



Leveraging Sustainable Finance Leadership in Canada:

Opportunities to align financial policies to support clean growth and a sustainable Canadian economy

IISD REPORT



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Published by the International Institute for Sustainable Development

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Leveraging Sustainable Finance Leadership in Canada: Opportunities to align financial policies to support clean growth and a sustainable Canadian economy

January 2019

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Preface

Céline Bak was asked by IISD to review the opportunities for leveraging sustainable finance leadership in Canada. In the context of the most recent climate science and Canada's status as an oil-producing economy, this paper provides recommendations on how Canadian regulatory bodies can fill in gaps, add clarity and address inconsistencies in the financial system to increase the flow of sustainable finance. It contains a detailed proposal for climate disclosure to stimulate sustainable financial flows, including into the oil and gas sector. Through an analysis of climate science and Canadian capital markets, it lays the foundations for a climate-related, macro-prudential risk analysis in Canada, and it introduces the idea of Global Systemically Important Companies and Institutions.

Acknowledgements

The author wishes to thank the following reviewers of this policy paper: Jen Austin, Catherine Jackson (Jackson PG), Johanna Leffler (Clean Economy Fund), Kate Levick, Jane MacDonald (IISD), David McLaughlin (IISD), Andrea Moffat (Ivey Foundation), Gillian Nelson, Eddy Perez (CAN-RAC), Denise Puca, David Wei, Cynthia A. Williams (Commonwealth Law Initiative, York University), Michael Zimonyi and Junfeng Zhao.

The author wishes to thank the editorial team at IISD, Katherine Clark and Lisa Muirhead, as well as at Analytica Advisors, including Ryan Perks.

She would also like to thank IISD's communications team, including Matthew TenBruggencate and Zahra Sethna.

Finally she would like to thank her research assistant, Angela St. Aubin, without whose efforts this research would not have been possible.

This paper was made possible by a grant from the Clean Economy Fund.

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By decree of the President of the French Republic, she is a Knight of France's National Order of Merit for her contribution to mobilizing the private sector in the lead up to the Paris Agreement.

Any errors or omissions are solely the responsibility of the author.



Key Points

- Global assessments of climate-related financial disclosure to investors point to low levels of disclosure in mainstream financial reports by both corporations and financial institutions. These companies and institutions are at the start of the learning curve when it comes to providing prudent and proactive reporting on climate-related risk and opportunity. In Canada, the Canadian Securities Administrators' findings suggest that the capacity of Canadian companies and financial institutions for mainstream climate-related disclosure is low; as such, it is consistent with that of their international peers. This means that climate risk, be it regarding adapting to the physical risks of climate change or addressing the transition risks to business models from a shift to a low-carbon global economy, is not fully accounted for in corporate planning or disclosed to investors. The result is an accumulation of climate risk in capital markets.
- In order to provide regulatory certainty and the basis for investment in the capacity for corporations and financial institutions to train and hire people to proactively and prudently disclose climate risk in mainstream financial statements, on the basis of a three-year plan, Canadian laws and statutes should be updated to require mandatory disclosure of climate risk. G7 and G20 precedents can guide these legal and statutory updates.
- As they will impact international performance benchmarks, bond standards and financial product labelling, governments and regulators in Canada should monitor the application of emerging international frameworks to assess the sustainability of economic activity. The EU's initiative to develop a taxonomy of sustainable economic activity will inform how financial institutions evaluate and disclose the risk associated with their lending and trading portfolios.

Abstract

In its interim report, Canada's Expert Panel on Sustainable Finance proposed that, for the purposes of discussion, sustainable finance be defined as “capital flows (as reflected in lending and investment), risk management activities (such as insurance and risk assessment), and financial processes (including disclosures, valuations, and oversight) that assimilate environmental and social factors as a means of promoting sustainable economic growth and the long-term stability of the financial system.”

This is aligned with the EU's definition, whereby the term “sustainable finance” generally refers to the process of taking due account of environmental and social considerations in investment decision making, leading to increased investments in longer-term and sustainable activities. More specifically, these environmental considerations refer to climate change mitigation and adaptation, as well as the environment more broadly and related risks (e.g., natural disasters) (European Commission, 2018c).

In order to mainstream and normalize sustainable investment that provides financial, environmental and social returns, governments and the private sector must work together to promote trustful and efficient capital-allocation decisions based on the accurate and timely disclosure of material risks to capital.

By outlining a three-year plan for relevant stakeholders, this report first makes the case that it is possible for Canada to commit to updating laws and standards and, through these minor changes, to make climate-related financial disclosure mandatory. Along with development of governance mechanisms aligned with this disclosure, it will follow that regulatory certainty can underpin the private sector investments needed for training and/or hiring of people to prepare such disclosure and updated financial statements and to ensure that mainstream reports are assured by auditors. Doing so will contribute to economic productivity by widespread reporting of readiness to adapt to climate-related risk and of carbon and energy productivity, which in turn will trigger private capital flows from investors seeking highest risk-adjusted returns.



In support of this recommendation, this report then proposes legislative, non-legislative and standards-setting updates at the international, federal and provincial levels. This report also contains current legal and statutory precedents in G7 and G20 countries to support these recommendations.

With foreign direct investment flows into Canada in mind, this report makes the case for Canada's finance policy-makers to closely follow international efforts to assess the sustainability of economic activities through taxonomies and frameworks. These frameworks are now being developed to guide the formulation of market benchmarks as well as standards for the labelling of financial products.

Finally, the report introduces the work of the G20's Eminent Persons Group and the pillars it proposes to safeguard the stability of the global financial and monetary system. It does so in the context of tail risks that may exist within Canadian capital markets. In response to the first report of the G20 Eminent Persons Group, and in the context of most climate science, as published by the International Panel on Climate Change on 1.5°C of warming, this report proposes a rationale for Canadian financial sector supervisors and regulators to be engaged in international efforts to share best practices, to contribute to the development of environment and climate risk management in the financial system and to mainstream sustainable finance.



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Acronyms and Abbreviations

2P	proved and probable
CETA	Canada-European Union Comprehensive Economic and Trade Agreement
CPA Canada	Chartered Professional Accountants of Canada
CPD	continuous professional development
CPPIB	Canadian Pension Plan Investment Board
CSA	Canadian Securities Administrators
EPG	Eminent Persons Group
EPSF	Expert Panel on Sustainable Finance
ESG	environmental, social and governance
EU	European Union
FRC	Financial Reporting Council
FSB	Financial Stability Board
G20	Group of 20
GHG	greenhouse gas
HLEG	High-Level Expert Group on Sustainable Finance
IASB	International Accounting Standards Board
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
IIROC	Investment Industry Regulatory Organization of Canada
IPCC	Intergovernmental Panel on Climate Change
OECD	Organisation for Economic Co-operation and Development
OSFI	Office of the Superintendent of Financial Institutions
SEC	US Securities and Exchange Commission
SFP	Sustainable Finance Plan
SME	small and medium-sized enterprises
SWF	sovereign wealth fund
TCFD	Task Force on Climate-Related Financial Disclosures
TSX	Toronto Stock Exchange



1.0 Introduction

Neither Canada nor the world can reach the goals laid out in the Paris Agreement without significant investments of capital from the private sector.

A low-carbon, climate-resilient economy requires large amounts of capital investment and risk management across different sectors, including renewable energy, transport, building energy efficiency, water and agriculture. This will take place around the world in a wide variety of market circumstances. This major reorientation of investment can be achieved only through a parallel shift in the way the financial ecosystem mobilizes and allocates capital. Similarly, the economic damage from emerging climate risks can be managed only if the ecosystem improves the way it pools and transfers risks. While the public sector has a vital role to play, the private sector will provide the bulk of the financing and insurance driving the transition. Underlying this low-carbon, climate-resilient shift in the finance ecosystem will be fundamental changes to the determinants of profitability and asset values, and the resulting price signals to the market. These will arise from a combination of government action, technological disruptions and other factors. (United Nations Secretary General, 2015)

There are multiple initiatives underway to assess the capacity of corporations and financial institutions to disclose climate-related risk to investors in mainstream financial reports. Canada is clearly no exception: in April 2018 the Canadian Securities Administrators (CSA) published its own assessment (CSA, 2018), and this was followed by the work of the four-person Expert Panel on Sustainable Finance (EPSF) with a mandate from the Minister of Environment and Climate Change and the Minister of Finance of the Government of Canada (see Box 1).

The list of international reports soon to be published on the adequacy of climate-related disclosure is substantial. It includes France's Article 173 implementation report, the EU Non-Financial Reporting Directive report by the Climate Disclosure Standards Board, the EU Commission Non-Financial Reporting fitness check and China's environmental risk report pilot in Guangdong.¹ Results from the earliest of these international regulatory "fitness checks"—the Task Force on Climate-Related Financial Disclosures (TCFD) *2018 Status Report*, which assesses the 2017 disclosures of 1,800 companies—suggest that voluntary standards have not resulted in material information related to climate risk being disclosed in financial filings and that, as a result, risks are not properly understood or priced. What is more, information on how well business strategies will hold up under different climate-related scenarios is limited.

At their meeting on September 5, 2015, G20 finance ministers and central bankers asked the Financial Stability Board (FSB) to consider climate risk in the financial system. This request emerged from many years of support from civil society groups whose work rests on the scientific foundations established by the Intergovernmental Panel on Climate Change (IPCC) (Bak, 2017b, October 3).

The FSB's role, as recommended by finance ministers and central bank leaders, was reflected in this pivotal statement from the Antalya Leaders' Declaration: "We ask the FSB to continue to engage with public- and private-sector participants on how the financial sector can take account of climate change risks" (G20, 2015).

Shortly after receiving this mandate, Mark Carney, then chair of the FSB and the governor of the Bank of England, gave a landmark speech at Lloyds of London at which he said:

We don't need an army of actuaries to know that the catastrophic impacts of climate change will be felt, beyond the traditional horizons of most actors. It will impose costs on the future generations that the current

¹ A summary of these international assessments appears in Annex A.



one has little direct incentive to fix. This means beyond the business cycle; the political cycle and the horizon of technocratic authorities, like central banks, who are bound by their mandates. (Carney, 2015)

These international assessments echo those of the CSA. In Canada, disclosure of climate risk remains insufficient in many cases and nonexistent in others. Moreover, developing and disclosing how climate scenarios affect a company's strategy, as recommended by the TCFD, is inconsistent with current Canadian regulations governing mainstream continuous corporate disclosure. As the CSA wrote in its Staff Notice 51-354 *Report on Climate Change-Related Disclosure Project*, “[TCFD recommendations] diverge significantly from the disclosure requirements of Canadian securities laws by advocating the use of scenario analysis to assess the resilience of the organization's business strategy in the face of climate change and the transition to a lower-carbon economy.”

Ensuring that laws are consistent with these recommendations is of fundamental importance, as the CSA initiative to assess the TCFD's recommendations has specifically pointed out. Simply put, these assessments, in Canada and globally, have found that the process of translating climate scenarios and the ensuing risks and opportunities into impacts on cashflows emanating from assets and a discussion of strategic plans in financial statements will require new capacity on the part of preparers and assurers of financial statements and those charged with governance of issuing these.

Companies and investors will require certainty and guidance as foundations for greater reporting on climate-related risk and opportunity. In order to ensure greater certainty for the costs associated with hiring and/or building up the capacity to disclose, hitherto voluntary climate-related disclosure must be made mandatory. Providing this certainty to issuers will deliver policy foundations for investors who will use climate-related disclosure to make investment decisions. Not providing this certainty will result in delays in building the capacity for climate-related disclosure in mainstream financial reports and the capacity for capital markets through long-term investors and analysts to act on this disclosure.

This report proposes a plan for the establishment of mandatory climate-related disclosure in Canada by 2021. Such regulatory certainty will enable the private sector to invest in the people and processes needed to model the impact of innovation on emissions and, in time, to assess and report on business activities in light of climate scenarios. On the basis of these investments in human capacity and processes, corporations and financial institutions will then be in a position to report on and deliver governance, strategy, risk management and metrics, and targets related to climate risk and opportunity as recommended by the TCFD. What is more, doing so will be consistent with legal frameworks requiring that financial statements be a true and fair account of a company's capital as well as the profits from which dividends may be paid (Ford & Marriage, 2018).

Going forward, managers in companies and financial institutions will need to translate 2°C and 1.5°C climate scenarios, as stipulated by the Paris Agreement, into company strategy. This will include assessing the impact of climate change scenarios on company assets and the degree to which they may be impaired.

The financial models that companies use as the basis for proactive and prudent financial reporting will, in time, need to reflect climate scenarios, including both the cost of adapting to climate change and the implications of carbon constraints on company assets. With these results in hand, company managers will then translate these assessments first into financial accounts and reporting, and *then* into plans to invest in sustainable business activities. It bears remembering that the evidence needed to track micro-prudential risk related to climate change will depend on this reporting, and we would argue that this should not be left to voluntary processes.

Norway, whose economy relies on fossil fuel exports, has recognized the need for both public and private sector entities to include climate scenarios in their strategies and plans. In October 2018, Norway's then Minister of Environment (Conservative) stated: “Given the energy and transport revolutions, fossil energy resources will be of less value over time.... The energy transition to renewables is going faster than anyone thought. And almost any scenario is being out-competed by reality” (Climate Action, 2017). In a similar vein, Norway's Government Pension



Fund Global led a group of six sovereign wealth funds (SWFs) in the publication of the *One Planet SWF Framework*. Among its precepts, the framework argued that SWFs “should identify, assess and manage portfolio risks generated by the expected transition to a low-emissions economy and from the potential physical impacts of climate change” (Sovereign Wealth Funds, 2018).

Long-term investors of our savings, including through public and private pension plans and through insurance companies, are paying attention to both the cost of the damage wrought by climate change and the cost of not mitigating emissions. In a report commissioned by Aviva, a Global Systemically Important Insurer, the net present value of losses due to climate change is USD 4.2 trillion from now to 2100 on the global stock of management assets of USD 143 trillion (The Economist, 2015). To avoid such outcomes, long-term investors, bound by fiduciary duty, are giving consideration to how climate scenarios will affect assets. For example, recent reports point to an oil supply curve (2018–2040) with production in the range of USD 18–35 per barrel being the limit to stay within the Paris Agreement goals of 1.5°C and 2°C (Masnadi et al., 2018). This is in striking contrast with European oil and gas companies using assumptions of long-term oil prices of USD 70–80 a barrel rising 2 per cent a year to USD 127–145 by 2050 (The Economist, 2018b). The ability to model the business implications of future climate scenarios is clearly still only emerging.

Within this domestic and international context, results from the climate-related disclosure fitness checks may provide clarity on the degree to which regulatory certainty through mandatory disclosure for companies and financial institutions is needed. Mandatory disclosure is one way to make the business case for companies and financial institutions to hire and/or train the people needed to assess climate-related risk. This is also consistent with calls from global private sector coalitions. For example, the members of the Investor Agenda—345 investors representing USD 30 trillion in assets under management—called for action in a letter to G7 leaders in September 2018 (The Investor Agenda, 2018). Similarly, in a letter addressed to G7 leaders by We Mean Business (2018), businesses themselves called for support for the TCFD through regulation.

To facilitate the process of translating climate disclosure in mainstream financial reports into law, this report identifies which Canadian laws and statutes could be updated to require mandatory disclosure of physical and transition risks that have already occurred, or may in the future, due to climate change. As shown in Annex B, each of these recommendations is supported by precedents from the G7 and G20 member countries. In the context of the work being done by Canada’s EPSF, these recommendations reflect current climate science, a recent survey of proved and probable reserves of Canadian oil and gas, the value that capital markets have assigned to Canadian equities in the oil and gas sectors, and the relative importance of banks in Canadian private equity markets.

The report contains the following sections:

- Why Climate Disclosure as a Foundation for Sustainable Finance?
- The Emergence of Sustainable Finance Markets Globally and in Canada
- A Three-Year Plan for Climate-Related Financial Disclosure to Create Markets for Sustainable Finance
- Assessing the Sustainability of Economic Activity as a Foundation for Sustainable Finance (EU Case Study)
- Canada, Climate Change Science and Efforts to Strengthen Surveillance and Risk Identification in the Global Financial System



Box 1. Canada's Federal Expert Panel on Sustainable Finance

On May 28, 2018, following a number of private and public sector initiatives in recent years, the Minister of Environment and Climate Change and the Minister of Finance of the Government of Canada established a four-person EPSF to conduct the following work:

Consult with Canada's financial market participants on issues related to sustainable finance, including climate-related disclosures.

Work with the private sector and the federal government, in collaboration with securities commissions, to promote awareness among participants in the Canadian financial market of climate-related risks and to advance the recommendations of the TCFD.

Where feasible, engage industry participants in a dialogue on private-sector-led approaches and collaboration or through private-public leadership.

Draft a report to ministers outlining:

- Global trends in sustainable finance, including climate-related risk disclosure
- Roles and responsibilities for sustainable finance in Canada
- Opportunities and challenges relating to sustainable finance and climate-related risk disclosure in Canada
- Recommendations for potential next steps the Government of Canada may wish to consider within its area of jurisdiction

This report is intended to provide input to the third and fourth elements of the EPSF's mandate. To this end, references to global trends are expressed principally as legal and policy precedents that Canada may consider. With regards to the second element of the EPSF's mandate, this report's recommendations are made with reference to specific institutions and the periodic review processes these institutions are bound by.

To address the opportunities and challenges related to sustainable finance and climate-related risk disclosure in Canada, this report argues for updating existing legislation. In addition, where needed, it advocates enacting new laws to provide legal certainty for companies and financial institutions that will need to invest in building new capacity of people to assess current and potential future business activities, in terms of climate risk and opportunities, to develop strategies to address these and attract capital to prosecute these strategies.

In its brief to the EPSF, the Government of Canada emphasized that the EPSF's mandate should be viewed in the context of the Pan-Canadian Framework on Clean Growth and Climate's carbon-pricing regime, which could serve as a mechanism to change risk-reward profiles for investors to increase incentives. The Government of Canada also expressed the view that the EPSF should address market failures that make it difficult for investors to value climate risks associated with projects and assets, which in turn leads to misallocation of capital.

On October 24, the EPSF released its *Interim Report*, which will serve as the basis for broader consultation on financial markets and products for sustainable growth as well the foundational elements to enable these.



2.0 Why Climate Disclosure as a Foundation for Sustainable Finance?

One of the most challenging tasks faced by company managers preparing to disclose climate-related risk to investors, savers and regulators is translating climate risk and resilience plans into capital budgets and then including these in mainstream financial reports on which capital markets can act.

In Figure 1, the requirement to disclose climate-related risk triggers an assessment of business activities and the greenhouse gas (GHG) emissions of the assets that underpin them. This assessment may form the basis for management’s discussion of strategic plans within mainstream financial reports, as well as any relevant discussion of impairment of company assets. These strategic plans and discussions may be disclosed to investors as well as to market analysts, rating agencies and providers of market benchmarks, who themselves may assess financial performance and the sustainability of business activities, as foundations of efficient capital markets.

Translating climate scenarios into the strategic plans of corporations and financial institutions requires that company managers consider both the cost of adapting to climate change and the impact that company business models and assets have on climate change and carbon budgets. The next section of this report addresses this second challenge as a basis for renewed business plans, particularly in sectors such as oil and gas, which are critical to the Canadian economy.

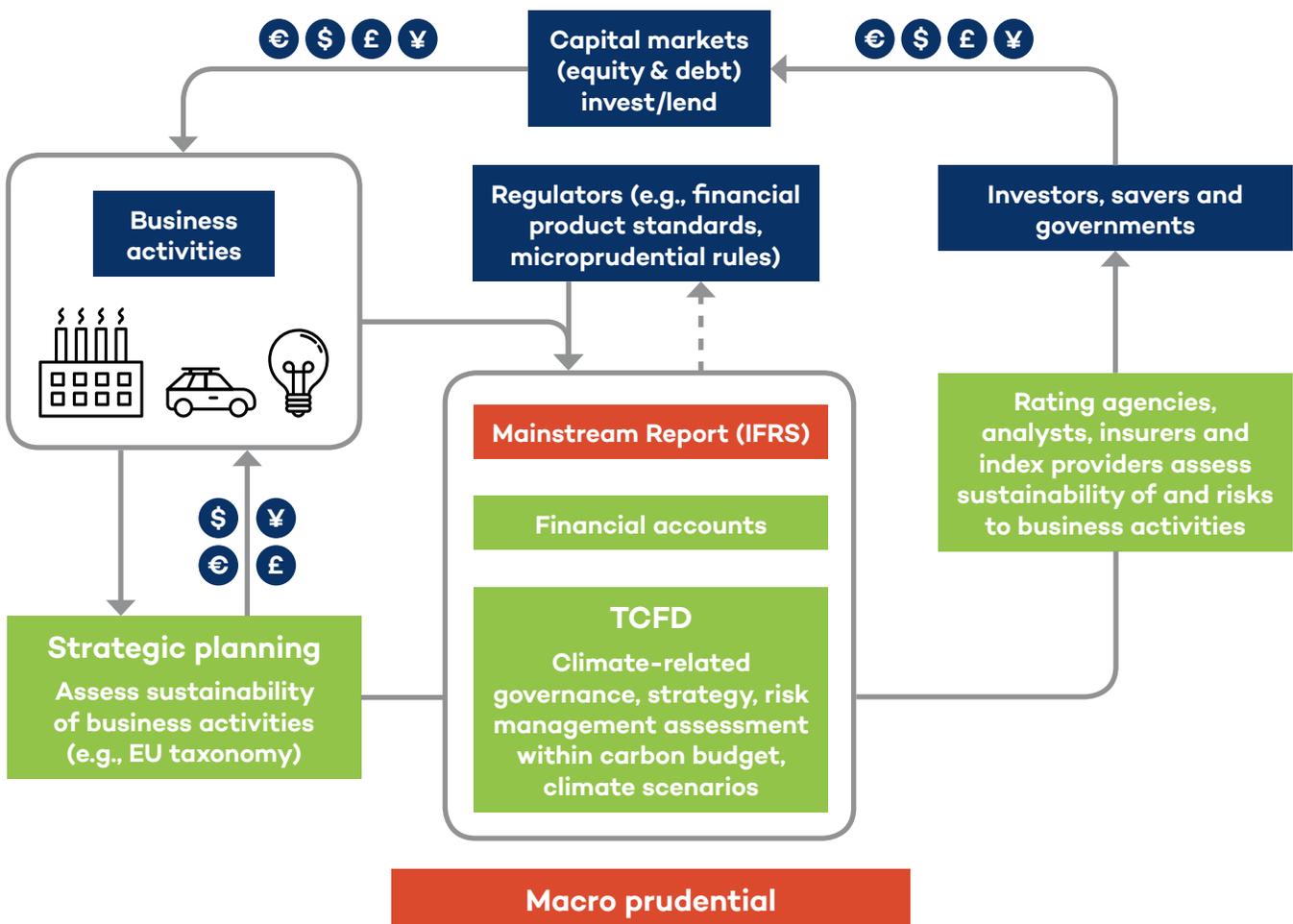


Figure 1. Impact of climate disclosure on sustainable finance



3.0 The Emergence of Sustainable Finance Markets Globally and in Canada

Every year brings a host of new reports on the opportunities for sustainable finance. In the most recent report from the New Climate Economy (2018), the impact of bold climate action is estimated to present a direct economic gain of USD 26 trillion between now and 2030 compared to business as usual.

Elsewhere, the International Finance Corporation (IFC) pegged the current market for renewable energy at USD 297 billion, and it estimated the potential market for new investments in wind and solar to be USD 6 trillion from now to 2040. As an example of private sector leadership, the demand for renewable energy is backed up by 140 private companies committed to procuring 100 per cent of their electricity from renewable sources. Similarly, the IFC estimates the potential annual market for low-carbon transportation to be USD 288 billion in transportation equipment; this figure is based on the Nationally Determined Contributions of 82 countries with savings of USD 8 trillion in fuel costs on the table by 2050 arising from switching vehicle efficiency and fuel switching. The IFC estimates the potential annual market for energy storage today to be USD 2.5 billion, which is based on the Nationally Determined Contributions of 31 countries with the potential to reach USD 23 billion by 2025 and energy-efficiency annual markets needing to double from USD 388 billion today to achieve global climate objectives (IFC, 2017).

But the Canadian economy has a particular make up. Canada's largest publicly traded companies have a market capitalization of USD 2,527 billion, of which USD 778 billion is made up of financial institutions, USD 436 billion of oil and gas companies and USD 321 billion of other resource ventures (TSX, 2018). Oil and gas is the second most important sector in Canadian capital markets, representing 17 per cent of total capitalization, with Canada's financial sector—itsself 31 per cent of total market capitalization—a key lender to the sector.

Canadian companies have an opportunity to scale up investment in decarbonization. According to Carney (2018), the private sector must quadruple its current annual rate of investment in sustainable energy and infrastructure if it is to attain the goals laid out in the Paris Agreement. Work on establishing scenarios to underpin an orderly and just transition pathway for the oil and gas sector is already underway by the International Energy Agency and others (International Energy Agency & International Renewable Energy Agency, 2017). Oil and gas companies are collaborating to participate in the transition through such efforts as the Oil and Gas Climate Initiative. Indeed, some have already announced long-term decarbonization targets (ENI, 2018; Vaughan, 2017).

These efforts have resulted in some progress in sustainable finance terms. Between 2008 and 2017, the market for green bonds grew, from USD 500 million to USD 163 billion (The Economist, 2018a). But in Canada, if we are to align oil and gas company reserves within the global carbon budget, sector leaders will need to access and deploy significant capital to decarbonize their operations and invest in new assets while delivering profits to investors. The profitable decarbonization of business models could position oil and gas companies, including Canadian oil and gas companies, as global energy leaders.

3.1 Clean Technology Firms Do Not Yet Have Markets

From an opportunity perspective, the global low-carbon economy is growing, and it continues to offer opportunities for investment. With a compound annual growth rate of 4 per cent from 2008 to 2015, global trade in clean technology as measured by exports doubled during this period, to more than USD 1.15 trillion.



At the same time, there are market failures in the low-carbon and sustainable economy. Evidence shows that Canada's array of low-carbon innovation policies can seed a vast nursery of potential trees, and yet few strong oaks have yet emerged. When surveyed, two thirds of all firms identified capital as the number one barrier to their growth, with more than half of all firms citing as a barrier access to talent to raise this capital and venture capital. The question is ... why? (Bak, 2017b).

To answer this question, we might imagine emerging firms in a sports league. Within this league we should picture, on the one hand, a newly established and very talented team of millennials playing on a field not yet served by lighting, a stadium or a transportation system for spectators. On the other hand, their near-to-retirement opponents, made up of incumbent industries, are playing on a covered and level field, well-lit and well served by public transportation and other infrastructure.

Two thirds of Canadian clean technology firms are engaged in commercializing their products and are looking for the markets where they can both improve environmental performance and also increase their customer's bottom line. But there are insufficient profits in this emerging sector, and therefore a lack of opportunity for investors to engage.

There are at least three reasons that clean technology firms in Canada are unprofitable.

First, emerging firms are struggling to operate in the low-carbon economy, where prices for the commodities they replace—including energy derived from oil and gas—are volatile and where prices for the pollution they address—such as carbon—remain low and are also subject to volatility. What is more, Canadian tax expenditures in the form of subsidies to fossil fuels, accounted for under the most conservative method, are USD 3.3 billion in direct fiscal subsidies and USD 3 billion in publicly funded loans (Touchette & Gass, 2018).² These figures are of the same order as the negative retained earnings shown in Figure 2 accumulated by a cohort of Canadian firms whose business models are based on low- and zero-carbon innovations.

Second, regulators assume low innovation in setting environmental performance standards. Canada does not have accountability mechanisms requiring that environmental regulation, whether federal or provincial, stipulate the use of best-available technology as the benchmark to ensure the adequacy of existing environmental performance standards. This means that when methane regulations are established, for example, there is no requirement to ensure that present and future regulatory standards reflect what is made possible by innovation. Also, where permits and approvals are required to implement new technologies, delays are lengthy because authorities grapple with assessing new innovations based on precautionary principles and existing legal frameworks.

Third, public infrastructure investments often predetermine how electricity, mobility, water and wastewater and other public goods should be delivered, and, when procurement criteria stipulate how solutions should be delivered, often tilt the playing field away from innovation and toward legacy solutions.

Meeting environmental protection goals, including Canada's commitment to the Paris Agreement, will require investment in infrastructure, and innovation can play a role—in terms of both improving performance and reducing costs. But today, Canada has no mechanisms to stimulate a solutions-based approach to procurement that would stimulate adoption of best-available technology.

The result is a market failure that has caused negative retained earnings of USD 3.6 billion in aggregate for a cohort of 714 Canadian clean technology firms. Between 2013 and 2015, these negative returns accelerated at the rate of USD 500 million per year.³

² For context, Alberta estimates that its carbon levy will raise CAD 1.4 billion in 2018/19 (see Government of Alberta, 2018). The currently available figures on Alberta's fossil fuel subsidies are for an average of CAD 1.16 billion per year in FY 2013/14 and 2014/15 (IISD, n.d.)

³ In Section 5, Figure 5 presents another major headwind for the low-carbon economy in Canada—that of the high, and still rising, cost of borrowing for all Canadian small and medium-sized enterprises compared to their U.S. and Organisation for Economic Co-operation and Development counterparts.

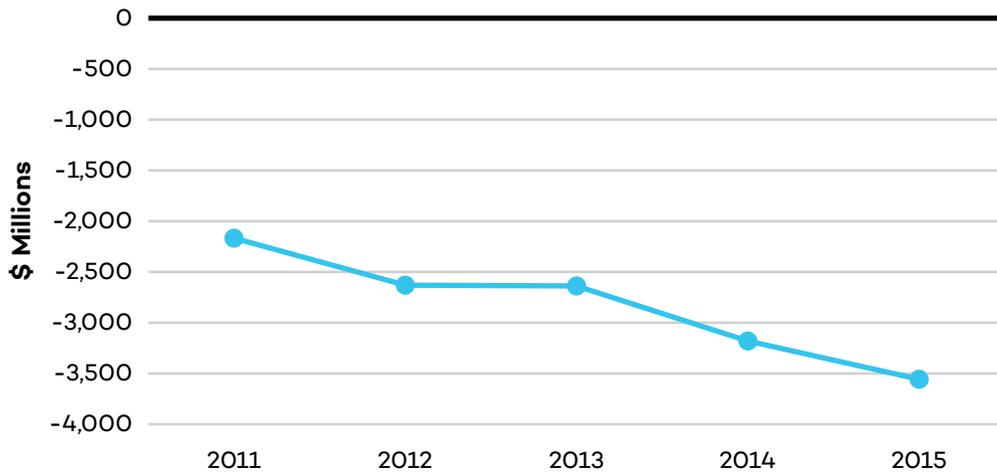


Figure 2. Retained earnings, Canadian clean technology firms (2011–15)

Source: Statistics Canada data, as summarized in Analytica Advisors, 2017.

Climate-related financial disclosure, including of adaptation and emissions plans, and the ensuing sustainable finance will contribute to creating real markets for emerging firms whose business models are based on innovation. This will have the knock-on effect of improving economic and energy productivity in Canada.



4.0 A Three-Year Plan for Climate-Related Financial Disclosure to Create Markets for Sustainable Finance

As an advanced economy, Canada has a mature regulatory and legal framework and strong rule of law. In addition, the country's financial system has withstood the tests of the 2007/08 global recession. However, Canada has faced its share of financial crises: these include the consequences of high and variable inflation in the 1970s; the failure of two Canadian banks, with two more saved only by merging with larger institutions, in the 1980s; and our own sovereign debt crisis in the 1990s. Yes, Canada's inflation policies have served it well, as has its financial supervision policies, but climate-related risk in the Canadian financial system may not unwind gracefully. As Carney said in 2015 at Lloyds of London: "The horizon for monetary policy extends out to two to three years. For financial stability it is typically a bit longer, but typically only to the outer boundaries of the credit cycle—about a decade. In other words, once climate change becomes a defining issue for financial stability, it may already be too late" (Carney, 2015).

What is more, with the United States' decision to leave the Paris Agreement, we have seen a breakdown of the G20 consensus on climate-related financial risk disclosure. This includes an absence of active mechanisms such as G20 Finance Deputy Working Groups to translate into G20 finance department and central bank policy, as well as the findings of status reports to the FSB by the TCFD.⁴ This means that Canada must be extra vigilant as regards its own situation. Recent studies point to accumulating leverage in the U.S. fracking industry, with USD 200 billion in net debt in 2015 (McLean, 2018). The TCFD's recommendations surrounding the disclosure of climate-related risks by financial institutions, including banks and pension funds, is a matter of material consequence to the efficient operation of financial markets and a question that Canada must consider independently (Bak, 2017a).

To stimulate the transition to a zero-carbon economy by the second half of this century, the Paris Agreement's 195 signatories have committed to "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development" (United Nations, 2015).

All advanced economies, with the notable exception of the United States under President Donald Trump, are examining the gaps, inconsistencies and lack of clarity hampering the flow of capital needed to support economic growth while reducing the pressure on the environment and society, as well as addressing GHG emissions and tackling pollution. In identifying recommendations to address these shortfalls, examples from the G7 and G20, where available, are provided in Annex B.

There is an emerging body of knowledge on how TCFD recommendations can be made mandatory for issuers and financial institutions within the existing laws of the G20 member countries. This section proposes a plan for mandatory TCFD implementation in Canada. Figure 3 contains a summary of the recommendations that follow. This section is later summarized in Figure 5, which details the areas of consideration for each institution per year, and which distinguishes legislative, non-legislative and standard-setting activities under the same framework of filling in the gaps, adding clarity and addressing inconsistencies in the financial system.

⁴ At their meeting on September 5, 2015, G20 finance ministers and central bankers asked the FSB to consider the risks posed to the financial system by climate change. They requested in the Annex of their Communiqué that the FSB "convene public- and private-sector participants to review how the financial sector can take account of climate-related issues" (G20 Finance Ministers and Central Bank Governor, 2015). In the Annex of the G20 Leaders' Communiqué, the FSB's role was reflected in the following way: "We ask the FSB to continue to engage with public- and private- sector participants on how the financial sector can take account of climate change risks" (G20 Leaders, 2015)



	2019	2020	2021
Filling in the gaps in the financial system	TSX joins the Sustainable Stock Exchange Initiative and includes TCFD in its “Primer for Environmental and Social Disclosure”	National Instrument 51-102, 58-101 and CSA Staff Notice 51-333 are updated to reflect the TCFD recommendations	
		TSX updates its company listing manual to include the TCFD recommendations	Environment and Climate Change Canada legislates on climate-adaptation reporting by all federal public entities
	The Canadian Business Corporation Act-Part XIV Financial Disclosure is updated with requirements for financial statements to include environmental disclosures		Natural Resources Canada legislates on climate-adaptation reporting by companies in natural resources sectors
Adding clarity in the financial system	In its 2019 Financial System Review, the Bank of Canada includes mainstreaming disclosure of climate-related risks and opportunities		The Department of Finance announces the degree to which the TCFD is consistent with its long-term approach to the financial sector
	The OSFI joins the Network of Central Banks and Supervisory Authorities for the Greening of the Financial System	The OSFI sends ESG information requests to its institutions and asks its Chief Actuary to produce a climate risk assessment of the Canada Pension Plan investment board	The OSFI's Chief Actuary releases its first report on climate risks for the Canada Pension Plan Investment Board
	The members of the CSA request CPD modules for corporate directors include TCFD, and conduct a review of their members' supervisory practices for climate disclosures		The CSA supervises the reporting by financial institutions on TCFD & ESG
Addressing inconsistencies in the financial system	CPA Canada creates a committee on climate disclosure and assurance to report to IASB	The committee issues its first report to IASB as well as to country equivalents of CPA Canada	CPA Canada responds to guidance from the IASB on disclosure of climate scenarios and ESG factors
	IIROC asks the CSI for a proposal to develop & measure ESG in financial statements		

Figure 3. Three-year plan for mandatory climate disclosure as a foundation for sustainable finance (Canada)

Source: Author

The following section sets out specific recommendations, including both timelines and actors, for the minor changes to laws and statutes that would provide regulatory certainty for issuers and investors through mandatory disclosure of climate-related risk.



4.1 Recommendations and Timelines for Mandatory Disclosure of Climate-Related Risk by 2021⁵

4.1.1 2019

FILLING GAPS IN THE CANADIAN FINANCIAL SYSTEM

Federal Law:

Consultations are conducted on modernizing the federal Canadian Business Corporations Act – Part XIV Financial Disclosure to require companies to include certain climate-change-related disclosures and environmental reporting in their annual reports (see, for example, the 2013 and 2016 updates to the UK Companies Act).

Environment and Climate Change Canada proposes legislation for regular reporting on the assessment and mitigation of climate-related physical risk by all federal public entities (see, for example, the third round of legislative updating in the United Kingdom [Client Earth, 2017]).

Natural Resources Canada does the same for climate-related physical risk and adaptation in natural resources sectors.

Provincial Securities Exchanges:

The Toronto Stock Exchange (TSX) joins the UN Sustainable Stock Exchanges Initiative and updates *A Primer for Environmental & Social Disclosure* to include TCFD recommendations as a listing standard.

ADDING CLARITY IN THE CANADIAN FINANCIAL SYSTEM

The Bank of Canada:

The Bank of Canada clarifies the degree to which mainstreaming disclosure of climate-related risks and opportunities, including through the TCFD recommendations, is relevant to the 2019 *Financial System Review*.

The Office of the Superintendent of Financial Institutions:

The Office of the Superintendent of Financial Institutions (OSFI) participates in the supervision work undertaken by the Network of Central Banks and Supervisory Authorities for the Greening of the Financial System.⁶

Finance Canada:

In its preparatory documentation for consultations with the financial sector, the Finance Department outlines the role of TCFD recommendations in the long-term approach to the financial sector (deadline for revision of Finance Canada's report on the long-term approach to the financial sector: March 2019).

Canadian Securities Administrators:

The members of the Canadian Securities Administrators (CSA) welcome the review by the Investment Industry Regulatory Organization of Canada (IIROC) of baseline credentials and continuous professional development

⁵ Annex B, page 30, provides G7 and G20 examples to support of each of the following recommendations.

⁶ About the Office of the Superintendent of Financial Institutions (OSFI): OSFI is an independent agency of the Government of Canada, established in 1987 to contribute to the safety and soundness of the Canadian financial system. OSFI supervises and regulates federally registered banks and insurers, trust and loan companies, as well as private pension plans subject to federal oversight. The Central Banks and Supervisory Authorities Network for Greening the Financial System has identified three programs of work, the first of which is Microprudential/Supervision. Areas being considered under this program of work, whose chair is Ma Jun (People's Bank of China), include climate and information disclosure, corporate governance structures for sustainability issues, and scenario-based risk analyses. See: <https://www.banque-france.fr/sites/default/files/mandate-ws1.pdf>



(CPD) for proficiency of employees of securities dealers on TCFD recommendations; these include strategy and climate scenarios as well as environmental, social and governance (ESG) factors.

The members of the CSA conduct a review of their members' current supervisory practices for climate-related financial disclosures.

CPA Canada:

CPA Canada conducts a CPD review for entities accrediting corporate directors, chief financial officers, accounting professionals and auditors on the degree to which these reflect TCFD recommendations; this includes governance processes that address Strategy, including climate scenarios, Risk management, and Metrics and Targets.

ADDRESSING INCONSISTENCIES IN THE CANADIAN FINANCIAL SYSTEM

CPA Canada and the International Accounting Standards Board:

CPA Canada, along with members from other willing countries, strikes a new emerging issues committee on disclosure and assurance of climate scenarios and ESG factors within financial statements to report to the International Accounting Standards Board (IASB).

Investment Industries Regulatory Organization of Canada:

IIROC engages with the Canadian Securities Institute to propose the development of a baseline for knowledge and proficiency needed to interpret climate scenarios and ESG factors within financial statements. The CFA Institute may be invited to develop professional-development materials accordingly.

4.1.2 2020

FILLING IN THE GAPS IN THE CANADIAN FINANCIAL SYSTEM

Federal Law:

The federal Canadian Business Corporations Act – Part XIV Financial Disclosure is updated with requirements for companies' annual financial statements to include certain climate-change-related and environmental disclosures (see Annex B for examples of the 2013 and 2016 updates to the UK Companies Act).

Provincial Regulations:

Following the publication of additional guidance and supervision on TCFD recommendations, the CSA conducts consultations on the following two national instruments administered by the CSA to reflect TCFD recommendations:

National Instrument 51-102 *Continuous Disclosure Obligations*

National Instrument 58-101 *Disclosure of Corporate Governance Practices*

The CSA also conducts an internal review of its members on the potential to update the CSA Staff Notice to reflect TCFD recommendations:

CSA Staff Notice 51-333 *Environmental Reporting Guidance*

Provincial Securities Exchanges:

The TSX updates its company listings manual to include TCFD recommendations for financial disclosures of listed companies.



ADDING CLARITY IN THE CANADIAN FINANCIAL SYSTEM

The Bank of Canada:

In its *Financial System Review*, the Bank of Canada includes a chapter on mainstreaming disclosure of climate-related risks and opportunities, including through TCFD recommendations.

The Office of the Superintendent of Financial Institutions:

The OSFI asks all institutions under its remit the following questions: What is your understanding of ESG within your mandate? How do the recommendations of the TCFD on disclosure by financial institutions apply to you?

The OSFI requests that its Chief Actuary produce a bi-annual assessment of the climate-related financial risk to the fully funded status of the Canadian Pension Plan Investment Board (CPPIB).

The Canadian Securities Administrators:

The members of the CSA request an accredited entity, such as the IIROC or its delegated authority,⁷ the Canadian Securities Institute, to ensure that training modules to ensure proficiency of dealers, investment advisors and brokers on TCFD recommendations, including strategy and climate scenarios as well as ESG factors.

As part of building an enabling environment, the members of the CSA also request that the IIROC or the Canadian Securities Institute provide recommendations on prospectus criteria for new financial products such as green bonds and the securitization of green infrastructure.

The members of the CSA request that entities accrediting corporate directors implement CPD modules to reflect TCFD recommendations, including governance processes that address Strategy, including climate scenarios, Risk management as well as Metrics and Targets.

The members of the CSA complete their review of their members' current supervisory practices for climate-related financial disclosures.

Following public consultation, members of the CSA and IIROC publish guidance or amendments to a national instrument governing the incorporation of green bond certifications into the securitization of debt.

ADDRESSING INCONSISTENCIES IN THE CANADIAN FINANCIAL SYSTEM

CPA Canada and the International Accounting Standards Board:

The emerging issues committee on climate-related financial risk, started in 2019, brings forward its report to the IASB and the IFRS Foundation, as well as to the country equivalents of CPA Canada, on disclosure of climate-change-related information (such as scenarios and ESG factors) within corporate annual reports.

4.1.3 2021

FILLING IN THE GAPS IN THE CANADIAN FINANCIAL SYSTEM

Federal Law:

Environment and Climate Change Canada brings forward legislation for regular climate-adaptation reporting by all federal public entities.

⁷ IIROC: <http://www.iiroc.ca/about/Pages/Board-of-Directors.aspx>



Natural Resources Canada brings forward legislation for regular climate-adaptation reporting by companies in natural resources sectors.

Provincial Regulations:

Following the publication of updated guidance and supervision on TCFD recommendations, the following two national instruments administered by the CSA are updated to reflect TCFD recommendations:

National Instrument 51-102 *Continuous Disclosure Obligations*

National Instrument 58-101 *Disclosure of Corporate Governance Practices*

At the end of the internal review process, the following CSA Staff Notice is updated to reflect TCFD recommendations:

CSA Staff Notice 51-333 *Environmental Reporting Guidance* (for an example see the 2006 update to the UK Companies Act)

ADDING CLARITY IN THE CANADIAN FINANCIAL SYSTEM

Finance Canada:

Following consultations on its long-term approach to the financial sector, the Finance Department publishes its conclusions on the degree to which TCFD recommendations are consistent with its long-term approach to the financial sector.

Office of the Superintendent of Financial Institutions:

The OSFI's Chief Actuary delivers its first report to the OSFI on the risk of climate adaptation to the fully funded status of the CPPIB.

Canadian Securities Administrators:

Following the OSFI's consultation with the institutions under its remit, the CSA members respond on implication for supervision of reporting by Canadian financial institutions on TCFD recommendations and on ESG factors.

ADDRESSING INCONSISTENCIES IN THE CANADIAN FINANCIAL SYSTEM

Canadian Securities Administrators:

The members of the CSA harmonize best practices for the supervision of climate-related financial disclosures.

CPA Canada and International Accounting Standards Board:

CPA Canada responds to guidance from the IASB and/or the IFRS Foundation on disclosure of climate scenarios and ESG factors within annual reports.

Table 1 sets out each of the actions for the above three-year plan.

**Table 1. Sustainable finance road map legislative, non-legislative and standard-setting**

	Canadian Business Corporations Act	Environment and Climate Change Canada	Natural Resources Canada	Toronto Stock Exchange
2019	Consultation: Canadian Business Corporations Act – part XIV Financial Disclosure to require companies to include certain climate-change-related disclosures and environmental reporting in their annual reports	Environment and Climate Change Canada plans legislation for regular reporting on assessment and mitigation of climate-related physical risk by all federal public entities	Natural Resources Canada plans legislation for regular reporting on assessment and mitigation of climate-related physical risk by companies in natural resources sectors	Toronto Stock Exchange (TSX) joins the UN Sustainable Stock Exchanges Initiative and updates <i>A Primer for Environmental & Social Disclosure</i> to include TCFD recommendations
	F L	F L	F L	INT NL
2020	Update to Canadian Business Corporations Act – part XIV Financial Disclosure			TSX updates its company listings manual to include TCFD recommendations for financial disclosures of listed companies
	F L			L
2021		Environment and Climate Change Canada brings forward legislation for regular climate-adaptation reporting by all federal public entities	Natural Resources Canada brings forward legislation for regular climate-adaptation reporting by companies in natural resources sectors	
		F L	F L	

Filling gaps

Adding clarity

Addressing inconsistencies

F Federal **L** Legislative
P Provincial **NL** Non-legislative
INT International **S** Standard setting



	Bank of Canada	OSFI	Finance Department
2019	The Bank of Canada (BoC) clarifies the degree to which mainstreaming disclosure of climate-related risks and opportunities, incl. through TCFD recommendations, is relevant to the <i>Financial System Review</i>	OSFI participates in program of work on Microprudential/ Supervision in Network of Central Banks and Supervisory Authorities for the Greening of the Financial System	Finance Department outlines role of the TCFD recommendations within the long-term approach to the financial sector
	F NL	INT NL	F NL
2020	BoC includes chapter on mainstreaming disclosure of climate-related risks and opportunities, incl. through TCFD recommendations in <i>Financial System Review</i>	OSFI sends ESG information requests to its institutions and asks its Chief Actuary to produce a climate risk assessment of the CPPIB	
	F NL	F NL	
2021		OSFI's Chief Actuary delivers a report on the fully funded status of the CPPIB	Finance Department publishes its conclusions on the degree to which TCFD recommendations are consistent with its long-term approach to the financial sector
		F NL	F NL

Filling gaps

Adding clarity

Addressing inconsistencies

F Federal **L** Legislative
P Provincial **NL** Non-legislative
INT International **S** Standard setting



Canadian Securities Administrators					
2019	CSA conducts a review of continuous professional development (CPD) for proficiency of employees of securities dealers and directors			CSA conducts a review of their members' current supervisory practices for climate-related financial disclosures	
	P NL			P NL	
2020	CSA requests TCFD-related CPD requirements	CSA updates CSA Staff Notice 51-333 Environmental Reporting Guidance to provide additional guidance on TCFD recommendations	CSA conduct consultations on National Instruments 51-102 Continuous Disclosure Obligations and 58-101 Disclosure of Corporate Governance Practices to reflect TCFD recommendations	CSA conducts review of their members' current supervisory practices for climate-related financial disclosures	CSA & IIROC publish guidance or amendments to a National Instrument on how green bond certifications could be incorporated into the securitization of debt
	P NL	P NL	P L	P NL	P L/NL
2021	Following OSFI's consultation with institutions under its remit, CSA supervises the reporting by Canadian financial institutions reporting on TCFD recommendations			CSA members harmonize best practices for supervision of climate-related financial disclosures	
	P NL			P NL	

Filling gaps

Adding clarity

Addressing inconsistencies

- F** Federal
- P** Provincial
- INT** International
- L** Legislative
- NL** Non-legislative
- S** Standard setting



	CPA Canada	IIROC
2019	CPA Canada and others start new emerging issues committee on disclosure and assurance of climate scenarios and ESG factors within financial statements to report to the IASB	
	INT S	
2020	The emerging issues committee on climate-related financial risk brings forward its report to IASB and the IFRS foundation on disclosure of climate change-related information within corporate annual reports	IIROC Canada engages with the Canadian Securities Institute to request a proposal on developing & measuring proficiency to interpret climate scenarios and ESG factors within financial statements
	INT S	INT NL
2021	CPA Canada responds to guidance from the IASB and/or the IFRS Foundation on disclosure of climate scenarios and ESG factors within annual reports	
	INT S	

Filling gaps

Adding clarity

Addressing inconsistencies

- F** Federal
- P** Provincial
- INT** International
- L** Legislative
- NL** Non-legislative
- S** Standard setting



5.0 Assessing the Sustainability of Economic Activity as a Foundation for Sustainable Finance (European Union Case Study)

Along with China, the European Union (EU) has actively developed the policy framework for sustainable finance. While global trading and investment flows are shifting, investment from Europe into Canada, already substantial, is set to grow. In 2017 a majority (53 per cent) of foreign investment into Canada came from the United States, more than a third (35 per cent) originated in Europe and only 10 per cent came from Asia (including China). If the Government of Canada seeks to diversify its trade markets and to leverage existing trade agreements, emerging EU sustainable finance policies provide an opportunity for early alignment.⁸

The recently published *European Commission Action Plan: Financing Sustainable Growth*, along with legislative proposals—including policy and regulatory changes—rests on the establishment of a taxonomy and processes to assess the sustainability of economic activity throughout investment and business-planning cycles (see Figure 4).

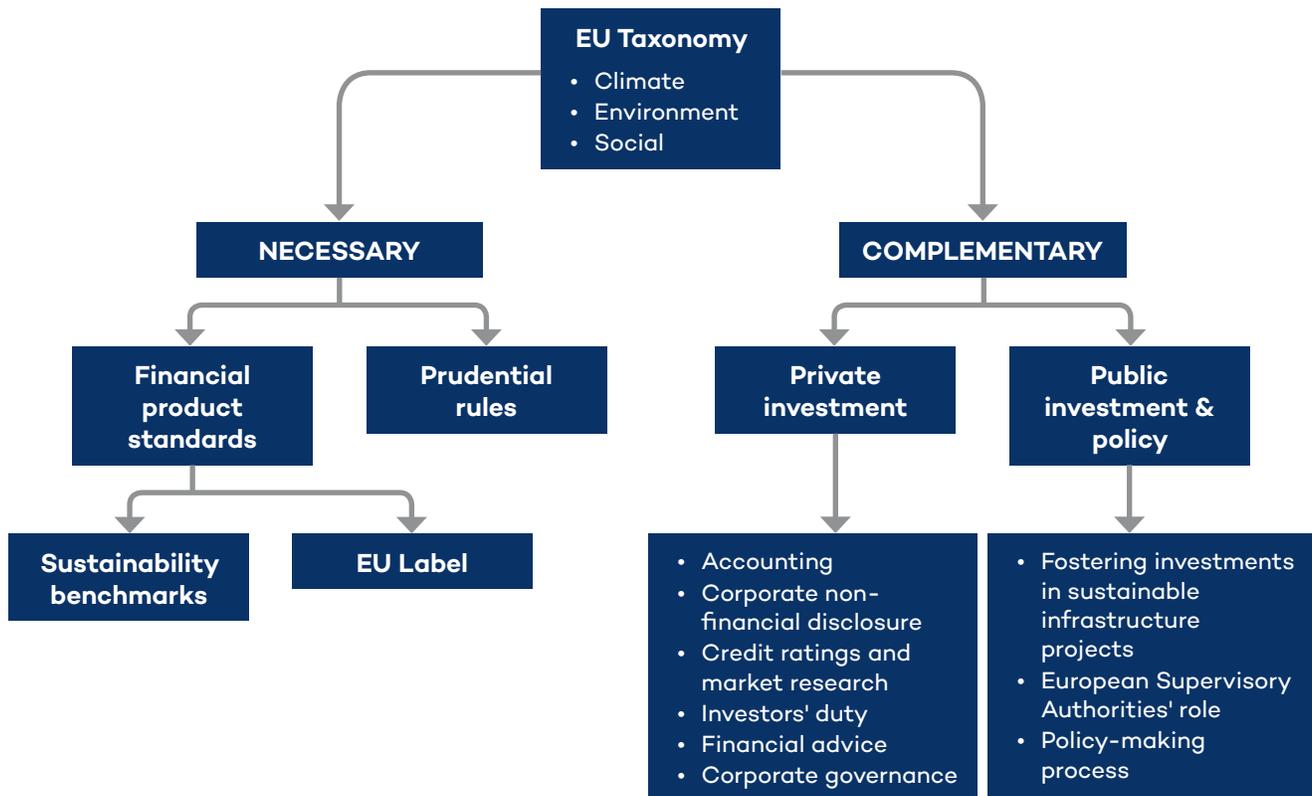


Figure 4. EU diagram of the role of the EU taxonomy in the Action Plan

Source: European Commission, 2018c.

⁸ Canada conducts CAD 69 billion worth of annual trade with its EU partners in the United Kingdom, Germany, Italy and France, and CAD 29 billion with its G7 partner Japan. Canada’s trade with its G7 partners, excluding the United States (8.8 per cent of Canada’s bilateral merchandise trade), is slightly greater than trade with China (8.5 per cent of Canada’s bilateral trade). All told, trade with G7 partners excluding the United States amounts to nearly CAD 100 billion, or close to 9 per cent of Canada’s total bilateral trade. This is important to note for the future. Today, two thirds of Canadian trade is within North America with the United States and Mexico who, respectively, represent 63.4 and 3.9 per cent of Canada’s total bilateral trade.



This diagram is described as follows:

[The EU taxonomy] is at this stage the most important and urgent action of this Action Plan. Clear guidance on activities qualifying as contributing to climate change mitigation and adaptation, environment and social objectives will help inform investors. It will provide detailed information about the relevant sectors and activities, based on screening criteria, thresholds and metrics. This is an essential step in supporting the flow of capital into sustainable sectors in need of financing. An EU taxonomy will be gradually integrated into EU legislation to provide more legal certainty. (High-Level Expert Group on Sustainable Finance, 2018)

Resting on this taxonomy of sustainable economic activity are the 10 recommendations of the European Commission's sustainable finance Action Plan. Wherever possible, the European Commission identified legislative or regulatory pathways for these recommendations. For example, the EU classification system for sustainable activities would provide the basis for the taxonomy's use in areas such as standards, labels, green-supporting factors for prudential requirements and "low-carbon" or "positive carbon impact" benchmarks.

Box 2. European Commission's Action Plan: Financing Sustainable Growth

1. Establishing an EU classification system for sustainable activities (first focus will be climate change mitigation, to be followed by sustainable climate-adaptation-related and social economic activities) (HLEG r1⁹)
2. Creating standards and labels for green financial products (HLEG r4)
3. Fostering investment in sustainable projects (HLEG r5)
4. Incorporating sustainability when providing investment advice (HLEG r4)
5. Developing sustainability benchmarks
6. Better integrating sustainability in ratings and research
7. Clarifying institutional investors and asset managers' duties (HLEG r2)
8. Incorporating sustainability in prudential requirements (HLEG r7)
9. Strengthening sustainability disclosure and accounting rule-making (HLEG r3)
10. Fostering sustainable corporate governance and attenuating short-termism in capital markets (HLEG r7)

Source: European Commission, 2018c¹⁰

The European Commission has appointed a technical working group, which is now engaged in building out the EU taxonomy, as well as the EU Green Bond Standard and metrics allowing improved disclosure of climate-related information (European Commission, 2018b). It is expected to deliver the taxonomy in Q2 2019, before the end of President Juncker's current term.¹¹

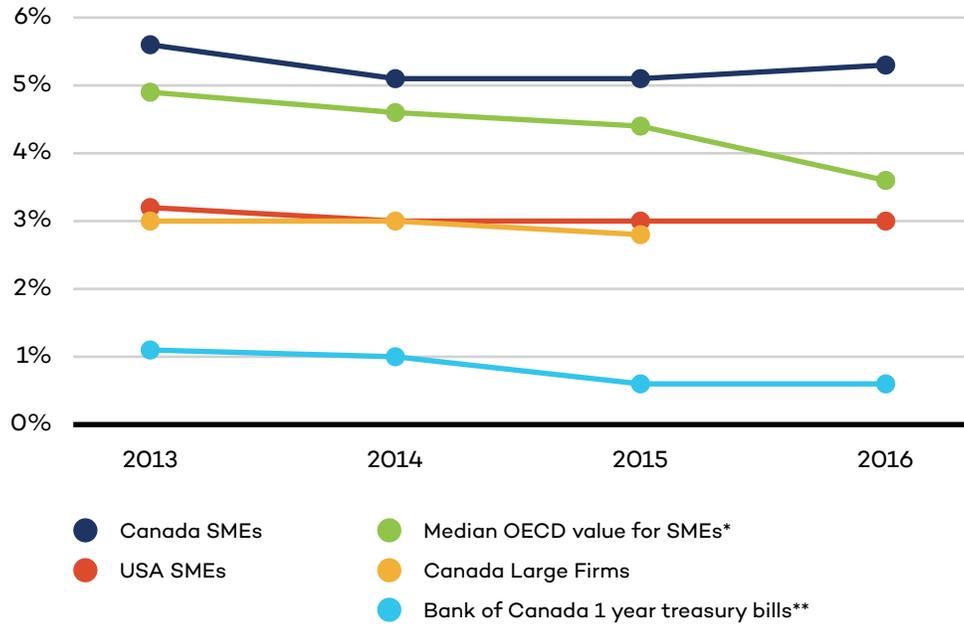
⁹ All of the recommendations by its first consultative body, the High-Level Expert Group on Sustainable Finance (HLEG), were taken up within the European Commission's Action Plan. Here, they are cross-referenced with the European Commission Action Plan by HLEG recommendation number, with r1 representing HLEG recommendation 1, and so on.

¹⁰ Annex C contains an analysis of the EU sustainable finance Action Plan, the legislative or non-legislative recommendations, and the Canadian legal and institutional equivalents.

¹¹ For details on the options being considered for the EU's "Low Carbon Indices," see Annex C.



The EU's plan contemplates future phases that would address both adaptation and the social economy as part of its sustainable finance Action Plan. Canada could also consider these broader definitions. With regards to the social economy, small and medium-sized enterprises (SMEs) are at the core of the Canadian economy, and yet the high cost of capital in Canada compared both to the U.S. and Canada's Organisation for Economic Co-operation and Development (OECD) peers is rarely discussed. The burden on small business resulting from significantly higher interest rates for lending is evident in Figure 5. Whereas OECD and U.S. lending rates to SMEs are converging, rates charged to Canadian SMEs are rising and diverging. This is akin to an economy-wide tax on both small and emerging firms.



* median value for the 39 countries reported on in OECD data

** yearly average of monthly values

Figure 5. Average interest rates paid by large and small firms in Canada versus OECD and U.S. peers

Source: Bank of Canada (2018), OECD, 2018¹²

There are many details to be worked out in the European Commission's Action Plan. For example, it remains to be seen if the EU's taxonomy will apply at the level of company assets, whose cumulative discounted cash flows enable companies to assess whether their assets are impaired. Through institutional mechanisms under the Trade and Sustainable Development Chapter of the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), Canada could establish its Domestic Advisory Group with a view to the development of a taxonomy of sustainable economic activity. In such a taxonomy, it would be important for Canada to consider how it would address decarbonization and zero-carbon investments by companies that are emission-intensive today. Shareholders, including those working in The Investor Agenda, may engage with emission-intensive companies to accelerate reductions in emission intensity through disclosure, governance and accountability.

¹² Data from OECD (2018) is drawn from Table 1, Chapter 1 (<http://dx.doi.org/10.1787/888933665637>) and Chapter 3: Country profiles: Australia (https://www.oecd-ilibrary.org/sites/fin_sme_ent-2018-en/1/2/3/index.html?itemId=/content/publication/fin_sme_ent-2018-en&csp=cd411ebd386283c2cf3cc53983a294a&itemIGO=oe&itemContentType=book#chapter-d1e15126).



Reflecting the EU's approach to policy-making in a federated structure, the EU sustainable finance Action Plan is the product of engagement with dozens of experts from the private sector, supervisory and market authorities, and civil society.¹³

It has to be said that the European Commission's Action Plan is being proposed at a time when the EU as a 21st-century political and social project faces considerable animosity in a number of countries, including the United Kingdom, Italy, Poland, Hungary and Sweden. There is a recognized need for capital in the real economy as part of maintaining social cohesion and sustaining the foundations of the EU's liberal democracies. It is therefore not surprising that the European Commission has proposed a plan to reorient finance into the real economy, including the sustainable economy. As an oil-producing nation, Canada faces additional challenges that are no less daunting—especially at a time when the diversification of trade away from the United States is a priority.

¹³ Annex D maps the recommendations made by civil society in advance of the constitution of the HLEG to the recommendations of the HLEG. Also included are the civil society entities that contributed to the early thinking on sustainable finance in the EU.



6.0 Canada, Climate Science and Efforts to Strengthen Surveillance and Risk Identification in the Global Financial System

In terms of systemic risk, no country is an island given the global nature of financial markets. The G20 recently appointed an Eminent Persons Group (EPG) to consider, among other questions, how to secure the benefits of open and stable global financial markets. Its first report was delivered to the G20 Finance Deputies and Central Bank Leaders in Buenos Aires in March of this year. The EPG found that the global financial system is at risk and in need of three new pillars: (i) a framework to assess and enable mitigation of excessive volatility of capital flows and exchange rates, (ii) a more resilient and predictable global financial safety net, and (iii) strengthened surveillance and risk identification in a more complex and decentralized financial system (G20, 2018).

Evolving climate science suggests that carbon-related risk may be one reason to strengthen surveillance and risk identification in a more complex and decentralized financial system. With a mandate from the United Nations Framework Convention on Climate Change, climate scientists have summarized the evidence of what is needed to achieve the goals laid out in the Paris Agreement—including limiting warming to well below 2°C. As part of the IPCC' Sixth Assessment Report (AR6) cycle, a special report on warming of 1.5°C was published on October 15, 2018. The report was written by 133 scientists, who synthesized over 6,000 peer-reviewed articles to assess the impact of average warming of 2°C compared to 1.5°C. To do this, the IPCC assessed trends in GHG concentrations in the atmosphere. The *Summary for Policymakers* for this research was accepted at an international meeting of the parties to the IPCC. The results were sobering on many levels.

The report states that an increase in average global temperatures of 2°C will have a significantly different impact than a 1.5°C increase. The most negative results of these temperature rises are forecasted to be damage to corals, the Arctic, fisheries and an increase in coastal flooding. Other climate impacts will include increases in mean temperature in most land and ocean regions, hot extremes in most inhabited regions, heavy precipitation in several regions and the probability of drought and precipitation deficits in others.

Average warming compared to the pre-industrial baseline for the decade 2006–15 was close to 1°C, and temperatures are likely to increase at a rate of 0.2°C per decade going forward due to past and ongoing GHG emissions. The cumulative emissions of GHGs will determine how hot it gets, and the warming will continue even after we get to zero annual emissions. This is a concept that is akin to government debt and deficits. Annual surpluses in emissions (the deficits) lead to an accumulation of emissions (the debt).

In order to address the cumulative debt and prevent further warming, sea-level rise and ocean acidification, society will need to remove carbon from the air—again, like a debt resulting from a series of annual deficits passed from one generation to the next. Work in the next 12 years will determine how much carbon will need to be removed from the atmosphere and the likelihood of limiting warming to that which was agreed to in the Paris Agreement.

In the IPCC 1.5°C *Summary for Policymakers*, scientists estimated that the global carbon budget needed to limit warming to 1.5°C based on a stock of existing carbon dioxide emissions of 2,200 gigatonnes of carbon dioxide equivalent (GtCO₂e) and an annual flow of 42 GtCO₂e. They estimated the remaining carbon budget with a likely probability (66 per cent) to restrict warming to 1.5°C as 420 GtCO₂e. The budget for a 50 per cent probability is 580 GtCO₂e. What has not yet been determined within these carbon budgets is the degree to which emissions exceed or “overshoot” these budgets and are removed from the atmosphere using carbon dioxide removal. Ways of doing this include post-combustion, such as using bioenergy with carbon capture and storage and with agriculture, forestry and other land use as well as direct air capture.



Table 2 presents an illustration of risk, including tail risk, on Canadian public equity capital markets of fully crystallized global carbon budgets on the Canadian oil and gas index (IPCC, 2014, 2018; McGlade & Ekins, 2015).

Table 2. Illustration of tail risks to proved and probable reserves disclosed in mainstream financial statements of Canadian publicly traded oil and gas companies under Paris Agreement emissions scenarios¹⁴

Illustration of Risks to Proved and Probable Reserves Disclosed in Mainstream Financial Statements of Canadian Publicly Traded Oil & Gas Companies for Carbon Budgets of 1.5C	Base Case 2°C Scenario (IPCC AR5) 1100 GtCO ₂ e (50% probability)	2°C Scenario (IPCC AR5) 800 GtCO ₂ e (66% probability)	1.5°C Scenario (IPCC 1.5) 580 GtCO ₂ e (50% probability)	1.5°C Scenario (IPCC 1.5) 420 GtCO ₂ e (66% probability)
Remaining Global Carbon Budget GtCO ₂ e	1100	800	580	420
Canadian Theoretical Reserves (1)	171 Billion Barrels of Oil eq			
Value of Canadian Private Equity Oil & Gas Index (2)	\$436 Billion	\$436 Billion	\$436 Billion	\$436 Billion
2P Billion Barrels of Oil Reserves disclosed through financial reports (3)	42.97	42.97	42.97	42.97
Canadian Billion Barrels of Oil eq extractable per McGlade Ekins model modulated by global carbon budget	42.75	31.09	22.54	16.32
Percent of Oil & Gas Public Equity Value at Risk	Less than 1%	27%	47%	61%
Value of Oil & Gas Public Equity Markets at Risk	\$ (\$232,255,000)	\$ (\$120,532,000)	\$ (\$207,286,000)	\$ (\$270,380,000)
(1) - Natural Resources Canada - September 2017				
(2) - TSX on July 4th 2018				
(3) - September 2017				

* Average of the range is used

Sources: (1) Natural Resources Canada, 2018; (2) Author calculations based on company annual reports and TSX data on July 4, 2018; (3) Author calculations based on corporate annual reports for 2017.

There remains much work to be done on translating carbon budgets for climate scenarios into apples-to-apples decarbonization pathways. These pathways would make it possible for capital markets to understand and act on investment theses based on corporate disclosures. They would also enable central banks and financial supervisors to model tail risks to the economy.

¹⁴ Methodology details are included in Annex E.



This challenge has been highlighted in academic literature in recent articles such as “Mitigation Scenarios Must Cater to New Users” (Weberr et al., 2018). There is also new science being published on the carbon intensity of crude oil production, which will inform these scenarios (Masnadi et al., 2018). The most recent such publication points to high-carbon intensities for Canadian oil production. Forthcoming research may suggest that the most recent carbon intensity reductions of Canadian producers are still to be fully reflected (HIS Markit, 2018). Time will tell, and it is important for Canada to be vigilant.

The scope and scale of the challenge in terms of carbon risk in the financial system is also only emerging. In its report, the EPG stated:

Governance of the international financial and monetary system (IMFS) should aim at securing the benefits of open financial markets and pre-empting and mitigating financial crises. Sound domestic macroeconomic policies and financial supervision are fundamental to securing the benefits of open markets for growth and development. However, it is the nature of today’s highly interconnected global financial markets that even well-run economies live with the reality of spillovers or experience volatility in capital flows and exchange rates. Excessive volatility reduces the room for maneuver in policy-making, and can lead to responses that are sub-optimal both nationally and internationally. (G20, 2018)

The EPG identified three pillars to ensure the stability of the international financial and monetary system, including “strengthened surveillance and risk identification in a more decentralized and global financial system” (G20, 2018). Climate change and the risks it poses to the global commons is one of the risks identified by the EPG. As an oil-producing country, Canada would benefit from demonstrating leadership on this question by participating in a working group with other oil-producing countries. This working group might build the scenarios to baseline and assess climate and carbon risks in international financial and monetary systems. Bearing in mind the perils of moral hazard, this could lead to the broadening of concepts such as global systemically important banks to include companies in other sectors.

A strong foundation in disclosure, governance and accountability could enable policies for the oil and gas industry that balance the micro-economic risks within companies that are systemically important to national economies with the need to channel capital to reduce emissions intensity per dollar of revenue produced by oil and gas companies. Such sector-wide emissions-based policies exist in other industries, such as the automotive industry. The Network for Greening the Financial System offers a forum where Canadian institutions could seek partners in other oil-and-gas-producing countries to translate carbon budgets into the financial system and then assess the potential scope and scale of carbon risks to the global financial system. Through other entities, such as the International Energy Agency, Canada could work to build out disclosure standards for the oil and gas industry that would enable supervisors to assess the risks they are mandated to address. What is more, globally agreed-upon disclosure standards for the oil and gas industry would offer a window for leading Canadian companies to attract capital, strengthening their carbon competitiveness.

Once these foundations are in place, macrofinancial scenarios fully reflective of carbon risk could be translated into national scenarios per the EPG’s suggestion that liquidity and solvency, systemic and tail risk be considered through stress scenarios.

Turning from supervisory authorities to the potential role of the private sector, there is clearly an opportunity for sustainable finance to contribute to increasing productivity in Canada’s economy across all sectors. Efficient capital markets that are fully informed of carbon risk will deploy capital into firms that are transparent about these climate-related plans and progress.



7.0 Conclusion

As stated at the start of this report, “sustainable finance” refers to financial flows that enable the transition toward a sustainable low-carbon economy, one that is in line with the Paris Agreement and the UN’s Sustainable Development Goals. As an oil-producing country, sustainable finance presents very real opportunities and challenges for Canada. It will require institutions, market supervisors and private sector actors to engage proactively to address the particular challenges faced by this country, the likely scale of which could have impacts globally and nationally through systemically important financial institutions.

This report makes the case for Canada to attract the investment needed to successfully transition to a low-carbon economy by doing three things:

1. Update laws and standards to make climate-related financial disclosure mandatory with a view to delivering regulatory certainty for companies and financial institutions that prepare mainstream financial reports for investors and other stakeholders. To support this recommendation, this report proposes a three-year plan that includes legislative, non-legislative and standard-setting updates at the international, federal and provincial levels, as well as a compendium of G7 and G20 legal precedents for these recommendations.
2. Engage with international efforts aimed at establishing taxonomies to assess the sustainability of economic activities. The CETA implementation provides a potential platform for this work. Frameworks such as the EU’s taxonomy on sustainable economic activity are being developed to guide the formulation of market benchmarks as well as standards for the labelling of financial products. Canada has much at stake in these efforts and should engage proactively in them.
3. Establish strategies for Canadian leadership in international efforts to strengthen the international financial and monetary systems in the face of systemic shocks, while guarding against potential shocks in the Canadian economy. The Network for Greening the Financial System offers a forum where Canadian institutions could seek partners in other oil-and-gas-producing countries to translate carbon budgets into the financial system and then assess the potential scope and scale of carbon risks to the global financial system. Through leadership in other entities such as the International Energy Agency, Canada could work to build out disclosure standards for the oil and gas industry that would enable supervisors to assess the risks they are mandated to address. What is more, globally agreed-upon disclosure standards for the oil and gas industry would offer a window for leading Canadian companies to attract capital, strengthening their carbon competitiveness.



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Annex A: An Overview of the Key Reports on Corporate and Financial Sector Climate- and Environment-Related Disclosure

Europe	China	Technical
<p>The European Commission's fitness check on public reporting by companies is assessing the effectiveness of the current "non-financial" reporting requirements against its current sustainable finance objectives. This review could result in some TCFD implementation into the European corporate reporting framework in the future.</p> <p>The Commission's Technical Expert Group on Sustainable Finance is currently updating the Non-binding Guidelines to the Non-financial Reporting Directive, which will include the TCFD recommendations.</p>	<p>An environmental disclosure pilot aligned with TCFD will be launched in Guangdong, China, in September 2018. This pilot is part of a bigger project aimed at providing Chinese regulators with hard evidence of the way companies can implement the TCFD.</p>	<p>The Climate Disclosure Standards Board will produce a report to provide insights on how companies have responded to the EU Non-Financial Reporting Directive, and whether the Directive is leading companies to make climate-related disclosures aligned with the TCFD recommendations. The outcomes will provide hard evidence for the review of the Directive due to begin next year. The report was released in November 2018.</p>
<p>France is due to issue a report assessing the progress on Article 173 (December 2018).</p>	<p>The China-UK TCFD pilot program released its progress report around November 2018.</p>	<p>The first official report by the TCFD monitoring progress on the implementation of its recommendations was launched in September 2018. It reviewed 1,800 company reports.</p>
	<p>A Chinese Indicator system is currently being developed, looking initially at GHG emissions, climate risk and encouraging the use of scenario analysis and verification on a voluntary basis.</p>	



Annex B: G20 and G7 Precedents for Implementation of TCFD Recommendations in Canada

FILLING IN GAPS IN THE CANADIAN FINANCIAL SYSTEM

There is a limited number of small changes that could be undertaken to close gaps in the Canadian financial system and bring about greater alignment of capital flows with the commitments laid out in the Paris Agreement and the UN's Sustainable Development Goals. Based on the unique federated legal structure governing Canada's financial system, seven easily filled gaps have been identified.

1. Regulations should be updated to make explicit the requirement to disclose material non-financial risks and opportunities, including environmental, social and governance (ESG) factors. Gaps in regulation could be addressed by including the disclosure of climate-related governance, risks and opportunities, as well as the impacts of climate change on organizations' strategies. This could be underpinned by analysis of businesses under potential climate scenarios in the following four regulations and laws:

- a) National Instrument 51-102 *Continuous Disclosure Obligations*
- b) National Instrument 58-101 *Disclosure of Corporate Governance Practices*
- c) CSA Staff Notice 51-333 *Environmental Reporting Guidance*
- d) *Canadian Business Corporations Act – Part XIV Financial Disclosure*

Examples of changes to G7 regulations and laws on continuous disclosure obligations and corporate governance practices (a and b above):

- The EU sustainable finance Action Plan's action number 10 includes "the possible need to clarify the rules according to which directors are expected to act in the company's long-term interest."
- The Australian Stock Exchange's Corporate Governance Council is currently in the process of updating its Corporate Governance Principles. Recommendation 7.4 of the draft currently under consultation states:

A listed entity should disclose whether it has any material exposure to environmental or social risks and, if it does, how it manages or intends to manage those risks.... The Council would encourage entities that have a material exposure to climate change risk to consider implementing the recommendations of the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD). (ASX Corporate Governance Council, 2018)



Box B1. The UK Financial Reporting Council (FRC)

Currently, the FRC's regulatory remit derives from a number of sources. It is the financial regulator responsible for promoting high-quality corporate governance and reporting in order to foster investment. The FRC's roles and responsibilities include:

- Monitoring and taking action to promote the quality of corporate reporting
- Acting as a relevant authority for setting auditing and ethical standards and monitoring and enforcing audit quality
- Setting the UK Corporate Governance Code, the UK Stewardship Code and the UK standards for accounting and actuarial work

An example of a change to G20 regulations and laws on continuous disclosure obligations and corporate governance practices:

- South Africa's King Code on Corporate Governance has played a foundational role in establishing the link between governance and sustainability matters. The most recent edition of the code highlights climate change as a principal challenge to the leadership of organizations. It also lays out guidance on how such governance matters should be reported:

c. CSA Staff Notice 51-333 Environmental Reporting Guidance

Examples of changes to G7 environmental reporting guidance:

- The UK FRC has published a guidance on the Strategic Report, which includes guidance on implementing climate-change-related reporting requirements set out by the 2006 UK Companies Act; this in turn includes certain climate-related disclosure elements. Given that the requirements are clearly set out in law, companies have found the guidance useful.¹⁵
- The U.S. Securities and Exchange Commission (SEC) issued a Commission Guidance Regarding Disclosure Related to Climate Change in 2010 to provide guidance to public companies regarding the SEC's existing disclosure requirements as they apply to climate change matters. Though helpful, such guidance is voluntary and was not supervised by the SEC, and, as a result, it has not resulted in a measurable improvement of climate-related reporting.
- The European Commission has published non-binding guidelines on non-financial reporting, which it is currently revising to incorporate TCFD recommendations. Given that it is voluntary and is not supervised by EU and EU member state financial supervisors, its use by the market is unclear. The EU's Sustainable Finance Action Plan includes putting existing regulations through a "fitness check"; this is due to be completed by the end of 2018.
- In August 2016, the People's Bank of China, Ministry of Finance and the seven ministries and commissions¹⁶ jointly issued the Guidance on the Construction of Green Financial System to stimulate green investment and financing and to develop innovative financing tools and mechanisms. It is clearly stated that "a mandatory environmental information disclosure system shall be gradually established and

¹⁵ This legal framework has resulted in British companies being among the leaders in TCFD-compliant reporting. Research by CDSB, available at cdsb.net/FTSE, found that, already in the first year of reporting, 90 per cent of companies reviewed disclosed their total annual GHG emissions, 87 per cent of companies disclosed environmental policies and 78 per cent disclosed their policies and provided an indication of the effectiveness of those policies.

¹⁶ People's Bank of China, Ministry of Finance, National Development and Reform Commission, Ministry of Environmental Protection, China Banking Regulatory Commission, China Securities Regulatory Commission, China Insurance Regulatory Commission.



improved for listed companies and bond issuers” and that “investors shall also be encouraged to publish green investment responsibility reports” (People’s Bank of China, 2016). These statements have encouraged investors to disclose their investees’ environmental performances through the publication of different forms of green investment responsibility reports (such as corporate sustainable development reports and corporate social responsibility reports) (People’s Bank of China, 2016). The mandatory disclosure regulation will contain three stages:

- **2017:** disclosure for “key polluter” companies will be mandatory and voluntary for other listed companies
- **2018:** all listed companies will be required to disclose on a “comply-or-explain” basis
- **2020:** all listed companies will be required to disclose climate-related financial risk
- At present, key polluters disclose on a mandatory basis and all others on a “comply-or-explain” basis. The indicators system is under development and will be published before the end of December 2018. The term “environmental” is understood to include pollution data, GHG emissions and resource consumption and efficiency. Verification has been encouraged in a volunteer basis.

d. Canadian Business Corporations Act – Part XIV Financial Disclosure

Examples of changes to G7 business corporation acts and laws on financial disclosure:

- The British equivalent (UK Companies Act) was updated in 2013 and 2016 (Climate Disclosure Standards Board, 2018) with requirements for companies’ annual reports to include certain climate-change-related and environmental disclosure, including GHG emissions on a global footprint basis and the description of the principal environmental risks and uncertainties facing the company, if any.
- The UK House of Commons Environmental Audit Committee has recommended that climate-risk reporting should become a mandatory requirement for all large asset owners by 2022, and that government should set a deadline by which it expects all listed companies and large asset owners to report on climate-related risks and opportunities in line with TCFD recommendations on a comply-or-explain basis by 2022.
- The EU equivalent (Directive 2014/95/EU on disclosure of non-financial and diversity information by certain large undertakings and groups) requires around 6,000 companies across Europe to disclose in their management report information policies, risks and outcomes as regards environmental matters, social and employee aspects, respect for human rights, anti-corruption and bribery issues, and diversity in their board of directors. The Directive is currently under review to determine whether it is fit for purpose in its current state or whether strengthening is required to achieve its intended outcomes.
- Equivalents of such laws exist in each G7 and G20 jurisdiction, where guidelines require listed companies to prepare an annual report containing, among other things, information for existing and prospective investors concerning their financial position and financial performance.

Box B2. Opportunity to build on the UK’s example in Canada and other G7 countries

Canada and other G7 countries update their equivalents of the Canada Business Corporations Act to include a requirement to report climate-change-related financial information—that is, to implement TCFD recommendations through such legislation. This can be done, for example, by clarifying that climate-change-related information may be financially material, because these may also have material financial impacts and therefore must be subject to financial disclosure.



2. Canadian financial market leaders should be engaged in international initiatives that provide an opportunity to show their leadership. The Sustainable Stock Exchange Initiative would provide a ready vehicle.

The following are the Sustainable Stock Exchange Initiative members from the G7 and the G20, including EU member states.

G7 and G20 Stock Exchanges	Additional EU Stock Exchanges
Argentina – Bolsas y Mercados Argentinos and Bolsa de Comercio de Buenos Aires	Belgium – Euronext Brussels
Australia – Australian Securities Exchange and Sydney Stock Exchange	Denmark – Nasdaq Copenhagen
Brazil – B3 (formerly BM&FBOVESPA)	Estonia – Nasdaq Tallinn
Canada – Aequitas NEO Exchange	Finland – Nasdaq Helsinki
China – Shanghai Stock Exchange and Shenzhen Stock Exchange	Greece – Athens Stock Exchange
France – Euronext Paris	Latvia – Nasdaq Riga
Germany – Deutsche Börse AG	Lithuania – Nasdaq Vilnius
India – BSE India Ltd. And National Stock Exchange of India	Luxembourg – Luxembourg Stock Exchange
Italy – Borsa Italiana	Netherlands – Euronext Amsterdam
Japan – Japan Exchange Group, Inc.	Poland – Warsaw Stock Exchange
Mexico – Bolsa Mexicana de Valores	Portugal – Euronext Lisbon
South Africa – Johannesburg Stock Exchange	Romania – Bucharest Stock Exchange
Turkey – Borsa Istanbul	Slovenia – Ljubljana Stock Exchange
United Kingdom – London Stock Exchange and Euronext London	Spain – Bolsas y Mercados Españoles
USA – NYSE and Nasdaq	Sweden – Nasdaq Stockholm

ADDING CLARITY IN THE CANADIAN FINANCIAL SYSTEM

There are also areas where a lack of clarity around key institutions' positions on sustainable finance could be addressed through the engagement of Canadian private sector financial actors.

3. In conjunction with the Department of Finance's consultations on the long-term approach to the financial sector, the OSFI could ask all entities under its supervision about their understanding of ESG factors or TCFD recommendations within their mandate. The OSFI could also ask all entities under its supervision about their plans to manage and report on climate adaptation.

Canadian entities that could be invited to participate include:

- a) The Canadian Pension Plan Investment Board and other pension funds
- b) Insurance companies (including life insurance companies)
- c) Banks
- d) Asset managers



Examples where laws have come into force in the G7 to clarify the requirement for the disclosure of climate-related financial risk from all private sector actors in the financial system:

- Article 173 of the French Energy Transition Act requires organizations with a balance sheet of more than EUR 500 million—including asset managers, insurance companies, listed companies, and pension and social security funds—to disclose in their annual reports how they integrate climate change concerns and ESG criteria into their investment policies and risk management. The regulation concerns all asset classes: listed assets, venture capital, bonds, physical assets, etc. The law came into force on January 1, 2016, and it is being implemented on a comply-or-explain principle, providing investors with broad flexibility when it comes to choosing the best way to fulfill the law’s objectives.
- The UK’s Adaptation Reporting Power legislation allows government to require that public entities report their management and reporting processes for climate adaptation. For the third reporting period, proposals have been made to have climate-adaptation reporting extend to all financial supervisory authorities, including the UK’s Financial Conduct Authority and the Prudential Regulation Authority, which together include elements of Canada’s OSFI mandate.

Examples of G7 and G20 initiatives to establish “sandboxes” to pilot regulations leading to greater transparency of climate-related risk in the financial sector:

- On December 16, 2017, Chinese Vice Premier Ma Kai and the UK’s Chancellor of the Exchequer Phillip Hammond concluded the ninth China-UK Economic and Financial Dialogue in Beijing. Among many outcomes, outcome 38 is described as follows:

Both sides welcome the work of the China-UK Green Finance Taskforce, established by the Green Finance Committee of China Society for Finance and Banking and the Green Finance Initiative of the City of London. As part of its 2018 programme, the China-UK Green Finance Taskforce will, with support from the PBOC, HMT and Bank of England as well as other Chinese and UK actors to: lead the discussions on voluntary guidelines on green Belt and Road investment for Chinese and UK investors, research on measures to promote green asset securitisation in China and the UK, conduct pilot projects on environmental information disclosure consistent with the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations by financial firms in both countries, promote analysis to demonstrate a positive correlation between ESG and financial performance. (Embassy of the People’s Republic of China in the United Kingdom of the Great Britain and Northern Ireland, 2017)

The UK-China TCFD pilot was set up to explore the environmental disclosure of financial institutions aligned with the TCFD. Four institutions from the UK joined the pilot, including an asset owner (pension fund), an asset manager, an insurance company and a bank. Six institutions from China joined the pilot, including two asset managers and four banks. An environmental stress test has been identified as one of the key outputs of this pilot, including but not limited to a climate risk stress test. In May 2018, during the green finance pilot cities conference, an environmental disclosure pilot for banks was set up with the requirement of aligning with the TCFD, which indicates the intention of expanding the pilot at scale and the possibility of making it mandatory when banks are considered ready.



4. The Bank of Canada could clarify the degree to which mainstreaming disclosure of climate-related risks and opportunities, including through TCFD recommendations, is relevant to the 2019 Financial System Review.

Examples where G7 central banks are leading processes to clarify the danger posed by climate-related risk in the financial system:

- The Network for Greening the Financial System is a consortium of eight central banks and supervisors that collectively committed to establishing a Network of Central Banks and Supervisors for Greening the Financial System, which was launched at the One Planet Summit in November 2017. The first of its three workstreams focuses on climate-related financial disclosures.
- The Bank of England has published an article in the June 2017 edition of its *Quarterly Bulletin* summarizing the financial risks from climate change and its strategy for responding to them.

5. Canada's Minister of Finance could clarify the degree to which mainstreaming disclosure of climate-related risks and opportunities, including through TCFD recommendations, is relevant to the Finance Department's long-term approach to the financial sector, the statutory sunset date of which is March 29, 2019.

6. The members of the CSA could conduct a review of professional development for securities dealers via an accredited entity such as the IIROC on TCFD recommendations, including on strategy and climate scenarios.

ADDRESSING INCONSISTENCIES IN THE CANADIAN FINANCIAL SYSTEM

There are also opportunities for Canadian entities to quickly address inconsistencies in the financial system.

7. Where reporting standards bodies have not yet addressed the materiality of climate risks and opportunities and ESG factors, Canada should lead the way with its G7 partners. For example, the CPA Canada, along with members from all G7 countries, could strike an emerging issues committee on the disclosure and assurance of climate scenarios and ESG factors within financial statements. This committee's work could be combined with engagement by the accounting membership bodies with the IFRS Foundation to address the materiality of climate-change-related matters, scenarios and the use of International Financial Reporting Standards (IFRS) to report on such matters in corporate annual reports.

Example of initiatives through standards bodies to address inconsistencies in G7 financial systems:

- The European Commission has recognized that certain IFRS may "pose an obstacle to broader EU policy goals such as long-term investments and sustainability" (European Commission, 2018a), and it has requested that the European Financial Reporting Advisory Group set up a Reporting Lab to assess emerging issues in reporting. This is based on the UK's example, where the Financial Reporting Council's Reporting Lab has collaborated with the market to produce research and guidance on such topics.

Box B3. Opportunity for G7 leadership

Call on the IASB to move ahead with its "wider reporting" agenda and implement TCFD recommendations into its standards and incorporate them into its Practice Statement on Management Commentary, as well as explain how its existing IFRS can be applied to implement TCFD recommendations.



Annex C: Analysis of EU Sustainable Finance Proposed Actions, EU Laws and Canadian Equivalents

EU Action	EU Sustainable Finance Proposed Actions	EU Laws, Delegated Acts or Other Instruments	Equivalent Canadian Laws or Institutions
1	Establishing an EU classification system for sustainable activities (1st focus climate change mitigation) (HLEG r1) ^a (Proposal for Regulation)	<ul style="list-style-type: none"> Standards Labels Green-supporting factor for prudential requirements Sustainability benchmarks 	<ul style="list-style-type: none"> Office of the Superintendent of Financial Institutions Act Financial Consumer Agency of Canada Act
2	Creating standards and labels for green financial products (HLEG r4)	<ul style="list-style-type: none"> Prospectus Regulation (?)^c EU Green Bond Standard (?) EU Ecolabel Framework (?) 	<ul style="list-style-type: none"> Provincial securities regulators Canada Business Corporations Act Investment Industry Regulatory Organization of Canada Canadian Securities Institute CPA Canada
3	Fostering investment in sustainable projects (HLEG r5)	<ul style="list-style-type: none"> European Fund for Strategic Investments 	<ul style="list-style-type: none"> Canada Infrastructure Bank Act
4	Incorporating sustainability when providing investment advice (HLEG r4)	<ul style="list-style-type: none"> EUC intends to amend delegated acts. MiFID II/MiFIR: This new legislative framework will strengthen investor protection and improve the functioning of financial markets making them more efficient, resilient and transparent. European Securities Markets Authority (ESMA) guidelines on suitability assessments 	<ul style="list-style-type: none"> Financial Consumer Agency of Canada Act Investment Industry Regulatory Organization of Canada
5	Developing sustainability benchmarks (Proposal for Regulation) ^b	<ul style="list-style-type: none"> European Commission intends to adopt delegated acts Benchmark Regulation (framework law) 	<ul style="list-style-type: none"> Office of the Superintendent of Financial Institutions Act

Notes: ^a Where (HLEG rX) appears, these refer to the recommendations of the High-Level Expert Group on Sustainable Finance; ^b Proposal for Regulation is found in the EU Commissions Legislative Proposal on Sustainable Finance (May 24, 2018): https://ec.europa.eu/info/law/better-regulation/initiatives/com-2018-355_en; ^c Questions marks (?) indicate the EU Action Plan text denotes consideration of potential legislative lever.



EU Action	EU Sustainable Finance Proposed Actions	EU Laws, Delegated Acts or Other Instruments	Equivalent Canadian Laws or Institutions
6	Better integrating sustainability in ratings and research	<ul style="list-style-type: none"> Credit Rating Agency Regulation (?) 	<ul style="list-style-type: none"> Canadian Securities Administrators
7	Clarifying institutional investors' and asset managers' duties (fiduciary) (HLEG r2) (Proposal for Regulation)	<ul style="list-style-type: none"> Solvency II Institutions for Occupational Retirement Provision (IORP) II Undertakings for Collective Investment in Transferable Securities (UCITS) Alternative Investment Fund Managers Directive (AIFMD) Markets in Financial Instruments Directive (MiFID) II 	<ul style="list-style-type: none"> Pension Benefits Standards Act Pooled Registered Pension Plans Act Canadian Pension Plan Investment Board Act
8	Incorporating sustainability in prudential requirements (HLEG r7)	<ul style="list-style-type: none"> Capital Requirement Regulation and Directive (?) European Insurance and Occupational Pensions Authority (EIOPA) 	<ul style="list-style-type: none"> Bank Act
9	Strengthening sustainability disclosure and accounting rule-making (HLEG r3)	<ul style="list-style-type: none"> Non-Financial Information Directive (Fitness check underway) European Corporate Reporting Lab as part of European Financial Reporting Advisory Group (EFRAG) (to include Asset Managers and Institutional Investors) Revised International Financial Reporting Standards (IFRSs) (EFRAG is an IFRS Foundation member – N.B., IFRS 9's impact on long-term investments) IASB and the adoption process of IFRSs to allow adjustments where IFRSs are not conducive to European public good 	<ul style="list-style-type: none"> Provincial securities regulators (CSA) Canada Business Corporations Act (federal law) Investment Industry Regulatory Organization of Canada Canadian Securities Institute CPA Canada TMX Group
10	Fostering sustainable corporate governance and attenuating short-termism in capital markets (HLEG r7)	<ul style="list-style-type: none"> European Supervisory Authorities (N.B., collection of evidence of undue short-termism including portfolio turnover and equity holding periods by asset managers) European Securities Market Authority 	<ul style="list-style-type: none"> Provincial securities regulators (CSA)



Annex D: Origins of the EU's Sustainable Finance Recommendations: Civil society and the High-Level Expert Group

The EU's sustainable finance initiative was launched with the establishment of a High-Level Expert Group (HLEG) by Jean-Claude Juncker (President of the European Commission).¹⁷ The HLEG's mandate was to provide advice on how to “steer the flow of capital towards sustainable investments, identify steps that financial institutions and supervisors should take to protect the financial system from sustainability risks; and deploy these policies on a pan-European scale” (High-Level Expert Group on Sustainable Finance, 2018).¹⁸

In the preamble to its report, the HLEG stated that there is no single lever with which to “steer the flow of capital towards sustainable investments and achieve these ambitions and ‘switch’ the financial system to sustainability.” It further stated that “improving the contribution of the financial system to sustainable and inclusive growth requires a comprehensive review, the identification of areas where changes are needed, and the development of specific recommendation in these areas” (High-Level Expert Group on Sustainable Finance, 2018).

Following a consultation on this first round of recommendations, the HLEG published its report on January 31, 2018. This was followed in quick succession by the European Commission's response, which came, on March 23, 2018, in the form of the Sustainable Finance Plan containing a 10-point action plan with reference to relevant EU legislation and delegated acts. All but two actions in the plan were recommended by the HLEG.

The European Commission's Action Plan includes policy and regulatory changes that are focused on three main points in the capital investment cycle: Climate-related Disclosure to Investors, Frameworks to Assess Sustainability of Economic Activities and Financial Products Standards for Savers.

¹⁷ From 1995 to 2013, Mr. Juncker was the 23rd Prime Minister of Luxembourg, and from 1989 to 2009 he was the Minister for Finances. Following a September 2016 speech by Juncker on the threats to the EU—including high unemployment, social inequality and high levels of public debt—the EU Commission in December 2016 published its intent to form the HLEG. President Juncker's term will come to an end in October 2019.

¹⁸ Annex C contains a detailed analysis of EU action as it is associated with legislation and institutions, as well as Canadian equivalents.



Box D1. EU Commission Action Plan: Financing Sustainable Growth (European Commission, 2018c)

1. Establishing an EU classification system for sustainable activities (first focus will be climate change mitigation, to be followed by sustainable climate-adaptation-related and social economic activities) (HLEG r1¹⁹)
2. Creating standards and labels for green financial products (HLEG r4)
3. Fostering investment in sustainable projects (HLEG r5)
4. Incorporating sustainability when providing investment advice (HLEG r4)
5. Developing sustainability benchmarks
6. Better integrating sustainability in ratings and research
7. Clarifying institutional investors and asset managers' duties (HLEG r2)
8. Incorporating sustainability in prudential requirements (HLEG r7)
9. Strengthening sustainability disclosure and accounting rule-making (HLEG r3)
10. Fostering sustainable corporate governance and attenuating short-termism in capital markets (HLEG r7)

Wherever possible, the European Commission identified how actions would be embedded into EU law. For example, the EU classification system for sustainable activities would provide the basis for its use in areas such as standards, labels, green-supporting factors for prudential requirements as well as “low-carbon” or “positive carbon impact” benchmarks.

Another example of a legal change that could help embed the EU Commission’s Action Plan is the amendment of the Markets in Financial Instruments Directive II (MiFID II) and Insurance Distribution Directive, delegated acts to ensure that sustainability preferences are taken into account in suitability assessments for investors. In cases where policy proposals are already well advanced—such as, for example, green bond standards—the European Commission proposes to conduct public consultations.

Where there were no legal “hooks,” alternative policies were proposed. These include fostering investment in sustainable projects by building advisory and technical assistance capacity needed to build a pipeline of sustainable projects, including both large- and small-scale projects.

Finally, for remaining themes where neither legal hooks nor budgetary mechanisms existed, such as for green labels, the Action Plan refers to exploring legislative frameworks’ relevance.

Comprised of 20 members, the HLEG’s membership was diverse and structured with the following terms of reference (Valdis Dombrovskis, VP EU Commission):

The members of the High-Level Expert Group shall be individuals appointed to represent a common interest of the following groups of stakeholders: (a) non-governmental organizations representing civil society and that play a leading role in contributing to public and policy debate on shaping the sustainable financial market framework; (b) insurance companies, pension funds, asset managers, banks, operators of financial infrastructures as well as other categories of financial institutions active in intermediating investments in sustainable or green finance or in managing risks linked to sustainable development; (c) institutions and organizations providing analysis, data or methodologies that facilitate sustainable or green finance.

¹⁹ All of the recommendations by the HLEG were taken up within the European Commission’s Action Plan. Here, they are cross-referenced with the EU Commission Action Plan by HLEG recommendation number, with r1 representing HLEG recommendation 1, and so on.



The EU High-Level Expert Group recommended seven priority actions, all but one of which was first put forward by civil society in the report *A Sustainable Finance Plan (SFP) for the European Union* published by E3G (High-Level Expert Group on Sustainable Finance, 2018):

1. Establishing an EU sustainability taxonomy, starting with climate mitigation, to define areas where investments are needed most
2. Clarifying investor duties to extend the time horizons of investment and bringing greater focus on environmental, social and governance (ESG) factors into investment decisions²⁰ (SFP)
3. Upgrading disclosures to make sustainability opportunities and risks transparent (SFP)
4. Enabling retail investors to invest in sustainable finance opportunities (SFP)
5. Developing official European sustainability standards for some financial assets, starting with green bonds (SFP)
6. Establishing “Sustainable Infrastructure Europe” to deploy development capacity in EU member states for infrastructure necessary for a more sustainable economy (SFP)
7. Integrating sustainability firmly into the governance of financial institutions as well as in financial supervision (SFP)

Box D2. Civil society organizations that contributed to establishing the EU’s sustainable finance initiative

In October 2016, E3G (UK) published *A Sustainable Finance Plan for the European Union*. The report was developed by E3G’s Ingrid Holmes and Sam Maule as part of a joint initiative with 12 civil society and academic organizations:

- 2 Degrees Investing Initiative
- Ario Advisory
- Carbon Tracker Initiative
- ClientEarth
- Climate Bonds Initiative
- Climate Disclosure Standards Board
- Eurosif
- Future-Fit Foundation
- Preventable Surprises
- ShareAction
- The University of Oxford Sustainable Finance Programme
- WWF

As part of the “Climate Disclosure to Investors” theme, the EU’s Sustainable Finance Plan includes establishing standards for “low-carbon indices,” which are used to benchmark the performance of asset managers. This is being undertaken by the Technical Working Group (TWG).

²⁰ HLEG recommendations indicated with “SFP” were made in the Sustainable Finance Plan for the European Union issued by E3G with civil society.



In addition to working on “low-carbon indices,” the main tasks of the TWG are to assist the European Commission in developing:

- An EU taxonomy of environmentally sustainable economic activities
- An EU Green Bond Standard
- Metrics allowing improved disclosure on climate-related information. (European Commission, 2018b)

It is expected to deliver the taxonomy in Q2 2019 before the end of President Juncker’s current term.²¹

Box D3. Sustainable finance proposals for a regulation of the European Parliament and of the council

Action 1: Establishing an EU classification system for sustainable activities

- [Proposal for regulation on the establishment of a framework to facilitate sustainable investment](#) (63 pages)

Action 7: Clarifying institutional investors’ and asset managers’ duties

- [Proposal for regulation on the disclosure relating to sustainable investments and sustainability risks and amending Directive \(EU\) 2016/2341](#) (26 pages)

Action 5: Developing sustainability benchmarks

- [Proposal for regulation amending Regulation \(EU\) 2016/1011 on low carbon benchmarks and positive carbon impact benchmarks](#) (18 pages)

Most recently, on May 24, 2018, the European Commission published legislative proposals on sustainable finance. In the proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) 2016/1011 on low-carbon benchmarks and positive carbon impact benchmarks, four options are proposed for the regulation of securities benchmarks.

The first option (Option 1) is for new EU action. Option 2 proposes improving the transparency of the methodology and establishing minimum standards for “decarbonized” and “low-carbon” indices. As an example, indices are built by taking a standard benchmark, such as the S&P 500 or the NASDAQ100, and removing or underweighting companies with relatively high-carbon footprints. Option 2 is presented as a generalist approach with minimum harmonization. Option 3 proposes harmonized EU rules for “pure-play” low-carbon or “positive carbon impact” indices. This is presented as a specialist approach with a detailed rulebook.

Option 4 has two variations, the first being the EU’s preferred option. Option 4a proposes minimum standards for harmonizing the methodology to applied to low-carbon indices and “positive carbon impact” indices. Option 4b goes one step further, with harmonized EU rules for different types of low-carbon indices—a comprehensive regulatory approach. In the preferred option (4a), the new regulatory framework would introduce minimum standards so that methodologies for benchmarks—whether low-carbon indices or “positive carbon indices”—would be bound by these standards. This approach would provide standards for the criteria and methods used to select and weight the underlying assets of the benchmark, and to calculate the carbon footprint and carbon savings of underlying assets.

²¹ For details on the options being considered for the EU’s “low-carbon indices,” see Annex C.



Annex E: What Does a Paris-Compliant Climate Scenario Look Like Globally?

As companies and financial institutions engage in integrating climate scenarios into their business plans, the Intergovernmental Panel on Climate Change's (IPCC, 2018) most recent report on global warming of 1.5°C as well as energy scenarios like those in the International Energy Agency's *World Energy Outlook* will emerge as useful tools. Investors, savers and regulators will expect business plans to reflect how climate scenarios impact business activities; how business activities impact climate scenarios and carbon budgets will also increasingly figure into these discussions.

While climate impacts are already being seen in many areas of the world at 1°C of warming, scientists predict more serious and irreversible climate impacts with increasing temperatures. In recognition of this, the global community came together for the 2015 Paris Agreement, in which they committed to “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels” (United Nations, 2015, p. 3).

Climate scientists have defined and calculated “carbon budgets,” which estimate the amount of carbon dioxide that can be released into the atmosphere before we cross the threshold of 1.5°C or 2°C of warming. We might refer to carbon budgets as the limited “room” left in the atmosphere for the remaining coal, oil and natural gas reserves. By engaging scientists from around the world, the IPCC compiles the evidence and draws conclusions to determine these global carbon budgets.

In its 2014 *Summary for Policymakers*, the IPCC informed us that humanity can likely only afford to release an additional 1,000 Gt of additional GHG emissions between 2011 and 2100 before crossing the 2°C threshold, and even less to stay below 1.5°C.²²

In 2015, researchers used the IPCC's findings to develop a model of theoretical global fossil fuel reserves by country, including a dispatch order, or allocation, of global fossil fuel reserves based on the cost of extraction and associated emissions. The results of this model were published in the form of a letter to the journal *Nature*.²³ Its summary statement may be familiar to coal, oil and gas leaders:

Our results suggest that, globally, a third of oil reserves, half of gas reserves and over 80 per cent of current coal reserves should remain unused from 2010 to 2050 in order to meet the target of 2°C. (McGlade & Ekins, 2015)

It is worth underlining the fact that the hydrocarbon “reserves” referred to above consist of the *potential* or *theoretical* reserves published by national departments of energy. For clarity, global theoretical fossil fuel reserves are three to four times greater than the aggregate *proved and probable* reserves disclosed globally in mainstream financial statements by publicly traded coal, oil and gas companies. As an example, Natural Resources Canada (NRCan) estimates the country's theoretical reserves to be four times the size of the proved and probable reserves disclosed in financial statements by oil and gas companies trading on public equity markets.

To summarize, in 2015 a dispatch model—by country, not company—for global hydrocarbon reserves capped the global carbon budget at 1,100 GtCO₂e between now and 2100. This is in excess of the range of 400 to 1,000 GtCO₂e, as of 2014, that the IPCC associated with a “likely” chance of staying below 2°C of warming over the 21st century (IPCC, 2014) and double the 420 to 580 GtCO₂e recently published in the IPCC *Global Warming of 1.5°C* report (IPCC, 2018).

²² The *Global Warming of 1.5°C: Summary for Policymakers* updates this carbon budget and is discussed in terms of tail risk to the financial sector on page 24 of this report.

²³ The McGlade & Ekins model is used as the basis for the viability assessment by Carbon Tracker of specific company oil and gas reserves.



Many Canadian companies face climate-related risks, and investors will increasingly come to expect disclosure of these risks. For example, the Pan-Canadian Framework on Clean Growth and Climate Change addresses the emissions associated with the *production* of Canadian hydrocarbons; it does not, however, include the emissions from the final combustion of Canadian oil and gas and the associated risks within carbon-constrained scenarios, which per force include the combustion of all extracted fossil fuels.

Given an 800 GtCO₂e global carbon budget (at the high end of the range associated with a “likely” chance of staying below 2°C of warming over the 21st century), and the national theoretical reserves and production costs modelled on the scenario described above, there is a material risk even under a 2°C scenario that a portion of probable (or 2P) Canadian oil and gas reserves *will not fit* within the global carbon budget. This is illustrated in Figure E1 below.

How Much of Canada’s 171 Billion Barrels of Potential Reserves Are Disclosed in Public Company Financial Statements?

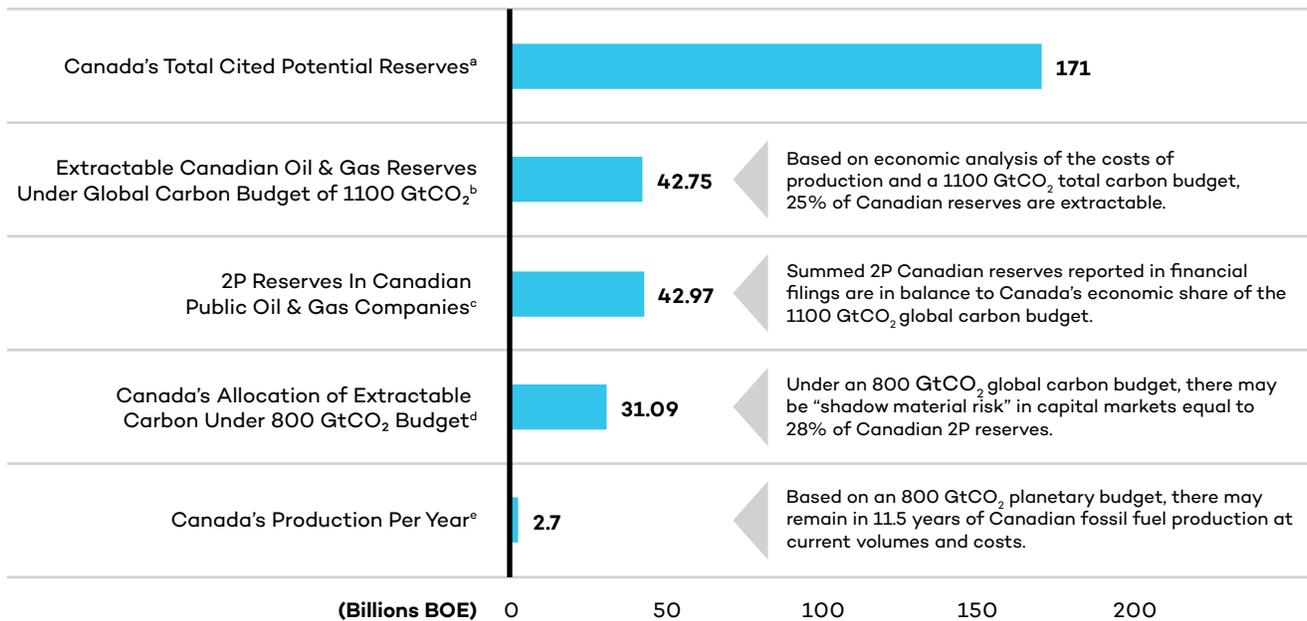


Figure E1. Analysis of Canadian 2P reserves under a 1,100 and 800 GtCO₂e global carbon budget

Source: Author; previously published based on IPCC AR5 (IPCC, 2014) in *Clean Technology Transition Brief*, University of Toronto, School of Public Policy and Governance, March 2018.

^a Source: Natural Resources Canada. Because this analysis is focused on the impact of the global carbon budget to capital markets and the financial system, we have elected to refer to Natural Resources Canada's (NRCan's) estimate of reserves, as potential reserves because these are not yet referred to as proven or probable in financial disclosures. In its disclosure to citizens, NRCan refers to these reserves as proven.

^b Source: McGlade, & Eskins, 2015.

^c Source: 2016 financial statements of 49 public companies with Canadian reserves – excludes reserves located outside of Canada that are held by Canadian companies. Whereas Shell Canada, Devon Energy Canada and ConocoPhillipsCanada did not report Proven + Probable Reserves (2P), Proven Reserves (1P) are included as a proxy.

^d Source: Edenhofer, Knopf, Bak, & Bhattachara, 2017.

^e Source: Natural Resources Canada, CAPP



CANADA'S FINANCIAL DISCLOSURE REGULATIONS PROVIDE STRONGER DISCLOSURE ON OIL AND GAS RESERVES THAN OTHER JURISDICTIONS

There are at least three important caveats that must be applied to the analysis of Canadian 2P oil and gas reserves described above. Two suggest that there may be even greater climate-related financial risk in the Canadian financial system associated with these 2P reserves, and a third may have a mitigating effect on this risk.

First, in terms of undisclosed climate-related risk, three companies with major Canadian oil and gas holdings—Shell Canada, Devon Energy Canada and ConocoPhillips Canada—did not report probable reserves, and so these are not counted in the above analysis. As a result, only proved (1P) reserves are included for these companies. These unreported 2P reserves suggest that our present analysis overstates the portion of Canadian 2P reserves that “fit” within Canada’s total share of the global carbon budget as modelled in 2015.

Second, in terms of undisclosed reserves, and hence climate-related risk, Canadian securities law does not require companies to disclose reserves associated with jointly held assets, such as Syncrude’s proven reserves.²⁴ The undisclosed 2P reserves of such operating consortia in Canada may also be significant.

Third, as a potentially risk-mitigating factor, Canadian oil and gas producers may have significantly reduced their production emissions intensity since McGlade and Ekins published their research in 2015. Are these reductions globally consistent? If emissions associated with production by Canadian oil and gas companies have decreased markedly compared to global competitors, Canada’s “share” of oil production would increase.

Canadian policy-makers would be wise to follow new research on the global carbon intensity of crude oil production and ensure it reflects the impact of innovation on the carbon intensity of Canadian production (Masnadi et al., 2018). For investors, understanding the carbon intensity of oil producers will be relevant in assessing how to respond to proposed investments by oil and gas companies to diversify into clean energy assets and reduce production emissions through investments in innovation.

SUPERVISION OF LENDERS TO OIL AND GAS COMPANIES AND THE CONCEPT OF NATIONAL AND GLOBAL SYSTEMICALLY IMPORTANT OIL AND GAS COMPANIES

The price of oil is set on global markets. Like any oil-producing country, Canada is a price taker. Technological evolution, as well as climate policies by countries that are net importers of oil such as China and the EU, will affect the price of oil. If a price of USD 18–35 per barrel is associated with the production that is within the bounds associated with Paris Agreement goals, Canada must consider these implications on our society, on workers in the oil and gas industry, and on our savings.

Canadian oil and gas public equity shares constitute a material portion of Canadians’ savings. Equity and debt issued by global oil and gas companies also constitute a portion of Canadian pension funds. What is more, Canada’s oil and gas companies themselves have defined benefit pension obligations to thousands of employees. Should any of these companies fail, Canada would be faced with pension defaults reminiscent of those of Nortel and Sears Canada; this would have a potentially devastating impact on pension beneficiaries, and particularly on women, who by virtue of salary gaps are less able to save privately for retirement.

The scenarios described above strongly suggest that Canada’s Sustainable Finance Action Plan must consider the risks to the Canadian financial system presented by oil and gas reserves that may not be economical given production levels associated with Paris Agreement goals and do so with due consideration of the scale of the risk.

²⁴ According to its website, Syncrude is owned through a partnership of Imperial Oil Resources Limited, Nexen Oil Sands Partnership, Sinopec Oil Sands Partnership and Suncor Energy Inc. (with the Suncor interest held by Canadian Oil Sands Partnership #1 and Suncor Energy Ventures Partnership, both wholly owned affiliates of Suncor Energy Inc.). See <https://www.syncrude.ca/our-company/overview/>



Addressing risk of this scale will require transition strategies to enable markets to flow capital to assist oil and gas companies in their plans to make the transition to low-carbon energy. This scale of carbon risk within the Canadian financial system suggests that “carbon positive” benchmarks will need to consider how oil and gas companies reducing emissions associated with production can revalue some assets and build out zero-carbon lines of business.

As described above, the final emissions resulting from all extracted and burned global coal, oil and gas are what “use up” the global carbon budget. When these emissions are counted via proved and probable reserves, as disclosed by Canadian oil and gas companies, a picture emerges of significant, undisclosed—and therefore unaddressed—risks to Canadian companies, financial institutions, pension beneficiaries and savers.

Indeed, lessons may be drawn from the past, where during a period of low oil prices Canada saw a rapid shift in investments. Starting in December 2016, six oil and gas companies sold Canadian assets. These were Koch Industries (December 2016), Equinor (December 2016), Imperial Oil (January 2017), ConocoPhillips (February 2017), Exxon Mobil (February 2017) and Shell (March 2016).

Once the implications of the Paris Agreement are fully priced into the market, oil and gas asset valuations will shift. If this change is sufficiently large, debt covenants may be triggered in companies. This will in turn impact financial institutions, including banks, insurance companies and pension funds. Debt downgrading could ensue, and bank capitalization thresholds could be impacted.

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Published by the International Institute for Sustainable Development.

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