

# Partial Disclosure: Assessing the state of physical and transition climate risk disclosure in Canada

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## Contents

|  |           |
|--|-----------|
| <b>Executive Summary</b>                                   | <b>3</b>  |
| <b>A. Background</b>                                       | <b>5</b>  |
| <b>B. Sources of Climate-Related Risk Disclosures</b>      | <b>6</b>  |
| B.1 TCFD   | 7         |
| B.2 CDP  | 9         |
| B.3 SASB   | 11        |
| B.4 GRESB  | 13        |
| <b>C. The Current State of Disclosures in Canada</b>       | <b>14</b> |
| C.1 The OSFI-Bank of Canada Pilot Study                    | 14        |
| C.2 ISF Study of Physical Risks                            | 14        |
| C.3 TCFD   | 14        |
| C.4 CDP  | 16        |
| C.5 SASB   | 16        |
| C.6 GRESB  | 16        |
| C.7 Recent Regulatory Developments                         | 16        |
| <b>D. Key Themes Arising from Expert Interview Process</b> | <b>18</b> |
| <b>E. Conclusions and Areas for Future Research</b>        | <b>21</b> |
| <b>Appendix A</b>  | <b>22</b> |
| <b>Appendix B</b>  | <b>23</b> |
| <b>Endnotes</b>  | <b>24</b> |

# EXECUTIVE SUMMARY

Canada has ambitious objectives for combating climate change and reaching Net Zero greenhouse gas (GHG) emissions by the year 2050, and Canadian companies face an uncertain future in a global low-carbon economy.

Institutional investors are demanding more and better-quality disclosures of climate-related information from corporations. Unfortunately, the current state of climate-related disclosures is seen as inadequate, and climate risks are not being properly priced by financial institutions, with significant consequences for Canadian competitiveness and the functioning of Canadian markets.

This paper reviews the global landscape on climate-related risk disclosure standards and guidance, with a particular emphasis on the comprehensive standards of the Task Force on Climate-related Financial Disclosures (TCFD). It then looks at progress towards regulations for disclosures, and the current performance of Canadian firms in making disclosures on **physical risk**, or the costs brought on by environmental damage from climate change, and **transition risk**, which is created by the changes in the economy produced by efforts to transition to Net Zero.

An assessment of Corporate Canada's climate-related reporting finds that:

- the *quantity* of reporting firms in Canada is low, with less than half of the largest publicly listed companies in Canada providing TCFD-aligned information;
- the *quality* of those that do report is mediocre overall, and there is a wide range in quality;
- the average performance on transition risk reporting and physical risk reporting is *even lower*;
- there does not appear to be a significant difference in terms of the quality of physical risk and transition risk disclosures that are provided in alignment with TCFD;
- there is a dramatic lack of both quantity and quality in terms of scenario analysis reporting;
- the overall alignment with TCFD requirements is reasonably high; however, clearly the implementation is lacking in terms of providing overall high-quality disclosures.

There are major developments continuing globally and in Canada. In October of 2021, the Canadian Securities Administrators (CSA) issued a consultation paper on proposed disclosure regulations. It is important for Canada to remain consistent with global standards, and unfortunately the CSA proposal falls short of some important TCFD recommendations, which are clearly becoming the global standard. This reality is further evidenced by the inclusion of such TCFD requirements in proposed new rules from the Securities and Exchange Commission (SEC) in the U.S., and the current exposure draft for climate-related disclosures by the International Sustainability Standards Board (ISSB).

As well, in May 2022, the Office of the Superintendent for Financial Institutions released its B-15 Guidelines that established expectations related to federally regulated financial institutions' management of climate-related risks (both physical and transition).

This report's analysis is supplemented with interviews of leading experts on climate and finance. Their insights are powerful. The consensus among interviewees is that Canada has come to recognize the importance of climate-related disclosures, but that we have a long way to go in terms of providing the reliable, consistent, comparable and publicly available and accessible climate-related data that is essential. The critical importance of aligning Canadian regulations with evolving global standards such as the ISSB and SEC was also emphasized.

Our groundwork analysis and interview process both point to several key areas for improvement in climate-related reporting in Canada. These include:

1. The need to improve the *breadth* of climate-related reporting in Canada. Less than half of the largest corporations provided meaningful climate-related reports in 2020, and beyond the largest corporations such reporting barely exists at all.
2. Improve the *quality* of climate-related reporting, which is mediocre on average among the companies that do provide such information.
3. Ensure that reporting is in line with *global standards*, so as not to disadvantage both our capital providers, and the companies themselves that require capital at favorable market prices to prosper and remain competitive.
4. Improve the *accessibility* of the data which does exist.
5. Address issues regarding the *education and leadership* that illustrate the importance of such disclosures, with an increased emphasis on best practices.
6. Improve both the quantity and quality of *scenario analysis*, which provides critical information to both capital providers and disclosing companies (with respect to their strategies and risk management processes).
7. Address *additional information gaps* including the data provided by smaller public companies, private companies, municipalities, etc.

The solutions to the issues noted above are complex, but manageable if approached cooperatively, with clarity of intention, and with strong regulatory leadership and support. They include:

1. Effective and comprehensive regulation that provides globally consistent standards and makes reporting to such standards mandatory. Such an approach will go a long way to directly addressing limitations number 1 through 3 above, as well as numbers 4 and 6.
2. Improve the availability and accessibility of such data. This includes improving the quantity and quality of data that is provided, as well as improving access to data that already exists.
3. Provide improved education and leadership regarding the importance and purpose for both providers and users of climate-related data.

## A. BACKGROUND

Climate-related financial disclosures are essential for the correct pricing of climate-related risks by financial institutions (FIs) and financial market participants. This is necessary for enhancing the functioning of financial markets, including better pricing for insurance contracts, debt instruments, equity investments, real estate transactions, infrastructure investments, and so on.

As stated in the Network for Greening the Financial System (NGFS) May 2021 report “Reliable and comparable climate-related data are crucial for financial institutions (including central banks and supervisors), investors and policymakers to assess financial stability risks, properly price and manage climate-related risks, and take advantage of the opportunities arising from the transition to a low-carbon economy.”<sup>1</sup> The report went on to note that “Persistent gaps in climate-related data hinder the achievement of these objectives.”

Unfortunately, the current state of climate-related disclosures is seen as inadequate, and climate risks are not being properly priced by FIs. This is noted in the comments of Bank of Canada Governor Tiff Macklem: “The potential impact of climate risks is generally underappreciated, and they are not well priced.”<sup>2</sup> As a result, there has been significant demand for improvements in such disclosures, with much of the impetus coming from FIs who need information that is reliable, consistent and comparable in order to properly assess financial opportunities and risks.

For example, in the fall of 2020, International Financial Reporting Standards (IFRS) released a consultation paper to garner feedback regarding the perceived need for a sustainability standards board. The response to this process was overwhelmingly positive and in November of 2021, the IFRS announced the establishment of the International Sustainability Standards Board (ISSB), with offices in Frankfurt and Montreal, mandated to “to develop – in the public interest – a comprehensive global baseline of high-quality sustainability disclosure standards to meet investors’ information needs”.<sup>3</sup>

Then, in November 2020, Canada’s eight largest pension plans issued a rare joint statement advocating that companies provide climate-related disclosures up to the standards of both the Taskforce for Climate-related Financial Disclosures (TCFD) and Sustainable Accounting Standards Board (SASB). And in June 2021, the 10 largest Canadian pensions made a similar statement in response to a request for input by the US Securities and Exchange Commission.

Institutional investors are demanding more and better-quality disclosures from corporations and they are clear about what is at stake. There is a perception that Canada needs to catch up. The results of the Global Risk Institute’s “2021-22 Global Risk Survey” found that “climate change and environmental risks” were rated:<sup>4</sup>

- #3 among the top risks to the Canadian Financial System (CFS)
- the #3 risk in terms of the potential severity of impact on the CFS
- the #3 risk in terms of the “difficulty to manage”

Millani’s “Semi-Annual Study of Canadian Institutional Investors,” from February 14, 2022 noted that “71% of investors interviewed noted they are trying to calculate the carbon footprint of their portfolios. The biggest challenge remains the availability and reliability of climate data as it is not homogenous across all asset classes.”<sup>5</sup> The following quotes from that study highlight some of the frustrations felt by asset owners and asset managers due to the dearth of more comprehensive climate change disclosures:

- “Investors are looking for relevant decision-useful information and when it comes to climate change, we do not have that yet. [...] We are seeing other countries and regions of the world that have made climate disclosures mandatory and we want Canada to be a competitive market.” *Asset Manager*
- “As asset owners, we need to report our own climate-related activities and we need to understand the exposures of the companies we invest in. To do so, we need Scope 1 and 2 emissions and Scope 3 emissions data, if they are material, to understand how these entities are governing climate-related risks and opportunities.” *Asset Owner*

## B. SOURCES OF CLIMATE-RELATED RISK DISCLOSURES

There are numerous sources of climate-related risk disclosures, all of which are **voluntary** reporting standards and frameworks for most (if not all) companies in most jurisdictions, including Canada. Aside from TCFD and SASB which were mentioned above, some other major framework and standard setting institutions include: CDP (formerly the Carbon Disclosure Project); Climate Disclosure Standards Board (CDSB); Global Reporting Initiative (GRI); and, the International Integrated Reporting Council (IIRC).

In September 2020, CDP, CDSB, GRI, IIRC and SASB issued a “Statement of Intent to Work Together Towards Comprehensive Corporate Reporting,” an initiative to collaborate on providing complementary information across their frameworks and standards that would produce joint market guidance.<sup>6</sup> This statement was very well received and should contribute to the work of the newly-established ISSB.

Subsequent to this announcement, in June of 2021, the IIRC and SASB officially announced their merger to form the Value Reporting Foundation.<sup>7</sup> As part of the announcement of the ISSB, the IFRS Foundation completed consolidation of the CDSB and the Value Reporting Foundation during 2022.<sup>8</sup> In addition, the GRI framework was heavily referenced in the construction of new EU sustainability reporting standards, which were recently developed by the European Financial Reporting Advisory Group (EFRAG) Project Task Force.

From the summary above, readers will appreciate that there are a large number of disclosure guidelines out there and a vast array of organizations working on the problem with an impressive assortment of associated acronyms. But we can also see that some consolidation and standardization is starting to happen.

For the purposes of this report, we will focus on the reporting requirements that are consistent with the following four standards and frameworks: TCFD; CDP; SASB; and, GRESB<sup>i</sup>. We place emphasis on TCFD disclosures in particular, since they focus on climate-related disclosures, and comprehensive TCFD disclosures should encompass most (if not all) of the information included in CDP, GRESB and SASB disclosures, at least with respect to climate risk.

While required SASB disclosures are not as detailed as TCFD disclosures with respect to climate risks and opportunities, SASB goes beyond climate change and considers other environmental issues, as well as social and governance issues. Unlike TCFD, SASB also provides industry-specific disclosure guidelines. As a result, TCFD and SASB disclosures are very complementary, which explains the demand for both TCFD and SASB disclosures by Canada’s largest pensions (among other FIs), and also why the ISSB plans to require disclosures that are built upon both frameworks.

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<sup>i</sup> GRESB was formerly known as the “Global Real Estate Sustainability Benchmark,” when launched in 2009 with a sole focus on the real estate sector. It is now referred to simply as GRESB, reflecting the current coverage of real assets, including infrastructure.

## B.1 TCFD

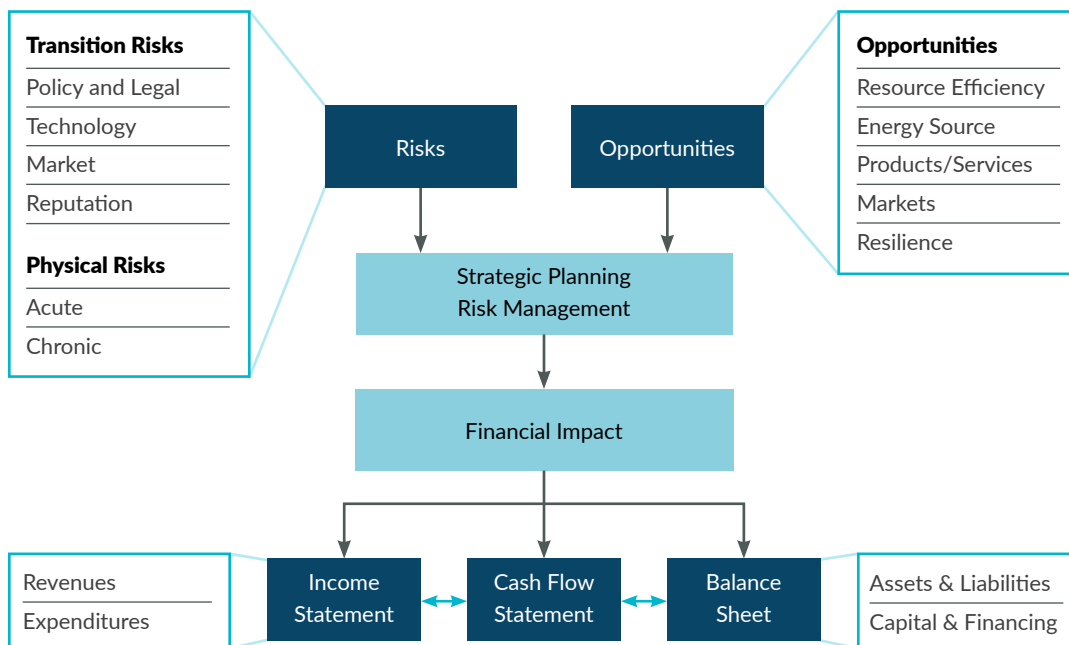
### B.1.1 Reporting Requirements

The TCFD is an industry-led entity that was created in 2015 by the Financial Stability Board (FSB) to provide information to improve financial processes such as investment, lending and insurance underwriting. The FSB undertook a review, at the behest of the G20 Finance Ministers, to determine how the financial sector could better integrate climate-related issues into its decision-making and operating processes. In June 2017, the Task Force issued its framework for climate-related financial disclosures.<sup>2</sup>

Its key features are that such disclosures should be adaptable by all organizations, included in financial filings, designed to provide meaningful forward-looking information, and have a strong emphasis on risks and opportunities related to a transition to a lower-carbon economy.<sup>10</sup> The recommendations emphasize the disclosure of financial estimates and the resilience of organizations to various climate-related scenarios. Figure 1 below is taken from the 2021 TCFD Implementation Guidelines. It illustrates that disclosures are required on opportunities, physical risks, and transition risks that occur due to climate change, how these could affect companies' strategic planning and risk management processes, and the ultimate potential financial impact.<sup>11</sup>

**FIGURE 1**

### Climate-Related Risks, Opportunities, and Financial Impact



The four overarching elements of TCFD disclosures include:<sup>12</sup>

1. **Governance** – describe the roles of the Board and management in dealing with related opportunities and risks.
  - a. Describe the board's oversight of climate-related risks and opportunities.
  - b. Describe management's role in assessing and managing climate-related risks and opportunities.
2. **Strategy** – examine the actual and potential impact on the organization's businesses, strategy and financial planning.
  - a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long-term.
  - b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.
  - c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.
3. **Risk Management** – the processes used to identify, assess and manage associated risks.
  - a. Describe the organization's processes for identifying and assessing climate-related risks.
  - b. Describe the organization's processes for managing climate-related risks.
  - c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.
4. **Metrics and Targets** – used to assess and manage climate-related risks and opportunities.
  - a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
  - b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.<sup>13</sup>
  - c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

## B.1.2 Comments Regarding Physical and Transition Risk Disclosures

TCFD breaks physical risks, the risk of tangible harm from climate change and climate-related weather events, down into two subcategories: *acute*, which incorporates event driven risks like cyclones, floods, hurricanes etc.; and, *chronic*, which incorporates risks associated with longer-term shifts in climate patterns like sustained temperature changes, rising sea levels, chronic heat waves, etc. These subcategories are intended to capture the same level of granularity as the four sub-categories devoted to transition risks, or the risks to investments posed by the move to a low-carbon economy: *policy and legal*; *technology*; *market*; and, *reputation*. TCFD also notes that physical risks could affect income statement items. The fact that there are four transition risk subcategories while there are only two for physical risk does not necessarily mean that transition risk has been given more attention by TCFD. For example, it could just be that transition risk can be broken up into more distinct parts.

In the Strategy section where TCFD outlines scenario analysis under guidance for all sectors they state: "Organizations *should* describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a *transition* to a low-carbon economy consistent with a 2°C or lower scenario and, *where relevant* to the organization, scenarios consistent with increased physical climate-related risks." This statement implies that if physical climate-related risks are not relevant then you do not need to do a scenario analysis that incorporates physical risk impacts. However, it seems that physical risk is inescapable for all companies, either that which directly impacts the company, or by the effect it has on its suppliers, customers, etc.

With respect to the Strategy section, TCFD states that companies in all sectors should disclose "where relevant to the organization, scenarios consistent with increased physical climate-related risks." Transition risk in that same paragraph doesn't receive the same "where relevant" caveat. For transition risks they state that scenario analysis should be consistent with a 2 degrees C or lower warming scenario, but don't specify this with regards to physical risk.



Finally, under the Metrics and Targets category, TCFD states that “Banks should describe the extent to which their lending and other financial intermediary business activities, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.” In a footnote they say this “could include forward-looking metrics, GHG emissions targets and progress against them, reducing emissions in their operations and value chains, and working with customers to support their transition to a low-carbon economy.” This statement addresses transition risk more than physical.

At the industry level, in the supplementary guide for banks, TCFD states that “Additionally, banks should consider disclosing their climate-related risks (transition and physical) in their lending and other financial intermediary business activities.” And in the supplementary guide for Insurance companies they state that “In addition to a 2°C scenario, insurance companies with substantial exposure to weather-related perils should consider using a greater than 2°C scenario to account for physical effects of climate change” with timeframes of short, medium, and long-term milestones.

For non-financial industries, in the Strategy section, TCFD states that firms should disclose “How GHG emissions, energy, and water and other physical risk exposures, if applicable, are considered in capital planning and allocation.” TCFD further recommends disclosing Metrics and Targets for “other physical risk exposures.” TCFD recommends that energy firms should consider providing disclosures on physical impacts such as reliance on water in areas with high water stress. TCFD also singles out Materials and Building companies and recommends disclosing the impacts of stricter constraints on emissions and/or carbon pricing as well as acute and physical risks. TCFD also notes that for Agriculture, Food, and Forest Products firms “absolute and relative impacts of climate-related transition and physical risks will vary between producers and processors of food and fiber.”

## **B.2 CDP**

### **B.2.1 Reporting Requirements**

In 2002, CDP gathered a group of 35 investors who signed its very first climate change disclosure request to 500 of the world’s largest companies - 245 companies responded that year. Now, more than 560 signatory investors with over \$96-trillion in assets request environmental information from companies. With this increase in investor support, the number of companies responding to CDP’s annual disclosure request has risen each year. During 2021, over 13,000 companies, worth over 64% of global market capitalization, disclosed their environmental data through CDP, an increase of 37% from 2020, and almost double the number in 2018 (of 7,000 with 50% global market cap).<sup>14</sup>

CDP collects data through its Questionnaire across three major groups: climate change, water security, and forests. The Questionnaire was revised in 2018 to respond to changes in market needs. This revision included alignment with TCFD, including scenario analysis.<sup>15</sup> Sector-specific questions have also been incorporated for 16 high-impact sectors.

With regards to the difference between 2021 and 2022, 70% of the questions from 2021 remain unchanged. Some of the changes include new questions on transition-aligned spending/revenue and base year scope 3 emissions. Also, 41 new questions were included for financial services organizations, including greater focus on scope 3 disclosures and scope 3 targets.<sup>16</sup> CDP labels this generally as a move to “establish transition focus.” An example of this is the Module C14 Portfolio impact: “[New question for financial institutions] For each portfolio activity, state the value of your financing and insurance of carbon-related assets in the reporting year.” This question uses the TCFD definition of “carbon-related assets.”<sup>17</sup>

## B.2.2 Comments Regarding Physical and Transition Risk Disclosures

CDP data is the most commonly used platform for GHG disclosures emissions data, including scope 1, 2 and 3 disclosures; although only a minority of firms disclose scope 3 emissions. In addition to questions related to GHG disclosures, the CDP Questionnaire continues to evolve and include questions related to physical climate scenarios and Representative Concentration Pathways (RCPs) that are quite detailed.<sup>18</sup> There is also a section that addresses if companies have a physical climate risk component to their overall strategy.

There are 14 modules in the general climate change questionnaire, and there is overlap with TCFD. For example, some modules address governance, risks and opportunities, targets and performance, etc.<sup>19</sup> CDP asks for disclosure on all scopes and then asks if companies excluded any disclosure of emissions. For example, they ask "Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?" They then ask for details and why it wasn't reported. With respect to scenario analysis and looking at transition versus physical risks, CDP lists several options under each, as depicted in Figure 2. It might be tempting to argue that transition risks have been devoted greater attention because they have been given more scenario options; however, this depends on the total amount of relevant information disclosed.

**FIGURE 2**

### Climate-related scenario

| <b>Transition scenarios</b>   | <b>Physical climate scenarios</b>   |
|---|---|
| <ul style="list-style-type: none"><li>• IEA NZE 2050</li><li>• IEA B2DS</li><li>• IEA 2DS</li><li>• IEA 450</li><li>• IEA SDS</li><li>• IEA APS</li><li>• IEA STEPS (previously IEA NPS)</li><li>• IEA CPS</li><li>• Greenpeace</li><li>• DDP</li><li>• IRENA</li><li>• BNEF NEO</li><li>• NGFS scenarios Framework [Financial Services only]</li><li>• Customized publicly available transition scenario</li><li>• Bespoke transition scenario</li></ul> | <ul style="list-style-type: none"><li>• RCP 1.9</li><li>• RCP 2.6</li><li>• RCP 3.4</li><li>• RCP 4.5</li><li>• RCP 6.0</li><li>• RCP 7.0</li><li>• RCP 8.5</li><li>• Customized publicly available physical scenario</li><li>• Bespoke physical scenario</li></ul> |

## B.3 SASB

### B.3.1 Reporting Requirements

SASB launched its 77 industry-specific reporting standards in November 2018. SASB has worked closely with a large investor advisory group since 2011 to determine the *material* ESG factors issuers should be updating investors on. It is also important to recognize that SASB provides a breakdown of issues that are most likely to be material on an *industry-specific* basis.

Based on their framework, SASB developed a Materiality Map that provides information organized along five sustainability dimensions as reported below:

- Environment
  - E.g., GHG Emissions / Air Quality / Energy Management / Water & Wastewater Management / Waste & Hazardous Materials Management / Ecological Impacts
- Social Capital
  - E.g., Human Rights & Community Relations / Customer Privacy / Data Security / Access & Affordability / Product Quality & Safety / Customer Welfare / Selling Practices & Product Labeling
- Human Capital
  - E.g., Labor Practices / Employee Health & Safety / Employee Engagement, Diversity & Inclusion /
- Business Model & Innovation
  - E.g., Product Design & Lifecycle Management / Business Model Resilience / Supply Chain Management / Materials Sourcing & Efficiency / Physical Impacts of Climate Change
- Leadership & Governance
  - E.g., Business Ethics / Competitive Behavior / Management of the Legal & Regulatory Environment / Critical Incident Risk Management / Systemic Risk Management.<sup>20</sup>

The SASB approach applies the following Five-Factor Materiality Test to the issues across the five sustainability dimensions noted above in order to identify the most material:

1. Financial impacts and risk
2. Legal, regulatory, and policy drivers
3. Industry norms and competitive drivers
4. Investor / stakeholder concerns and trends
5. Opportunities for innovation

An abbreviated example of the summary output from this process is provided in Figure 3 on the following page.

**FIGURE 3**

| SUSTAINABILITY ISSUE / OPPORTUNITY                    |                                 |                                    |                                      |                                      |                              | Total Score | Notes / Comments   |
|---|---------------------------------|------------------------------------|--------------------------------------|--------------------------------------|------------------------------|-------------|--|
|   | Direct Financial Impacts & Risk | Legal, Regulatory & Policy Drivers | Industry Norms & Competitive Drivers | Stakeholder Concerns & Social Trends | Opportunities for Innovation |             |  |
| <b>ENVIRONMENT</b>                                    |                                 |                                    |                                      |                                      |                              |             |  |
| GHG Emissions   | 10                              | 10                                 | 7                                    | 7                                    | 7                            | 41          | Hydrocarbon reserve exposure to climate change mitigation efforts              |
| Air Quality   | 5                               | 7                                  | 5                                    | 5                                    | 5                            | 27          | More strategic approach to pollutants including NO <sub>2</sub> , VOCs, and PM |
| Water Management                                      | 8                               | 6                                  | 7                                    | 5                                    | 10                           | 36          | Need plan to secure water supplies without exacerbating stressed regions       |
| Biodiversity Impacts                                  | 3                               | 7                                  | 2                                    | 6                                    | 2                            | 20          | Some exposure to protected areas and endangered species                        |
| <b>SOCIAL CAPITAL</b>                                 |                                 |                                    |                                      |                                      |                              |             |  |
| Security, Human Rights & Rights of Indigenous Peoples | 4                               | 8                                  | 6                                    | 9                                    | 4                            | 31          | Improve risk management plan for operations in areas of conflict               |
| Community Relations                                   | 3                               | 5                                  | 5                                    | 10                                   | 2                            | 25          | Strengthen community outreach in later project stages                          |
| <b>LEADERSHIP &amp; GOVERNANCE</b>                    |                                 |                                    |                                      |                                      |                              |             |  |
| Business Ethics & Payments Transparency               | 5                               | 9                                  | 5                                    | 8                                    | 1                            | 28          | Significant operations in areas of high corruption                             |
| Health, Safety & Emergency Management                 | 5                               | 8                                  | 6                                    | 7                                    | 3                            | 29          | Renew focus on emergency preparedness and response, safety culture             |
| Reserves Valuation & Capital Expenditures             | 10                              | 9                                  | 3                                    | 7                                    | 7                            | 36          | Significant CAPEX for exploration/development of new fossil fuel reserves      |
| Management of the Legal & Regulatory Environment      | 3                               | 4                                  | 5                                    | 3                                    | 4                            | 19          | Minimal political activity around company's core operations                    |

0 = no impact  
5 = potential for impact  
10 = significant impact  
(immediacy, likelihood, magnitude of impact)

36-50 high risk/opportunity = likelihood of significant impacts  
21-35 medium risk/opportunity = potential for modest impacts  
0-20 low risk/opportunity = not significant at this time

Source: <http://www.truevaluemetrics.org/DBpdfs/Metrics/SASB/SASB-Implementation-Guide-for-companies-2015.pdf>, page 11.

SASB states “SASB Standards can be used by companies as a practical tool for implementing the principles-based framework recommended by the Task Force on Climate-related Financial Disclosures (TCFD).” In fact, they even provide a TCFD implementation guide.<sup>21</sup>

Two key differences between TCFD and SASB include:

1. “Where the CDSB Framework and the TCFD recommendations are applicable across all sectors of the economy, each of the 79 SASB standards is designed for a specific industry.”<sup>22</sup>
2. “On the other hand, the CDSB Framework and the SASB standards are primarily focused on *specific* risk – those residual, uncorrelated, and therefore theoretically diversifiable.” Whereas they say that TCFD is more concerned with *systemic* climate-related risks facing the financial system at large.

### B.3.2 Comments Regarding Physical and Transition Risk Disclosures

Because of SASB’s *materiality-driven, industry-specific* approach, the existing standards include scope 1 emissions only where they are reasonably likely to have a material impact on the financial condition or operating performance of companies in an industry. Therefore, in terms of scope 1 emissions disclosures, the SASB standards and TCFD recommendations may not always be in alignment, since in 2021 TCFD changed reporting recommendations such that the “disclosure of Scope 1 and Scope 2 GHG emissions to be independent of a materiality assessment.”<sup>23</sup> There is likely even greater divergence with respect to reporting of scope 2 and 3 GHG emissions.

Thus, it appears that another major difference is that TCFD recommends disclosing all three levels of emissions, whereas SASB requires disclosures only if the emissions are materially significant. SASB explains that not all industry standards ask for emissions or scope 1 disclosure (i.e., only 22 out of 79).<sup>24</sup> However, SASB does note that the use of SASB standards does not preclude disclosure of scope 1, 2, and 3 by a firm in any industry to prepare disclosure in accordance with TCFD, which can be seen on the first page of their implementation guide.<sup>25</sup>

## B.4 GRESB

### B.4.1 Reporting Requirements

“Established in 2009, GRESB has become the leading ESG benchmark for real estate and infrastructure investments across the world,”<sup>26</sup> and is now “used by more than 170 institutional investors to monitor their investments, engage with their managers and make informed decisions.”<sup>27</sup> GRESB offers products similar to what is available for CDP data (e.g., climate risk platform and data analytics) and also provides transition risk reporting (auto generated).

GRESB provides a lot of information regarding its processes, including several very long documents and excel files under “assessment resources.”<sup>28</sup> The primary tool is the GRESB Real Estate Assessment where companies provide GRESB with self-reported data via a questionnaire.<sup>29</sup> GRESB analyzes the data and provides a score and a benchmark, which in turn can be used in investment, engagement, and decision-making processes.

Companies submit data and then GRESB Investor Members can reference it. Scores are calculated using weighting across three components: management (30%); performance (70%); and, development (70%). Firms are assigned *either* a performance “or” a development score. GRESB takes the answers from the survey, validates the information, and then runs a program that determines a score without manual intervention.

The real estate assessment methodology aligns with international reporting frameworks, such as TCFD, GRI, and PRI.<sup>30</sup> GRESB also provides services for the EU’s Sustainable Finance Disclosure Regulation (SFDR) reporting, and state that their system and data is aligned with SFDR.

### B.4.2 Comments Regarding Physical and Transition Risk Disclosures

GRESB states that they provide their GRESB Real Estate Scoring Document so that it is “shared for information purposes in an effort to increase transparency around the Assessment, Methodology and Scoring processes.” Some examples of the questions are:

- “Has the entity made a public commitment to ESG leadership standards and/or principles?”
- “Is the entity’s GHG emissions target science-based?”

The two questions directly related to transition risk include:

- “Does the entity have a systematic process for identifying transition risks that could have a material financial impact on the entity?”
- “Does the entity have a systematic process to assess the material financial impact of transition risks on the business and/or financial planning of the entity?”

The two questions directly related to physical risk are identical except with physical risk inserted in place of transition risk. In other words, both risks are treated exactly equally, at least for this dimension of disclosure.

GRESB differs from TCFD in terms of the main categories. In particular, GRESB groups their questions into three main categories:

- Management (which is similar to Governance for TCFD)
- Performance (targets, GHG emissions, building certifications, etc.)
- Development (upcoming construction projects, etc.).

Not surprisingly, GRESB asks more questions about buildings specifically than does the TCFD. For example, questions refer to the listing of official green building certificates, land use, and, “Does the entity have minimum energy efficiency requirements for development projects?”<sup>31</sup> However, there are also a lot of similarities with TCFD. For example, GRESB includes two questions on scenario analysis, one of them asking if your organization does it, and another asking for details of the scenario analysis. They also have several questions addressing both transition and physical risk. Questions like: “have you identified” and “do you incorporate it into your strategy?” And further: “describe these risks” and “indicate how they influence your financial decision making?”

## C. THE CURRENT STATE OF DISCLOSURES IN CANADA

### C.1 THE OSFI-BANK OF CANADA PILOT STUDY

The Bank of Canada and the Office of the Superintendent of Financial Institutions (OSFI) completed their climate scenario analysis pilot study in January of 2022.<sup>32</sup> The report suggests that “Scenario analysis is a useful tool for identifying potential risks in an environment of considerable uncertainty.” The project was implemented by examining plausible global warming scenarios and estimating the *transitional costs* across sectors due to “potential material risks to the economy and the financial system.” In particular, the scenarios were used to analyze (for pilot participants), the “climate transition-related credit and market risks to selected elements of their asset portfolios.”

An important observation from pilot participants was the existence of **significant data gaps**, as noted in the report: “A common message we heard from a broad range of financial institutions was that there is a need to develop and standardize methodologies for climate risk assessment and to improve the availability of climate-related data.” The accompanying press release noted the deliberate focus on transitional risks and not physical risks, but notes that physical risks would also be expected to have “significant implications for the global and Canadian economies and the financial system. This is an area for future work.”<sup>33</sup>

### C.2 ISF STUDY OF PHYSICAL RISKS

The results of the OSFI-Bank of Canada pilot project report discussed above leave an important void with respect to the impact of *physical* risks and the associated costs of climate change for Canada. A recent report by the Institute for Sustainable Finance (ISF) fills this void at a macro level by updating and extending to Canada, the ground-breaking Dynamic Integrated Climate and Economy (DICE) model developed by 2018 Nobel Laureate William Nordhaus.<sup>34</sup> The results of this report illustrate stark differences in physical costs under various warming scenarios. For example, aggregate capital losses from 2020 to 2100 range from \$2.773-trillion under a 2°C warming scenario to almost double that amount at \$5.520-trillion under a 5°C scenario. In present value (PV), an increase from 2°C to 3°C warming by 2100 leads to *additional* physical damage with a PV of \$80.9-billion, which escalates to \$187.4-billion under a 4°C scenario.

The report goes on to compare the PV of climate damage under a 5°C warming scenario to those under a 2°C scenario and relate the difference in these figures to the PV of undertaking required annual investments to achieve Canada’s emissions reduction targets. These results suggest that the PV of the difference in damages is \$10.1b to \$45.4b *larger* than the PV of the required investments. In other words, undertaking the required investments to reduce GHG emissions more than pays for itself in terms of avoided physical damage alone, and without taking into account the potential economic benefits of transitioning to a low-carbon economy.

### C.3 TCFD

The NGFS provided support for the TCFD and called for “achieving robust and internationally consistent climate and environment-related disclosures” in an April 2019 report.<sup>35</sup> However, at present, adoption of the TCFD recommendations is **voluntary** in most jurisdictions; although momentum is building to make it mandatory in numerous countries and regions around the globe. For example, both New Zealand and the U.K. recently implemented plans to phase in mandatory TCFD reporting, while other countries (including Canada and the US) are engaged in processes reviewing the possibility of doing so.

By November 2021, there were 2,700 TCFD supporters globally (up from 1,500 in September 2020), including financial institutions (FIs) responsible for over US\$150-trillion. As of August 2021, there were 94 Canadian TCFD supporters. This included 49 FIs, 38 non-financial firms, as well as three government and four other organizations.<sup>36</sup> According to Millani, as of 2021, 55% of S&P/TSX Composite Index issuers reported in alignment with the TCFD recommendations, up from 42% in 2020, and 30% in 2019.<sup>37</sup>

It is also notable that the Government of Canada publicly endorsed the recommendations in 2020, and made reporting in alignment with TCFD recommendations a condition for companies applying to receive emergency COVID funding. In addition, Canada will require banks and insurance companies to provide disclosures on their climate-related risks and exposures aligned with the TCFD framework beginning in 2024, according to the April 2022 federal budget.<sup>38</sup>

Table 1 provides the summary results of an ISF review of the reports of 69 Canadian companies included in the S&P/TSX Composite Index for which we could find TCFD reports, or TCFD-aligned sections that were included in the corporate sustainability reports. The scoring system is described in detail in Appendix B. The disclosures are all rated from 1 to 5, with 5 being the best score. We rate the disclosures across five categories:

- Disclosures related to transition risk
- Disclosures related to physical risk
- Whether or not they conduct scenario analysis, and if so the level of detail provided
- An overall assessment of the alignment with required TCFD disclosures
- An overall assessment of the quality of the climate-related risk disclosures<sup>39</sup>

**TABLE 1**

| <b>Sector</b>          | <b>No.</b> | <b>Transition risk disclosures</b> | <b>Physical risk disclosures</b> | <b>Conduct scenario analysis</b> | <b>Overall alignment with TCFD</b> | <b>Overall score</b> |
|------------------------|------------|------------------------------------|----------------------------------|----------------------------------|------------------------------------|----------------------|
| Communication Services | 4          | 4.8                                | 4.2                              | 2.5                              | 5                                  | 4.5                  |
| Industrials            | 7          | 4                                  | 4.3                              | 2                                | 4.4                                | 3.9                  |
| Energy                 | 13         | 3.3                                | 3.3                              | 2.3                              | 4.1                                | 3.6                  |
| Utilities              | 7          | 2.6                                | 2.7                              | 1                                | 4.3                                | 3.6                  |
| Financials             | 11         | 3.5                                | 3.4                              | 1.5                              | 4.2                                | 3.5                  |
| Consumer Discretionary | 3          | 3.3                                | 3.3                              | 0.7                              | 3.7                                | 3                    |
| Information Technology | 1          | 1                                  | 2                                | 1                                | 4                                  | 3                    |
| Materials              | 14         | 1.6                                | 2.3                              | 0.9                              | 3.5                                | 2.9                  |
| Real Estate            | 5          | 1.2                                | 2.4                              | 0.6                              | 3.4                                | 2.6                  |
| Basic Materials        | 1          | 1                                  | 1                                | 0                                | 3                                  | 2                    |
| Consumer Cyclical      | 1          | 1                                  | 0                                | 0                                | 3                                  | 2                    |
| Consumer Staples       | 2          | 1                                  | 1                                | 1                                | 2.5                                | 2                    |
| <b>Average</b>         | <b>5.8</b> | <b>2.4</b>                         | <b>2.5</b>                       | <b>1.1</b>                       | <b>3.8</b>                         | <b>3</b>             |
| <b>Median</b>          | <b>5</b>   | <b>2.4</b>                         | <b>2.5</b>                       | <b>1</b>                         | <b>3.8</b>                         | <b>3</b>             |

Table 1 provides several interesting and important observations. First, the *quantity* of reporting firms is low, with less than half of the largest publicly listed companies in Canada providing TCFD aligned information. Second, the average overall score is 3 out of 5, so the overall *quality* of those that do report is mediocre. Third, the average performance on transition risk reporting and physical risk reporting is *even lower* at 2.4 and 2.5 respectively. Fourth, there does not appear to be a significant difference in terms of the quality of physical risk and transition risk disclosures that are provided in alignment with TCFD. Fifth, there is a noticeable lack of both quantity and quality in terms of scenario analysis reporting. Sixth, the overall alignment with TCFD requirements is reasonably high at 3.8; however, clearly the implementation is lacking in terms of providing overall high-quality disclosures.

Two recent globally-focused reports provide results that are consistent with our overall observations for Canada. For example, TCFD's recent status report used Artificial Intelligence and natural language processing to review publicly available reports for over 1,400 large companies worldwide.<sup>40</sup> The study reported increasing levels of disclosure across all regions and growing TCFD-aligned information. It further showed that disclosing climate risk (physical and transition) is more common compared to the resilience of strategy (scenario analysis). The report additionally went on to survey asset managers and owners on their disclosure practices, receiving 229 responses out of 3,000 financial institutions. The respondents' levels of transition and physical risk disclosures were similar, with 36% of assets owners reporting physical risk and 38% reporting transition risks.

A second report, EY's Global Climate Risk Barometer of September 2022, examined 1,500 companies worldwide.<sup>41</sup> This report evaluated company disclosures in terms of coverage and quality of TCFD reporting. The report assigned Canadian companies a slightly higher than average TCFD disclosure quality score of 53% versus 44% worldwide. It also noted that "Both physical and transition risks attracted nearly equal focus" with physical risk analysis being present in 49% of the companies featured in the Barometer report and transition risk being present in 51%.

## **C.4 CDP**

As mentioned above, during 2021, over 13,000 companies, worth over 64% of global market capitalization, disclosed their environmental data through CDP.<sup>42</sup> According to data that was reported to CDP during 2021, and represents (mostly) emissions that occurred in 2020, we found that:

- 158 Canadian firms reported to CDP.
- For scope 1 emissions, 133 firms reported concrete information.<sup>43</sup>
- For scope 2 emissions, 128 firms provided concrete figures. In other words, virtually all the companies that reported scope 1 also reported scope 2 emissions.
- For scope 3 emissions, 103 firms provided concrete figures.<sup>44</sup>

## **C.5 SASB**

By September 2022, there were 1,360 SASB reporters, more than double the 556 SASB reporters in 2020, and more than 10 times the 2019 number of 177. The number of non-U.S. reporting firms also continues to climb, hitting 60% by September 2021 versus 39% in 2020.<sup>45</sup> The majority of adopters include them in some report, including 10K reports. Global investor support for SASB standards had grown to 306 firms with \$80-trillion assets under management (AUM) by September 2022 – well more than double the 2019 number.<sup>46</sup> According to Millani, as of 2021, 75% of S&P/TSX Composite Index issuers reported in alignment with the SASB guidelines, up from 56% in 2020, 36% in 2019, and only 6% during 2018.<sup>47</sup>

## **C.6 GRESB**

GRESB's website indicates the following number of GRESB real estate participants during 2021, broken down by major region: the Americas – 88; Africa – 4; Asia – 113; Europe – 78; and, Oceania – 15. A recent report suggests that 41 Canadian companies participated in GRESB during 2021.<sup>48</sup>

## **C.7 RECENT REGULATORY DEVELOPMENTS**

In October of 2021, the Canadian Securities Administrators (CSA) issued a consultation paper requesting feedback on recommendations that included a phased in approach to adopting a significant portion of the TCFD recommendations. While this initiative is a very encouraging step in the right direction, the proposal does depart from TCFD reporting on two important issues: (1) potentially providing issuers with the option NOT to disclose their greenhouse gas (GHG) emissions if they provide an explanation of why they have chosen not to do so, or alternatively reporting scope 1 emissions and providing reasons for not reporting scope 2 and 3 emissions; and, (2) excluding the requirement to include scenario analysis.<sup>49</sup> It is important for Canada to remain consistent with global standards, and unfortunately this proposal, while a step in the right direction, falls short of TCFD recommendations which have become the global standard. This is evident when we look at the two recent initiatives discussed below.



The Securities and Exchange Commission (SEC) in the United States recently proposed new rules to improve climate-related disclosures. The SEC Fact Sheet “Enhancement and Standardization of Climate-Related Disclosures” includes:<sup>50</sup> “proposed rule amendments that would require a domestic or foreign registrant to include certain climate-related information in its registration statements and periodic reports...” The document notes that “The proposed disclosures are similar to those that many companies already provide based on broadly accepted disclosure frameworks, such as the Task Force on Climate-Related Financial Disclosures and the Greenhouse Gas Protocol.”

On March 31, 2022 the ISSB made two important announcements. First, they released an Exposure Draft for climate-related disclosures that includes the recommendations of the TCFD<sup>51</sup> Secondly, they announced their plans to build on the work of existing investor-focused reporting initiatives in developing global sustainability disclosures. These plans include building on SASB’s industry-based Standards, which would serve as a starting point for reporting requirements.<sup>52</sup>

In May 2022, OSFI released its B-15 Guidelines that established expectations related to federally regulated financial institutions’ (FRFIs) management of climate-related risks (both physical and transition).<sup>53</sup> OSFI extended the public consultation period for B-15 until September 30, 2022. Overall, the Guidelines are meant to produce three expected outcomes from FRFIs which are:

1. “The FRFI understands and mitigates against potential impacts of climate-related risks to its **business model and strategy.**”
2. “The FRFI has appropriate **governance and risk management practices** to manage identified climate-related risks.”
3. “The FRFI remains **financially resilient** through severe, yet plausible, climate risk scenarios, and **operationally resilient** through disruption due to climate-related disasters.”

To achieve these outcomes the B-15 Guideline includes two chapters: (1) Governance and Risk Management Expectations and (2) Climate-Related Financial Disclosures. Both chapters also have several Principles that get into specifics. For example, under the disclosure chapter these include items such as disclosing reliable, verifiable, objective, and consistently reported information over time. Under the Governance and Risk Management chapter, Principles include the use of climate scenario analysis, processes to price climate risk-sensitive assets, and capital and liquidity buffers for climate-related risks. Overall, the Guideline provides specifics on how FRFIs can effectively manage climate-related risks.

## D. KEY THEMES ARISING FROM EXPERT INTERVIEW PROCESS

We supplement our analysis of climate-related disclosures with an interview process that engaged seven experts who were chosen to provide diverse perspectives on the state of disclosures in Canada, all of whom are listed in Appendix A. This section discusses the key themes arising from this process.

Overall, the responses from our interview process provide strong support for our general assessment of disclosures based on our groundwork that is discussed above.

The consensus among interviewees is that Canada has come to recognize the importance of climate-related disclosures, but that we have a **long way to go** in terms of providing reliable, consistent, comparable and publicly available and accessible climate-related data. The critical importance of aligning Canadian regulations with evolving global standards such as the ISSB and SEC was also emphasized.

Some notable comments include:

- “...it’s very nascent” – Craig Stewart, IBC
- “We have a lot to do” – Steve Mennill, CMHC
- “...the state of reporting in Canada is very much in flux” – Catherine Ann Marshall, RealAlts: Real Asset ESG Consulting
- “...the quality of the disclosures varies quite a bit” – Pamela Steer, CPA Canada
- “...its more of a patchwork” – Alyson Slater, GRI
- “A lot of work has been done, but to date, there is not consensus among securities regulators on disclosure requirements; in contrast, the Office of the Superintendent of Financial Institutions currently has proposed disclosure requirements that align with international developments and will require disclosure of climate-related matters for federally-regulated financial institutions.” – Janis Sarra, UBC and Canada Climate Law Initiative
- “...there’s a difference between what companies are saying and what they’re doing” – Adam Rochweg, Manifest Climate

A number of recurring themes contributing to this lack of progress emerged during the interviews. We discuss three of the most frequently raised issues below:

## **1. Information Gaps and a General Lack of Leadership**

The need for better education, understanding and leadership regarding the importance of providing quality disclosures was echoed by all interviewees. For example, Alyson Slater noted the existence of a “skills deficiency” in producing, assuring and interpreting reported data, while Craig Stewart, Adam Rochweg and Catherine Ann Marshall stressed the critical need for climate-related education, including education with respect to “best practices.” Steve Mennill remarked on the need for “thought leadership,” while Pamela Steer emphasized that such education should be embedded in the training for critical members of the financial ecosystem, such as those holding CPA and CFA designations.

## **2. Existing Data and Models are Not Forward Looking**

Several interviewees noted that existing climate data is historical in nature and not forward looking. It was further noted that the physical risk models themselves that are currently being used are based on historic experience, and that many of these models are global models, some of which do not reflect the Canadian experience. Craig Stewart summed up the issues with these models succinctly, suggesting that: “The physical risk models are not always grounded in the Canadian reality, and that leaves our companies wary.” For example, independent illustrations of events that were not predicted by existing models include two recent extreme flooding incidents — one in Quebec, and another in the Fraser Valley of B.C.

## **3. Much of the information we need exists, but is not publicly available and accessible**

Another important issue that was echoed by most interviewees was that the amount of data that is available and accessible is much less than the aggregate amount of climate risk data that already exists. For example, Pamela Steer suggested that “we have issues with respect to data quality, data availability, and accessibility,” while Steve Mennill noted that “most of the information we need exists,” but that “it’s not publicly available.” Alyson Slater linked this issue back to the skills deficiency gap, noting that “There’s a lot of good physical risk data out there but building the bridge is needed for that to be used for business assessment.”

While all interviewees indicated concerns regarding the general state of climate-related disclosures, when it came to the differences between the quality of disclosures and data related to physical versus transition risks, we found a variety of opinions. Overall, this difference of opinion is consistent with our observations with respect to required and actual disclosures in Sections B and C, and can also be related to the background perspective of the individual interviewees.

Three of the interviewees suggested *significant* and similar deficiencies in disclosures related to *both* physical and transition risks. For example, Janis Sarra suggested that there was a distinction in the emphasis of disclosures across sectors: “I’d say that different sectors are focusing on different things. Some are focusing on transition risks, and some are focusing on physical risk.” This is consistent with our observations in Table 1.

The other interviewees were split on this issue. For example, Craig Stewart stated that “there hasn’t been enough focus on physical risk in the country... most of the dialogue has been around transition risk.” With respect to why transition risk disclosures might be more informative than those regarding physical risk, Pamela Steer noted “I think transition risks are a little less scary than a physical risk, in that a physical risk is immovable while a transition risk can more likely be managed.” In contrast, Catherine Ann Marshall stated that “I think that there are really, really big gaps on the transition risk side.” Finally, Steve Mennill noted that “transition risk in the housing system is high” and further that “as an industry, we haven’t really grasped how profound the changes need to be.”

Several important gaps in available information were noted during the interview process. While most interviewees noted the important role that large companies and FIs can play in leading the way and demonstrating best practices when it comes to disclosures, there were repeated concerns regarding limited data availability as we move to smaller players. For example, Pamela Steer stated “Quality of data varies significantly and tends to degrade as the size of companies decreases. When you get to privately held companies, which are, of course, the vast majority of Canadian organizations, quality moves from degraded to essentially non-existent.”

A commonly expressed concern was the ability of organizations to integrate climate information into strategy and risk management processes and decisions. For example, Alyson Slater suggested that we face a “bigger question about how to build physical risk management capacity,” and that “I don’t think we have anywhere near that today.” Adam Rochweg states that “the major gap that we see across all sectors and across all TCFD aligned reporting, or just climate reporting, is governance.” He further notes that climate data is too often “siloes off,” climate opportunities are too often ignored, and that metrics and targets are often the first thing companies want to show, but the other parts of TCFD disclosures are more important, since they help drive these targets. As a result of these limitations, disclosures are often not well tied to strategic planning and financial impacts.

Interviewees identified the limited percentage of disclosures that included scenario analysis as a significant and important gap, which is consistent with our results provided in Table 1. As Janis Sarra stated “I don’t know how you actually can do strategic planning without thinking through what the various scenarios are.” Pamela Steer noted that one contributing issue is the “asymmetric” nature of such disclosures since “generally speaking you’re not going to be rewarded as much for goodness as you’re going to be punished for badness.”

Several other gaps were identified during the interview process. For example, Steve Mennill noted that while there exists meaningful data regarding expected “frequency” of flooding, there is a distinct lack of data with regards to the potential “severity” of damages caused. He also noted gaps with respect to other types of physical risk data, noting for example that with respect to wildfire risk “we have very, very little on that – almost nothing.” Finally, Janis Sarra identified the lack of information regarding “transition interim targets and the transition plans” as “probably the single biggest gap in Canada that I think on a policy basis needs to be addressed.” She also noted that this is one important issue on which the recent ISSB and SEC proposals have “leapfrogged” Canadian regulation and the recent CSA proposal in terms of required disclosures.

## E. CONCLUSIONS AND AREAS FOR FUTURE RESEARCH

Our groundwork analysis and interview process both point to several key areas for improvement in climate-related reporting in Canada. These include:

1. The need to improve the *breadth* of climate-related reporting in Canada. Less than half of the largest corporations provided meaningful climate-related reports during 2020, and beyond the largest corporations such reporting barely exists at all.
2. Improve the *quality* of climate-related reporting, which is mediocre on average among the companies that do provide such information.
3. Ensure that reporting is in line with *global standards*, so as not to disadvantage both our capital providers, and the companies themselves that require capital at favourable market prices to prosper and remain competitive.
4. Improve the *accessibility* of the data which does exist.
5. Address issues regarding the *education and leadership* that illustrate the importance of such disclosures, with an increased emphasis on best practices.
6. Improve both the quantity and quality of *scenario analysis*, which provides critical information to both capital providers and disclosing companies (with respect to their strategies and risk management processes).
7. Address *additional information gaps* including the data provided by smaller public companies, private companies, municipalities, etc.

The solutions to the issues noted above are complex, but manageable if approached cooperatively, with clarity of intention, and with strong regulatory leadership and support. In any event, simply ignoring the issues will not make them go away. These solutions include:

1. Effective and comprehensive regulation that provides globally consistent **standards** and makes reporting to such standards **mandatory**. Such an approach will go a long way to directly addressing limitations number 1 through 3 above, as well as numbers 4 and 6.
2. Improve the **availability and accessibility** of such data. This includes improving the quantity and quality of data that is provided, as well as improving access to data that already exists.
3. Provide improved **education and leadership** regarding the importance and purpose for both providers and users of climate-related data.

# APPENDIX A

## List of Interviewees

Catherine Ann Marshall, CFA. Principal at RealAlts: Real Asset ESG Consulting.

Steve Mennill. SVP and Chief Climate Officer at Canada Mortgage and Housing Corporation.

Adam Rochweg. Climate Strategist at Manifest Climate. Global Fellow at Centre for International Sustainable Development Law.

Dr. Janis Sarra. Professor of Law at the University of British Columbia. Principal Co-Investigator at Canadian Climate Law Initiative.

Alyson Slater. Senior Director, Sustainable Finance at Global Risk Institute.

Pamela Steer, FCA, FCPA, CFA, CPA. President and CEO at Chartered Professional Accountants of Canada.

Craig Stewart, Vice President, Climate Change and Federal Issues at Insurance Bureau of Canada.

## APPENDIX B

### TCFD reporting scoring system

For scoring scenario analysis, scores were allocated as the following:

- 0 – no scenario analysis and no acknowledgement of the tool
- 1 – acknowledge the tool's existence and state work is underway
- 2 – state that they do scenario analysis, provide some detail, but do not formally present results
- 3 – middle ground quality, may use non-standardized scenarios, not broken up into transition and physical risks, few details and results provided
- 4 – good quality, use some different scenarios, not broken up into transition and physical risks
- 5 – top notch quality, use high- and low-carbon scenarios, broken up into physical and transition risks, lots of detail provided

For physical and transition risk disclosure:

- 0 – nothing provided
- 1 – bare minimum, acknowledge these risks
- 2 – some disclosure, vague wording
- 3 – looked at some subcategories, some detail provided
- 4 – good detail
- 5 – top notch, sub categories addressed, very detailed, financial impacts discussed

For TCFD alignment, each subcategory was evaluated (Governance, Strategy, Risk Management, and Metrics and Targets). Then the average was taken across these 4 subcategories. Main subcomponents were evaluated based on detail and if they were present in the report.

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- 39 The overall score and alignment with TCFD can be higher than the average scores for disclosures related to either transition and/or physical risk, since these represent only one component of overall TCFD compliance. For example, these risks are found in Strategy under the risks and opportunities section, but there are also other major components including Governance, and Metrics and Targets.
- 40 Source: TCFD, "Task Force on Climate-related Financial Disclosures 2022 Status Report," October 2022.
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- 42 Source: CDP, "CDP reports record number of disclosures and unveils new strategy to help further tackle climate and ecological emergency," October 14 2021.
- 43 Concrete responses refers to those that provided estimates (i.e., actual numbers).
- 44 In a separate May 2022 ISF report that examines TSX Index companies (titled "An Update on Canadian Corporate Performance on GHG Emissions Disclosures and Target Setting") the ISF found that 96 (41.6% of Index companies) provide partial scope 3 disclosures. This number included 57 companies (24.7%) that disclose under more than three of 16 scope 3 categories, and 42 companies (18.2%) that disclose under more than 5 categories. Presumably many companies only report scope 3 emissions under categories where they deem such emissions would be considered material. In fact, no firms disclose under all 15 categories, with only six disclosing on more than 10 categories, and with 12 representing the highest number of categories reported.
- 45 Source: SASB, Global use of SASB standards.
- 46 Source: Ibid.
- 47 Source: Millani, "Millani's 6th Annual ESG Disclosure Study: A Canadian Perspective," September 2022.
- 48 Source: "Top 10 Real INSIGHTS, ESG Trend Report".
- 49 Source: OSC, "Canadian securities regulators seek comment on climate-related disclosure requirements," October 18, 2021.

- 50 Source: SEC Fact Sheet "Enhancement and Standardization of Climate-Related Disclosures," March 21, 2022.
- 51 Source: "ISSB delivers proposals that create comprehensive global baseline of sustainability disclosures," March 31, 2022.
- 52 Source: IFRS, "ISSB communicates plans to build on SASB's industry-based Standards and leverage SASB's industry-based approach to standards development," March 31, 2022.
- 53 Source: OSFI, "OSFI extends consultation deadline for Draft Guidelines B-10 and B-15".