 billion, the highest ever recorded for a UK government bond sale. The bond exhibited a price premium or "greenium" of 2.5bps, saving the Government £28 million over the life of the bond (see: [Financial Times](#)).

48 See: [Ontario 8-year – \\$2.75 Billion DMTN CAD Green Bond](#)

Canadian Sustainable Bond Market in 2021⁴⁹

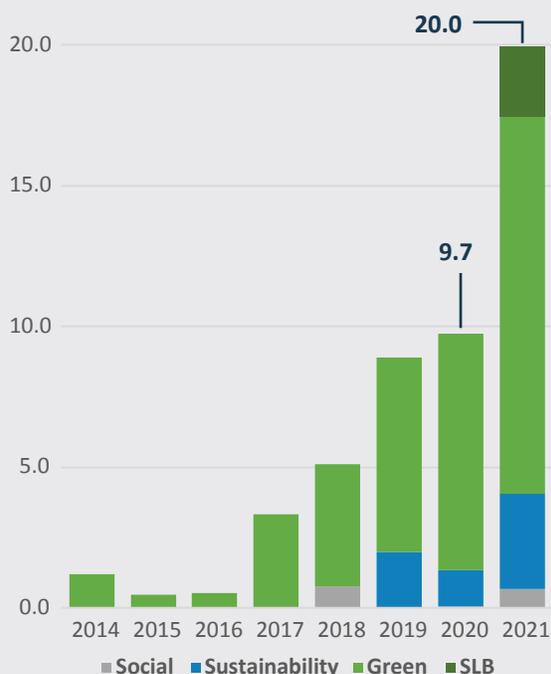
Growth in sustainable bond issuance by Canadian issuers kept pace with the broader global market as annual issuance reached a record **US\$20 billion in 2021**, just over double the \$9.75 billion issued in 2020. At year-end, cumulative sustainable bond issuance stood at approximately \$49 billion, positioning the Canadian market to surpass \$50 billion in early 2022. There were **32 issuers in 2021**, with eight bringing more than one bond to market. For information on the top five issuers of 2021, see Table A5.

With \$13.4 billion in 2021, green bonds continue to account for the majority of total issuance. However, **the market continues to diversify amid the arrival of the social, sustainability and sustainability-linked bond labels** in 2018, 2019, and 2021 respectively. The green category's share of the market has declined from 100 per cent in 2017 to 67 per cent in 2021 as a result.

Provincial and municipal governments account for 25 per cent of cumulative issuance volume. The Province of Ontario, which is the largest issuer by far, is joined by the Province of Quebec and the cities of Ottawa, Toronto and Vancouver.

In November 2021, Bruce Power, the operator of the Bruce Power Nuclear Generating Station in Ontario, issued a C\$500 million bond recognized **as the world's first green bond dedicated to nuclear power**.⁵⁰ In July 2022, Ontario Power Generation (OPG) issued a \$300 million nuclear green bond, to support a project to refurbish the Darlington nuclear power generating facility.

Figure A5: Annual sustainable bond issuance (US\$bn)



Source: BloombergNEF

Figure A6: Sustainable bond issuance, 2021 (US\$bn)



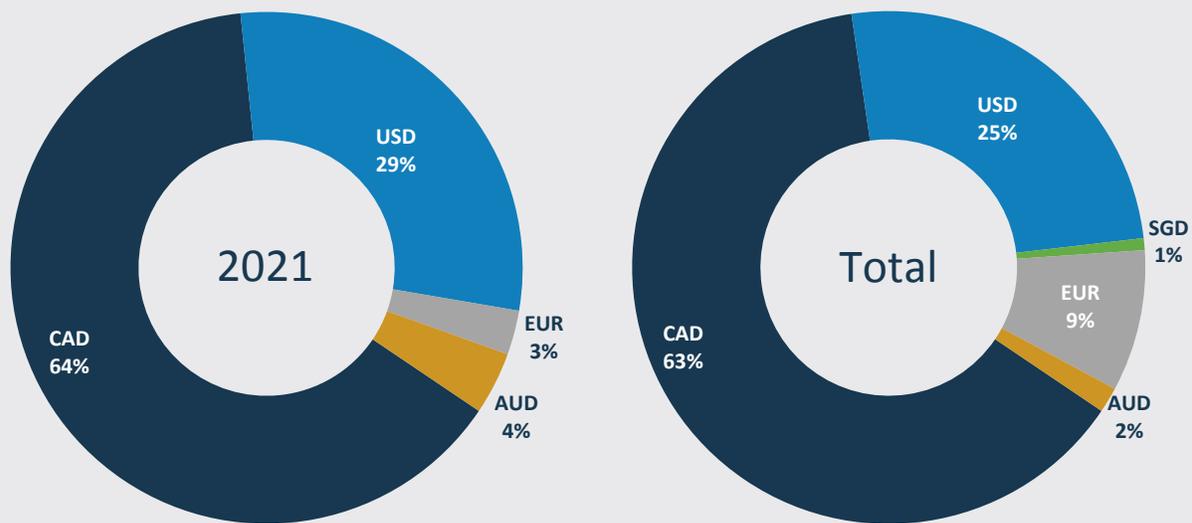
⁴⁹ Due to limited data availability, loans have not been included in the overview of the Canadian market; however, sustainability-linked lending is increasing in Canada.

⁵⁰ According to [Bruce Power](#), this green bond is a global first for nuclear power.

The top ten all-time issuers combined for US\$28.7 billion in issuance, or 58 per cent of cumulative issuance volume. All ten entities are repeat issuers, with the Province of Ontario and the National Bank of Canada leading with ten each. Three have had a presence in the market since its early stages in 2014. Enbridge, a first-time issuer in 2021 with the issuance of two sustainability-linked bonds, is the most recent entrant to the top ten list. For more information on top issuers, see Table A6.

Overall, bonds have been issued in five currencies. CAD is the most common issuing currency, accounting for 63 per cent of cumulative issuance volumes. USD is a distant second, followed by the Euro, the Australian dollar, and the Singapore dollar.

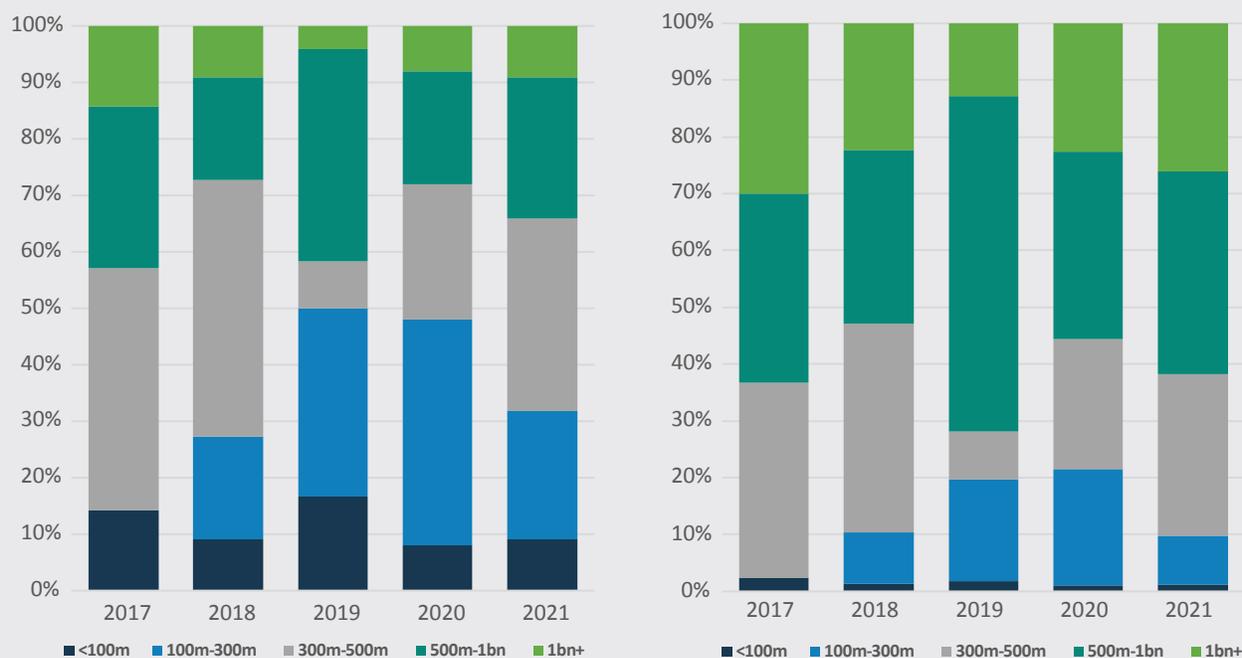
Figure A7: Share of issuance volumes by currency



Source: BloombergNEF

Cumulatively, 33 per cent of bonds had an issuance size of US\$500 million or more, accounting for \$29.5 billion, or 60 per cent of total issuance. US\$300-500 million is the most common issuance size.

Figure A8: Issuance size by: Share of bonds issued (left) and share of issuance volume (right).



Source: BloombergNEF

Ontario's Ten Green Issuances⁵¹

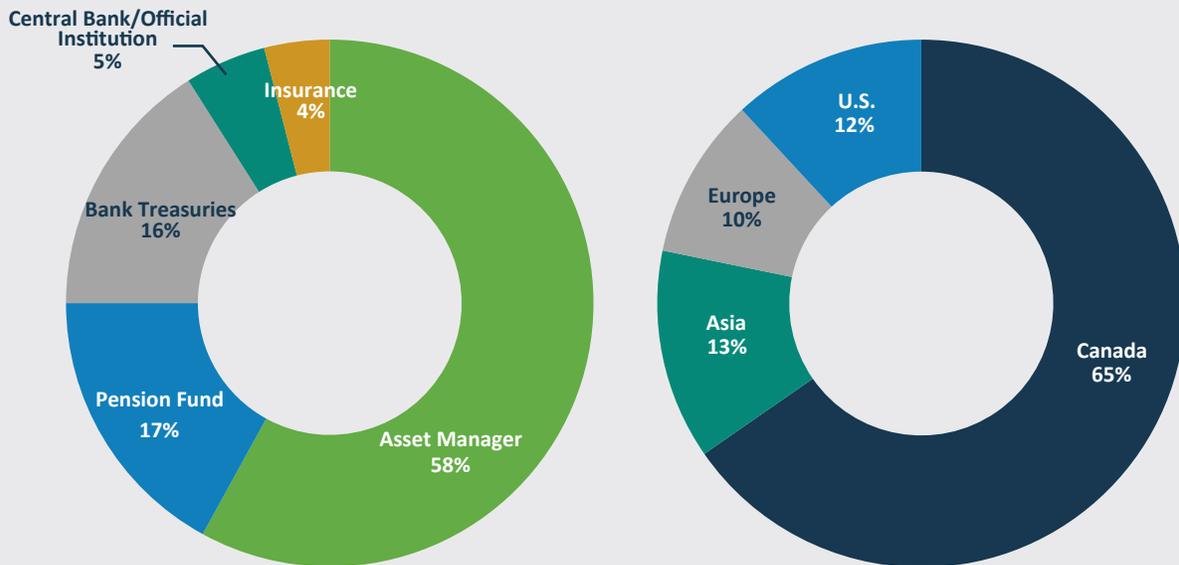
Ontario is the largest issuer of Canadian dollar green bonds. In 2021, the Province issued its 10th and largest green bond to date in the amount of C\$2.75 billion (~US\$2.2 billion), exceeding C\$10 billion in cumulative issuance (~US\$8.4 billion).

As of November 2021, 89 per cent of proceeds have been disbursed across 27 projects in clean transportation (75 per cent), energy efficiency and conservation (21 per cent) and adaptation and resilience (3 per cent).

The green bond program has played an important financing role in Ontario's mass transit buildout. And, with C\$148 billion in planned infrastructure investments over the next ten years, including C\$61 billion in transit infrastructure, the Province has signaled its desire to continue the program, with plans to bring multiple green issuances to market annually.

51 Ontario Financing Authority: [2021 Green Bond Newsletter](#)

Figure A9: Investor demand by region and type across all ten issuances.



Source: Ontario Financing Authority: [2021 Green Bond Newsletter](#)

2022 YTD Highlights

By the beginning of June, **at least US\$10.6 billion has been issued** across 13 green, sustainability and sustainability-linked bonds.⁵² This figure is higher than the total issuance in 2020, and more than half of the total issuance in 2021. **The Government of Canada's C\$5 billion inaugural sovereign green issuance** was the largest green bond issued globally in Q1 2022.⁵³ With a final order book of C\$11 billion from 98 institutional investors,⁵⁴ the bond attracted strong demand.

First-time issuers included OMERS and PSP Investments, with a dual-tranche sustainability bond offering totaling US\$1.1 billion and a C\$1 billion green bond respectively. With previous offerings from CPPIB, OTPP, and CDPQ, **Canadian public pension plans have issued a combined US\$9 billion.** This is a unique feature of the Canadian market – as of July 2021, no pension funds outside of Canada had issued green debt.⁵⁵

Provincial and municipal governments account for at least US\$2.3 billion of 2022 issuance so far, after offerings from repeat issuers Ontario (US\$1.3 billion), Quebec (US\$781 million), and the City of Ottawa (US\$155 million).

Other first-time issuers include iA Financial (sustainability) and Tamarack Valley Energy (SLB). Other repeat issuers include QuadReal (green), TELUS (SLB), Manulife (green), and Dream Industrial REIT (green).

52 As of June 2022. Values may not reflect full 2022 YTD issuance volumes.

53 Environmental Finance, [Q1 Sustainable Bond Roundup](#)

54 RBC, [Canada's Inaugural Green Bond](#)

55 Capital Monitor, [Hard reality: Why Canada's pension plans are blazing a trail in green bond issuance.](#)

Table A5: Top-Five Canadian Issuers of 2021

Issuer	# of Deals	Issuance (US\$m)	Share of Volume	Type
Province of Ontario	2	3,186	15.96%	Green
Enbridge*	2	1,860	9.32%	SLB
CDP Financial* (CDPQ)	1	1,000	5.01%	Green
Bank of Nova Scotia	1	1,000	5.01%	Sustainability
Allied Properties REIT*	2	871	4.36%	Green
Totals	8	7,917	39.67%	–

* First-time issuer

Source: BloombergNEF

Table A6: All-Time Top Issuers (as at December 31, 2021)

Issuer	# of Deals	Issuance (US\$m)	Share of Volume	Type
Province of Ontario	10	8,364	16.97%	Green
CPPIB Capital	7	4,637	9.41%	Green
Province of Quebec	6	2,542	5.16%	Green
Toronto-Dominion Bank	4	2,453	4.98%	Green, Sustainability
National Bank of Canada	10	2,441	4.95%	Sustainability
Export Development Canada	5	1,884	3.82%	Green
Enbridge	2	1,860	3.77%	SLB
Ontario Power Generation	4	1,571	3.19%	Green
Bank of Nova Scotia	2	1,500	3.04%	Green, Sustainability
Ontario Teachers' Finance Trust	2	1,453	2.95%	Green
Totals	52	28,706	58.25%	–

Source: BloombergNEF