

# Assessing Current Canadian Corporate Performance on GHG Emissions, Disclosures and Target Setting

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## Executive Summary

To assess the current state of Canadian corporate disclosure of GHG (greenhouse gas) emissions reporting, target setting, and the potential impact of firms achieving their emissions reduction targets, researchers at the Institute for Sustainable Finance (ISF) examined the firms in the S&P/TSX Composite Index, which includes over 200 of the largest publicly listed companies in Canada. This representative sample of firms provides an assessment of progress in corporate Canada along these important dimensions. We also provide evidence regarding the number of companies that should be considered in the development of a Canadian version of Climate Action 100+.

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### ***What is the state of GHG emissions reporting among companies included in the S&P/TSX Index?***

Roughly **two-thirds** (150 of 222) of TSX Index firms provide GHG emissions disclosures. This puts Canada ahead of Japan (46%), slightly above or equal with the U.S. (55% to 67%), and well below Europe (79%) and the UK (99%) in terms of the percentage of firms that report GHG emissions.

The emissions for the 150 TSX companies that do report them comprise approximately 72% of total Index firm emissions, according to our estimate of total Index emissions. Notably, the firms that do provide disclosures tend to be larger, comprising approximately 88% of the market cap of the Index. While only 65 (or 43%) of disclosing firms have their emissions estimates verified by a third-party provider, the total emissions from these firms accounts for close to 80% of all *reported* emissions.

These observations show that concerns around emissions data availability are real and can have an impact on the ability of financial institutions to assess the exposure to carbon emissions of many firms within the Index. For example, determining measures of portfolio carbon intensity will require a significant amount of estimation. This evidence confirms the need for enhanced disclosure requirements for companies.

### ***How many TSX Index firms have established emissions reductions targets, and what level of detail have they provided in support of achieving such targets?***

Our analysis reveals that **just 27%** (60) of TSX Index companies have stated emissions reduction targets. This percentage of firms with targets is well below the 2020 figure for S&P 500 Index companies of 53%, and is even further below the figure of 67% for FTSE 100 Index firms.

Among these 60 firms with targets, 15% (9) provide detailed plans for achieving their targets, 62% (37) provide some level of detail, while the remaining 23% (14) provide boilerplate comments or no details at all. So just over three quarters of the firms with targets provide some level of detail with regards to their plans to achieve their targets.

We also find that 25% (15) of the firms with stated targets tie executive compensation directly to reductions targets, with another 47% (28) having incentives loosely related to climate-related issues, while the remaining 28% (17) have no specified link to compensation.

Overall, this analysis suggests there is room for improvement in terms of the number of firms establishing targets for GHG emission reductions, in providing details of their plans for achieving such targets, and in tying the success of their plans to executive compensation.

### ***What would be the impact on the TSX Index aggregate GHG emissions if companies that have already committed to reduction targets successfully achieved them?***

Unfortunately, we are unable to answer this simple question without making some assumptions due to the lack of consistency and clarity regarding stated emissions targets. However, the good news is that even though only 60 Index firms have stated emissions reduction targets, their combined emissions is roughly half of the estimated emissions for all Index firms. Further, based on our estimates, a substantial proportion (17%) of the total emissions from TSX Index firms would be eliminated if these companies meet their targets, when expressed in terms of a 2030 target date.

We also show that the actions of the largest emitters with reduction targets are critical to achieving progress in terms of emissions reductions. In particular, if the 13 firms with stated targets among the Top 20 emitting firms that report emissions met them, the total reduction in emissions would equal 83% of the total reduction achieved if all 60 firms with targets achieved them. The Top 40 and Top 50 groups include 23 and 29 firms respectively with targets, and if these firms met their targets, it would result in total reductions equivalent to 94% or 97% of the estimated reduction across all 60 firms with targets. So clearly having the big emitting firms achieve their reduction targets is critical.

### ***How many firms would it make sense to include in the Canadian version of Climate Action 100+?***

The answer most likely lies somewhere between 20 and 50, with 40 representing a reasonable choice; although we note that there may be as many as 10 other firms that are top emitters that did not report 2019 GHG emissions. Specifically, our analysis suggests that the Top 20 reporting emitters account for **almost 80%** of total *reported* emissions and 57% of our estimate for total emissions for the TSX index. Moving to the Top 40 reporting firms, we find they account for 92.5% of reported emissions, and about two-thirds of total TSX Index emissions.

## The S&P/TSX Composite Index: Emissions, Disclosures and Targets

This report examines the firms included in the S&P/TSX Composite Index, which includes over 200 of the largest publicly listed companies in Canada. We do so to shed light on some issues that are front and centre in many discussions today.

These include:

1. A great deal of attention has been devoted to corporate data and disclosure issues over the past several months. A very basic and important component of any such disclosures is GHG emissions data for companies.

*What is the **state of GHG emissions reporting** among companies included in the S&P/TSX Composite Index?*

2. It is becoming increasingly important for companies to have a business strategy that includes plans for transitioning to a lower-carbon economy, part of which should include setting targets for GHG emissions reductions.

*How many TSX Index firms have established emissions reductions targets, and what **level of detail** have they provided in support of achieving such targets?*

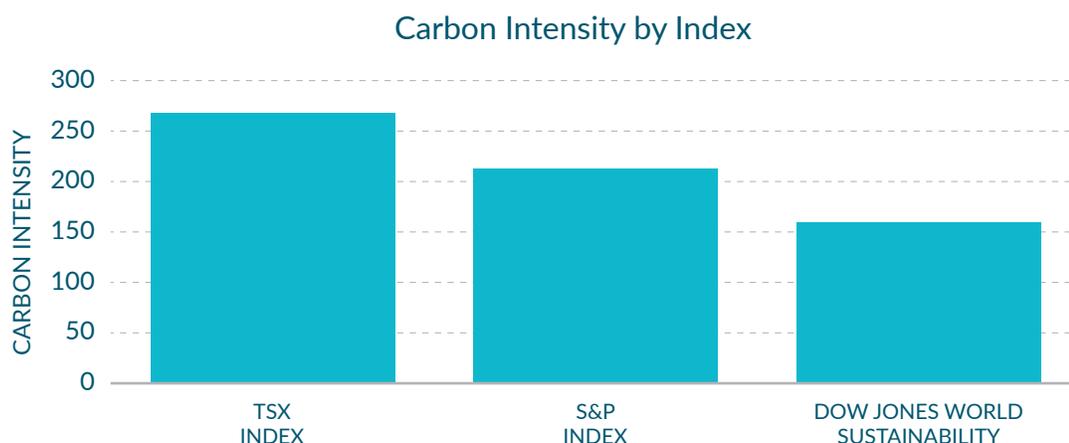
3. S&P provided a carbon intensity<sup>1</sup> measure for the S&P/TSX Index of 267.08 in the summer of 2020, above the S&P estimate for the S&P 500 Index of 213.27 at the same time, and substantially higher than the estimate of 158.9 for the Dow Jones World Sustainability Index (Global Equities).<sup>2</sup>

*What would be the **impact on the TSX Index aggregate GHG emissions** if companies that have already committed to reduction targets successfully achieved them?*

**FIGURE 1**

### Canada vs The World: Carbon Intensity

The carbon intensity of the TSX is higher than peer indices.



4. In addition, early work has begun with respect to establishing a Canadian analog<sup>3</sup> to the global initiative Climate Action 100+, which was launched in 2017 with the aim of ensuring the world's 100 largest corporate GHG emitters take necessary action on climate change.

*How many firms would it make sense to include in the Canadian version of Climate Action 100+?*

<sup>1</sup> Carbon intensity is most commonly defined as total GHG emissions (Scope 1 + Scope 2) divided by revenue, and expressed as tCO<sub>2</sub>e/\$M revenue.

<sup>2</sup> Source: S&P Dow Jones Indices – S&P 500 and Dow Jones Sustainability World Index Fact Sheets, July 2020.

<sup>3</sup> Source: <https://www.responsible-investor.com/articles/canada-to-launch-national-version-of-ca100-to-steward-country-s-big-emitters>, February 18, 2021.

## TSX Composite Index Emissions Disclosures

There has been much discussion recently about the **urgent need** for better data and disclosures through enhanced Environmental, Social and Governance (ESG) and climate-related disclosures from companies.

For example:

- During 2020 the UK and New Zealand established regulation to phase in mandatory disclosures consistent with Task Force for Climate-related Financial Disclosures (TCFD) recommendations.
- In November 2020, we saw Canada's eight largest pension plans issuing a joint statement advocating that companies provide both TCFD and Sustainability Accounting Standards Board (SASB) disclosures.<sup>4</sup>
- In January 2021, the Ontario Capital Markets Modernization Taskforce released a final report recommending a phased-in approach to adopting a significant portion of the TCFD recommendations.<sup>5</sup>

These observations are consistent with current information requirements of financial institutions. For example, many institutional investors<sup>6</sup> have been setting transition targets for their portfolios in response to client and other stakeholder demands, as well as in recognition of the long-term implications to their portfolio holdings of not preparing for the major economic transformation in progress. An important initial step in such a process is to obtain an accurate estimate of the current carbon intensity for its portfolio to establish a starting point against which the target(s) will be applied.

In addition, there is evidence that once firms start reporting GHG emissions, they take actions to reduce them. For example, studies by Downar et al. (2020) and Jouvenot and Krueger (2020), both document significant declines in GHG emissions by newly reporting companies in the 14-18% range, following the implementation of required GHG emissions disclosures by UK-listed companies in 2013.<sup>7</sup>

Based on a survey of over 5,000 publicly listed companies accounting for over 90% of the market value of world stock markets, *The Economist* recently noted that the number of companies making emissions disclosures has been "rising steadily."<sup>8</sup> Specifically, the report finds that by June 2020 the percentage of companies disclosing emissions had increased to 67% in the U.S., 79% on the Euro Stoxx 600 Index, and 46% on the Nikkei 225 Index. These figures were up from 53%, 40% and 13% respectively from five years prior. With respect to the U.S. numbers we also note another survey, in May of 2020 by the International Energy Agency (IEA), which found 56.2% of S&P 500 firms disclosed Scope 1 GHG emissions, while 55.4% disclosed Scope 2 emissions<sup>9</sup>. In the UK, a September 2020 report by Ecoact found that 99% of FTSE 100 firms reported such emissions.<sup>10</sup>

We provide Canadian evidence based on our examination of corporate sustainability reports, company websites, as well as reported CDP data for the 222 companies included in the S&P/TSX Composite Index.

We found that only **150 companies** (67.6% of the total number) provided GHG emissions disclosure information for 2019. This puts Canada ahead of Japan, slightly above or equal with the U.S., and well below Europe and the UK.

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4 Source: <https://www.thestar.com/business/2020/11/25/pension-fund-mangers-call-for-strengthened-esg-disclosure-by-companies.html>, November 25, 2020.

5 Source: <https://www.ontario.ca/page/consultation-modernizing-ontarios-capital-markets>, February 28, 2021.

6 For example, consider the recent announcement by Ontario Teachers' Pension Plan (OTPP): <https://www.otpp.com/news/article/a/ontario-teachers-pension-plan-commits-to-net-zero-emissions-by-2050>, January 21, 2021.

7 Sources: "The Impact of Carbon Disclosure Mandates on Emissions and Financial Operating Performance," Downar et al. 2020 (<https://www.accounting-for-transparency.de/publication/the-impact-of-carbon-disclosure-mandates-on-emissions-and-financial-operating-performance/>); and, "Mandatory Corporate Carbon Disclosure Evidence from a Natural Experiment," Jouvenot and Krueger, 2021 ([https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3434490](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3434490)).

8 Source: <https://www.economist.com/briefing/2020/06/20/how-much-can-financiers-do-about-climate-change>, June 20, 2020.

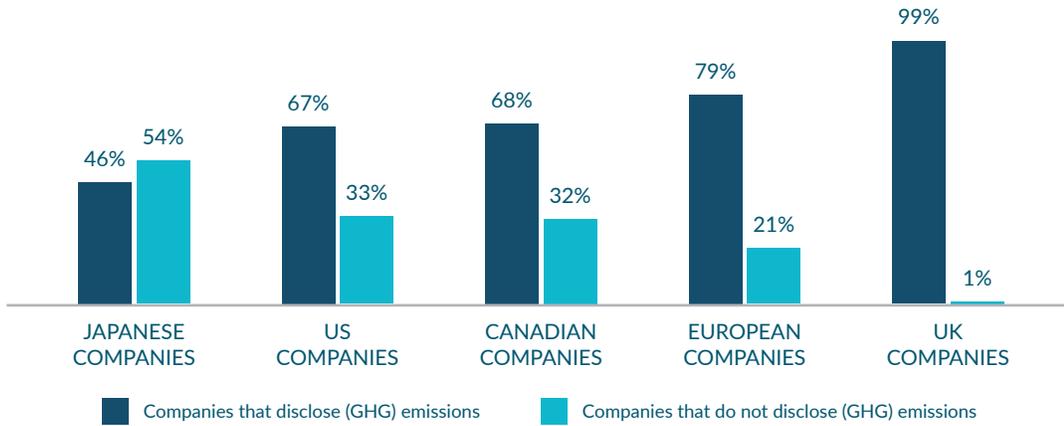
9 Source: <https://www.iea.org/data-and-statistics/charts/number-of-companies-in-the-s-and-p-500-reporting-energy-and-emissions-related-metrics>, May 26, 2020.

10 Source: <https://info.eco-act.com/en/sustainability-reporting-performance-ftse-100-2020>, September 2020.

**FIGURE 2**

## Canada vs The World: Disclosure

Canada's publicly traded firms rank far below European and UK peers in terms of climate disclosure.



We note that the companies that do disclose such information tend to be larger, representing 87.8% of the total market capitalization of the TSX Index. The total 2019 GHG (scope 1 + 2) emissions for these 150 firms was 301.3 million tCO<sub>2</sub>e. We estimate that this represents 71.6% of total TSX Index company emissions during 2019 of 420.3m tCO<sub>2</sub>e, a figure that we estimated using the carbon intensity measure for the entire index of 267.08 provided by S&P in the summer of 2020.

**FIGURE 3**

## TSX Market: Disclosure

Companies that disclose emissions make up 88% of the TSX market capitalization and contribute 72% of the total emissions to the TSX Index.



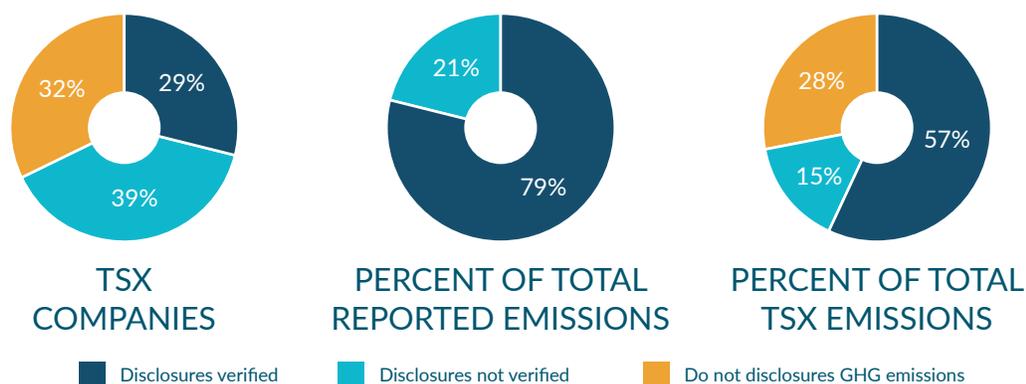
Among those providing emissions disclosures, **only 65** (43.3% of the 150) companies have their disclosures verified by an external party. Of note is that the total verified emission figure of 239.1m represents **79.4%** of all reported emissions, and 56.9% of the total estimated emissions figure for the TSX Index. Finally, less than half of the 150 reporting companies (71) separately report GHG emissions within Canada only.

While two-thirds may seem like a reasonably high percentage of reporting firms, it is important to recognize that the Index includes 222 of the largest and most actively traded companies in Canada. There is no doubt that the percentage of the remaining Canadian publicly listed firms providing such disclosures is extremely low, meaning that such information must be estimated for a large number of firms.<sup>11</sup> The fact that a much lower percentage of disclosing firms have such disclosures verified, demonstrates an additional challenge faced by financial institutions in trying to estimate the carbon intensity of companies of interest.

**FIGURE 4**

## TSX Disclosures: Verified vs Not Verified

Only 29% of TSX Companies that disclose emissions get a third-party to verify their disclosures. But those companies' emissions count for the vast majority of all those reported.



What does all of this mean for capital providers? The discussion above shows that establishing an accurate estimate of the current carbon intensity for its portfolio will almost certainly require numerous carbon emissions estimates, even for the Canadian public equity component of their portfolio. This means that portfolio carbon intensity or carbon footprint estimates could be too high or too low, depending on the accuracy of the estimates.

For example, it means that even reported measures of the carbon intensity of the S&P/TSX Composite Index itself involve some degree of estimation. And it certainly doesn't get any easier when asset owners and managers examine the other components of their portfolios including fixed income, private equity and debt, real estate, infrastructure, alternative investments, and so on. In short, data limitations contribute to concerns regarding the level of precision of portfolio carbon intensity estimates. Such an observation underpins at least one practical motivation for Canada's largest pension plans recent joint statement calling for improved disclosures, as well as the pressure being placed upon companies to improve their climate-related disclosures by large financial institutions.

<sup>11</sup> Data providers like MSCI, Sustainalytics, Refinitiv, Bloomberg, S&P, etc. provide carbon intensity estimates for portfolios that are based on estimation procedures to estimate the carbon intensity of firms that do not directly report emissions data. Typically sector considerations represent an important part of the estimation process.

## Emissions Targets by TSX Firms

In his 2021 letter to CEOs, BlackRock CEO Larry Fink noted that BlackRock will be asking companies to “disclose a plan for how their business model will be compatible with a net zero economy.”<sup>12</sup> Such a request is consistent with recent comments from Mark Carney, former head of both the Bank of Canada and the Bank of England, who stated:<sup>13</sup> “It would be a bit odd if you’re running a company and you haven’t thought of your strategy to move to net-zero — or for a net-zero world.”

The statements above highlight the potential costs to companies of not having a net zero 2050 plan, with large industry players demanding such information. It is also important to recognize that while many big investors (like BlackRock<sup>14</sup>) make headlines with their stated intentions to engage with companies, and others (like the Norway Sovereign Wealth Fund<sup>15</sup>) make headlines with their divestment decisions, there are many capital providers who quietly vote with their feet due to concerns regarding a company’s lack of a transition plan and being inadequately prepared for the transition to a net-zero 2050 world.

The decision to establish emissions reductions targets is one important step in a company’s transition planning. It represents an important commitment for companies, and one against which it will be held accountable by stakeholders. The fact that companies recognize this is obvious, as it seems like every week we are seeing one or more large companies making commitments to reduce its emissions, such as Air Canada’s net zero 2050 commitment on March 15, 2021.<sup>16</sup>

We examine the emission reduction targets of S&P/TSX Composite Index companies and find that **only 60** out of 222 (or **27%**) companies, comprising 44% of the Index market cap have targets beyond 2020.<sup>17</sup> This percentage of firms with targets is well below the 2020 figure for S&P 500 Index companies of 53%<sup>18</sup>, and is even further below the figure of 67%<sup>19</sup> for FTSE 100 Index firms.

**FIGURE 5**

### Canada vs The World: Targets

Canada’s publicly traded firms are far behind their peers on the S&P 500 and FTSE 100 indices when it comes to setting climate targets.



12 Source: <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>, January 25, 2021.  
 13 Source: <https://www.parliamentlive.tv/Event/Index/c552cf86-c5e7-40a3-aaa5-9aecca4ee84a>, July 12, 2020.  
 14 Source: <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/blackrock-unveils-climate-disclosure-expectations-engagement-plan-for-companies-62743855>, February 18, 2021.  
 15 Source: <https://financialpost.com/commodities/energy/worlds-largest-wealth-fund-blacklists-four-canadian-firms-for-emissions>, January 10, 2021.  
 16 Source: <https://www.newswire.ca/news-releases/air-canada-commits-to-ambitious-net-zero-emissions-goal-by-2050-853464854.html>, March 15, 2021.  
 17 We note that if we included firms that had targets for 2019 or 2020, but have not yet announced future reduction targets, the number of firms would have been 73, or 33% of TSX Index companies.  
 18 Source: <https://www.iea.org/data-and-statistics/charts/number-of-companies-in-the-s-and-p-500-reporting-energy-and-emissions-related-metrics>, May 26, 2020.  
 19 Source: <https://info.eco-act.com/en/sustainability-reporting-performance-ftse-100-2020>, September 2020.

**FIGURE 6**  
**TSX Market: Climate Targets**



Table 1 shows that of these 60 companies, 51 have absolute reductions targets that make reference to specific total emissions reductions. This group includes eight firms with net-zero emissions targets between 2030 and 2050, as well as 10 firms with carbon-neutral targets between 2021 and 2050.<sup>20</sup>

In 20 cases, company reduction targets are not expressed in terms of absolute total emissions reductions, but in terms of measures such as carbon intensity. Finally, 11 companies have two stated targets and hence fall into more than one grouping, leaving us with our total of 60.<sup>21</sup> In the bottom part of Table 1, we break down both absolute and intensity targets into three time periods: 2021-2025; 2026-2030; and, 2031-2050.

**TABLE 1**

**S&P/TSX Composite Index Firms with Emissions Reduction Targets**

**Emissions Reduction Target Characteristics**

<b>Absolute targets</b>	<b>51</b>
<b>Intensity targets</b>	<b>20</b>
<b>More than one target</b>	<b>(11)</b>
<b>TOTAL</b>	<b>60</b>
<b>Absolute Targets</b>	
2021-2025	21
2026-2030	15
2031-2050	13
Other	2
<b>Intensity Targets</b>	
2021-2025	11
2026-2030	9

<sup>20</sup> The Science Based Targets initiative (SBTi) has described net zero for a company as “achieving a state in which its value chain results in no net accumulation of carbon dioxide in the atmosphere and no net-impact from other GHG emissions.” (<https://sciencebasedtargets.org/resources/legacy/2020/09/foundations-for-net-zero-full-paper.pdf>). In contrast, carbon neutrality may be achieved through a combination of in-house efficiency measures, as well as through supporting external emission reduction projects such as offsets (<https://carbonneutral.com/how>).

<sup>21</sup> Six of these 11 firms have both an absolute target and an intensity target, three others have both 2025 and 2050 absolute targets, and two have both 2030 and 2050 absolute targets.

When discussing emission reduction targets, it is important to consider the plans that companies have to achieve their stated targets. To do so, we reviewed the individual companies' stated plans to achieve their targets and classified these plans into the following four categories:

1. Very detailed:
  - Detailed breakdowns of emissions by type (e.g., CO2, methane, etc.), and by source (e.g., business unit), as well as thorough historical emissions data, and targeted areas for reductions.
  - Detailed investment figures planned for emission reduction technologies and thorough company case study examples and impact metrics.
  - Provide a relatively clear picture as to how the company specific target may be achieved.
2. Some detail:
  - Fairly detailed emissions data, some details regarding targeted emission reduction investments, examples, and impact metrics.
3. Boilerplate:
  - Emissions data is reported.
  - Very little detail, brief, boilerplate language regarding how targets will be met.
4. No detail:
  - No information regarding how target will be met, emissions data very limited or non-existent.

Table 2 shows that we classify nine (15.0%) of the 60 stated company plans as very detailed, 37 (61.7%) as providing some level of detail, 12 (20.0%) as boilerplate discussions, and two (3.3%) that provided virtually no details. So about three quarters of the firms with targets provide some level of detail with regards to their plans to achieve their targets.

**TABLE 2**

### Reduction Plan Level of Details and Link to Executive Compensation

<b>Level of Detail</b>	
Very detailed	9
Some detail	37
Boilerplate	12
No detail	2
<b>Link to Executive Compensation</b>	
Exec. Comp. linked to climate targets	15
Some incentives linked to climate-related issues	28
No explicit incentives provided	17

Another way to assess companies' commitments to achieving stated targets is to determine if their executive compensation schemes are tied to achieving these targets. For this purpose, we refer to CDP data. In particular, CDP's Climate Change questionnaire includes information regarding "Incentives for Management of Climate-Related Issues." We have broken down the relevant firm responses into the following three categories:

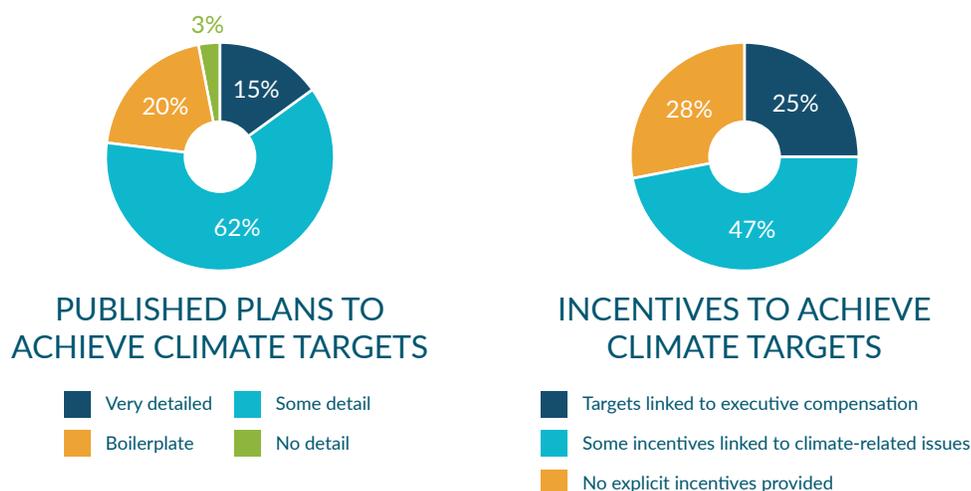
1. Executive compensation is linked to climate targets.
2. Incentives exist with respect to climate-related issues, but are not considered for executives (e.g., incentives are only applicable to the Sustainability Team), or the firm has indicated that there are incentives, but provide little or no detail.
3. No incentives for the management of climate-related issues exist.

Table 2 shows that 15 (25.0%) of the 60 firms with stated targets have compensation tied directly to reductions targets, 28 (46.7%) have compensation loosely related to climate-related issues, and 17 (28.3%) have no specified link to compensation.

**FIGURE 7**

## TSX Companies: Plans & Incentives to Achieve Targets

Only 15% of companies that state climate targets have published a detailed plan for achieving them, while only 25% link achieving those targets to executive compensation.



## The Potential Impact of Firms' Achieving their Emissions Reduction Targets

In September 2020, the Institute for Sustainable Finance (ISF) released a report estimating the required investment necessary for Canada to achieve its 2030 GHG emissions target of 30 percent below 2005 emissions.<sup>22</sup> That report highlighted the importance of private sector actions in achieving this target. In this section, we are going to examine the potential impact of private sector commitments to emissions reductions by 2030 if TSX Index companies with currently established emissions reductions targets achieve them.

We begin by noting that while the percentage of companies with explicit targets is low at 27%, the combined emissions from these 60 firms of 213.0m is **roughly half** (50.1%) of the estimated emissions for the Index, which can be seen in Table 3.<sup>23</sup> In other words, emissions targets have been established for companies representing almost half of the estimated emissions from TSX Index companies. This means that if this group of firms achieve their emission reduction targets, it could have a significant impact on the overall carbon intensity of the TSX Index, as well as for related TSX index products such as exchange traded funds (ETFs), index mutual funds, etc

<sup>22</sup> Source: <https://smith.queensu.ca/centres/isf/research/cmp.php>, February 28, 2021.

<sup>23</sup> This figure is 68.5% of the total reported emissions by the 150 reporting companies.

**TABLE 3**

## Summary Statistics – S&amp;P/TSX Composite Index Firms with Targets

<b>Number of Firms with Targets</b>	<b>Aggregate Market Cap (% of Index)</b>	<b>Total Emissions (tCO<sub>2</sub>e) millions (% TSX Index estimated emissions)</b>	<b>Total Reduction in Emissions to 2030 if all Targets Achieved (% of TSX Index 2019 estimated emissions)</b>
<b>60 in Total Index</b>	\$1,152.3b (44.0%)	213.0m (50.1%)	72.8m (17.3%)
<b>13 in Top 20</b>	\$385.3b (14.7%)	182.7m (43.5%)	60.6m (14.4%)
<b>19 in Top 30</b>	\$480.1b (18.3%)	199.2m (47.4%)	65.4m (15.6%)
<b>23 in Top 40</b>	\$523.6b (20.0%)	205.6m (48.9%)	68.1m (16.2%)
<b>29 in Top 50</b>	\$628.7b (24.0%)	209.9m (49.9%)	70.7m (16.8%)

We now turn our attention to estimating the actual amount of GHG emissions reduction that would be accomplished if companies successfully achieve their targets. We choose 2030 as our focal point, noting that most of the companies' absolute targets (36 of 51) and all 20 of the intensity targets listed in Table 1, have stated targets up to 2030, while only 13 reduction targets are provided for the 2031-2050 period. 2030 also coincides with the date for Canada's stated interim Paris Agreement target of reducing GHG emissions by 30% from 2005 levels. Given the lack of detail provided for several of the stated reduction plans, as well as the different end dates associated with the stated targets, some assumptions will be necessary. We provide the details of our process and assumptions in the Appendix.

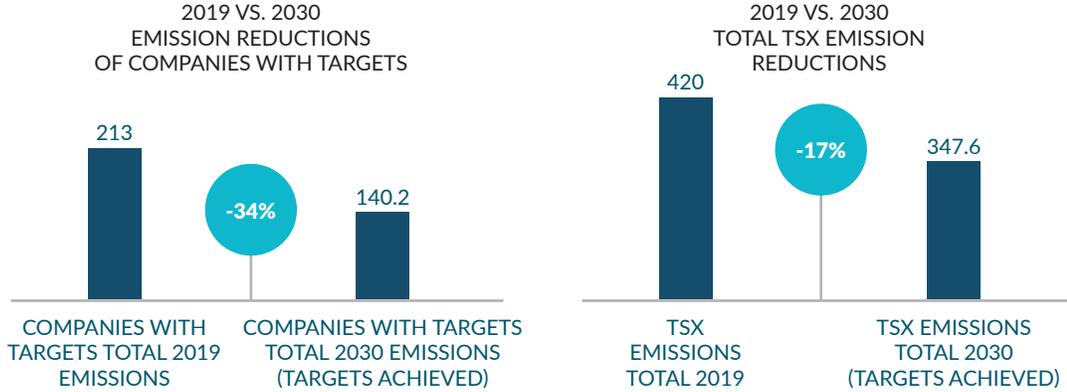
We begin by noting that we are providing *estimates*, based on a number of assumptions (discussed in the Appendix) that we were forced to make due to the lack of consistency and clarity regarding stated emissions reduction targets across the sample of firms. However, our purpose is not one of precision, but rather to provide a reasonable approximation of the potential emissions reductions that could be accomplished by 2030 if firms that already have targets are successful in achieving them.

Our analysis shows that, based on our estimates, a substantial proportion of the emissions associated with TSX Index firms would be eliminated if the companies with stated emissions reductions targets meet them. In particular, the second row in Table 3 shows that the 2030 estimate of emissions reductions for the 60 companies with targets would total 72.8m, representing a 34.2% reduction from the 2019 emissions total of 213.0m for these 60 firms. The estimated reduction further represents 17.3% of estimated TSX Index emissions for 2019 of 420.4m, and would reduce this total to 347.6m, all else being equal. If we assumed total revenue for the Index remained constant, this would result in the carbon intensity estimate declining from 267.1 to 220.9 tCO<sub>2</sub>e/\$M revenue.

**FIGURE 8**

## Potential Impact of TSX Companies Achieving Their Climate Targets

If all 60 TSX companies that have climate targets were on track to achieve them, they would collectively reduce their emissions by 34% and the overall emissions of the TSX by 17% by 2030.



We extend our analysis to examine the impact of companies achieving their reduction targets to the top emitting groups of firms that will be discussed in greater detail in the next section. In particular, we identify groups of the Top 20/30/40/50 firms that report emissions in terms of their total GHG emissions.

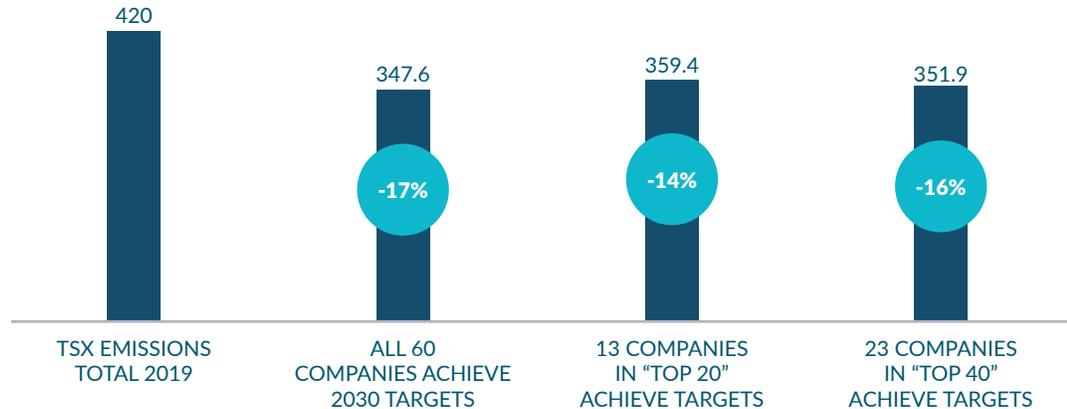
Among the Top 20 emitting firms that report emissions, a much higher percentage of firms have a stated reduction target (13 of 20, or 65%) than is the case across all Index firms. Table 3 shows that if these 13 firms met their targets it would result in an estimated total emissions reduction of 60.6m, which represents 14.4% of total estimated TSX Index emissions. Interestingly, this figure also represents 83.2% of the estimated total emissions reduction of 72.8m across all 60 firms with stated reductions targets. This reinforces the fact that the actions of the largest emitters are critical to achieving progress in terms of emissions reductions.

Moving to the other top emitting groups, we can see from Table 3 the Top 30 group includes 19 firms with a stated reduction target, and if these firms met their targets the aggregate reduction would be 65.4m, 15.6% of total estimated TSX Index emissions and 89.8% of the estimated total emissions reduction across all 60 firms with targets. The Top 40 (50) groups include 23 (29) firms with targets, which would result in a total reduction of 68.1m (70.7m), or 93.5% (97.1%) of the estimated reduction across all 60 firms with targets. In other words, if these 23-29 firms achieve their reduction targets, the aggregate result is roughly equivalent to having 100% success among all 60 firms that have stated targets.

**FIGURE 9**

## Potential Impact of TSX Companies Achieving Their Climate Targets

If the 23 companies that have targets in the "Top 40 emitters" category achieve those targets, the impact would be almost the same as all 60 companies achieving their targets.



## The S&P/TSX Composite Index Top GHG Emitters

By December 2020, there were 545 signatory investors with \$52 trillion in assets supporting the global Climate Action 100+ initiative, and by February 2021 engagement was proceeding with 167 companies accounting for approximately 80 percent of annual global industrial emissions.<sup>24</sup> An obvious question that arises with respect to this initiative is how many companies should be included among the target firms?

We address this question by ranking the firms listed in the S&P/TSX Composite Index in terms of total GHG emissions. The summary statistics of this analysis are provided in Table 4 below.

We begin by noting that we cannot be sure that this list includes all of the top emitters, since there may be several companies among the top 20-50 that do not report their emissions.<sup>25</sup>

**TABLE 4**

### Summary Statistics – S&P/TSX Index Top Reporting Emitters<sup>26</sup>

Group	Total Emissions (tCO <sub>2</sub> e) millions	Percentage of Total Emissions of 150 that Disclose Emissions of 301.3m	Percentage of S&P/TSX Index Total Emissions Estimate of 420.4m	Total Market Cap (\$b) (% Index Market Cap)	Average (Median) Market Cap (\$b)
Top 20	239.3	79.4%	56.9%	532.4 (20.3%)	26.6 (13.3)
Top 30	265.2	88.0%	63.1%	681.4 (26.0%)	22.7 (12.3)
Top 40	278.9	92.5%	66.3%	764.5 (29.2%)	19.1 (8.2)
Top 50	287.7	95.5%	68.4%	890.5 (34.0%)	17.8 (7.9)
<b>S&amp;P/TSX Index</b>	420.4 (est.)	100%	100%	2,618.74	11.8 (3.9)

Table 4 shows that the top 20 reporting emitters account for 239.3m, or **79.4%** of the total emissions of the 150 firms that reported emissions (301.3m). This figure represents 56.9% of the estimate of total TSX index firm emissions (420.4m). It is also approximately one-third of total 2019 Canadian emissions of 720m (33.23%);<sup>27</sup> although it is important to recognize that the two figures are not directly comparable since the 720m figure for Canada includes only Canadian emissions, while the corporate emissions figures include emissions both within and outside Canada.

As large emitters, it is no surprise that such firms **tend to be bigger** than the average company in the Index. In particular, while 20 represents less than 10% of the actual number of companies in the Index, the total market capitalization for these firms is \$532.4b, or 20.3% of the total Index market cap of \$2,618.7b. The average (median) market cap of the Top 20 firms is \$26.6b (\$13.3b) versus \$11.8b (\$3.9b) for the Index.

<sup>24</sup> Source: <https://www.climateaction100.org/>, February 28, 2021.

<sup>25</sup> A review of all of the companies in the Index suggests that there could be as many as 10 other firms that do not report emissions that might be included among the top 50, based upon sector and size considerations.

<sup>26</sup> GHG Emissions data is collected from the CDP 2010-2020 Climate Change Questionnaire Data, and from corporate sustainability and ESG reports. Market capitalization data is obtained from TMX Money (<https://money.tmx.com/en/>) as of February 13, 2021.

<sup>27</sup> Canadian 2019 estimate can be found at: <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/projections/2019.html>, March 1, 2021.

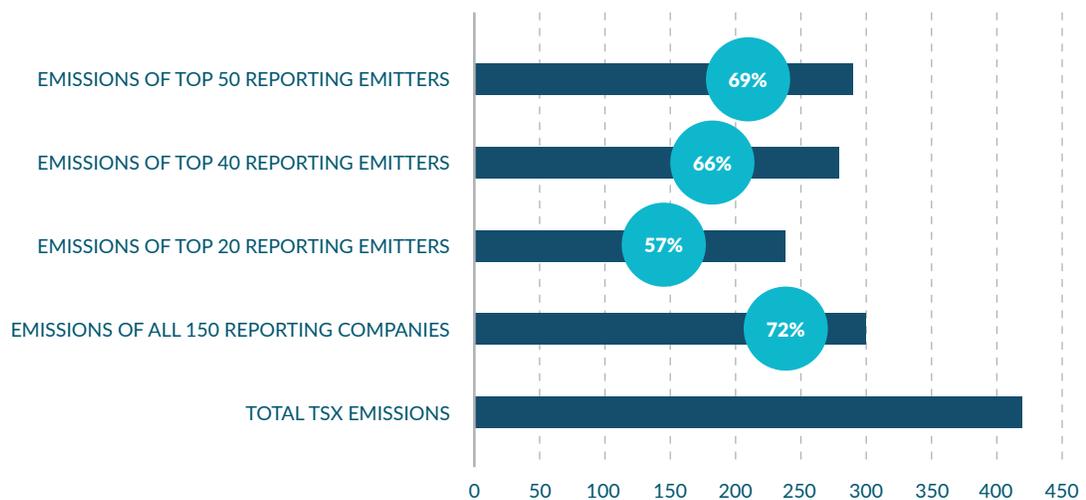
The additional rows in Table 4 provide the same summary statistics for the Top 30, 40 and 50 emitters in the Index. We can see that the Top 30 generated combined emissions of 265.2m in 2019 – 88% of the total by reporting firms and 63% of the Index's estimated emissions. The marginal contributions of adding 10 more firms decline significantly as we move to the Top 40 and then the Top 50 firms, which account for 66.3% and 68.4% respectively of the Index total estimate of emissions.

The statistics provided in Table 4 show that the Top 20 reporting emitters account for well over half (57%) of total Index emissions, and that these firms are much larger than average. The Top 40 firms account for approximately two-thirds of total Index emissions (29% of TSX market cap), while widening the net to include the Top 50 firms leads to a marginal increase in the percentage of Index emissions represented (at 68.4% of TSX emissions and 34% of TSX market cap).

**FIGURE 10**

## Emission contributions of top emitting companies

The GHG contribution of the top 40 reporting emitters accounts for the vast majority of all reported emissions.



## APPENDIX

### PROCESS FOR ESTIMATING 2030 EMISSIONS REDUCTIONS IF TARGETS ARE ACHIEVED

For the purposes of determining an expected absolute annual emissions reduction figure by 2030 if all company targets are achieved, we incorporated all firm level targets set between 2021 and 2030. In calculating reductions by 2030 where firms had only one target occurring before 2030, we assumed the renewal of these short-term commitments. We did so by assuming identical target reductions over identical periods, calibrated to end by 2030. For example, if a firm with 10m tCO<sub>2</sub>e of emissions committed to a 20% reduction in emissions by 2025, this would be equivalent to a reduction of 2m tCO<sub>2</sub>e. In this case we would assume that they would again commit to further reduce emissions by another 2m tCO<sub>2</sub>e over the 2025-2030 period. In a few cases, assuming renewed short-term commitments would have led to negative emissions in the year 2030. In these cases, net-zero emissions by 2030 was assumed.

In cases where the firm had multiple targets, with one set prior to 2030 (e.g., 2027) and also had a target beyond 2030 (e.g., 2040), the additional abatement from the point of the interim target to the second target was assumed to occur proportionately year over year. Finally, if a firm had only one target that fell beyond 2030, the same linear abatement assumption was applied. For example, if a firm had a 2040 target of 2m, we assumed half of that target (1m) was achieved by 2030.

With respect to carbon intensity targets, the denominator, whether based on revenues or per unit of output (e.g., barrel of oil equivalent), was assumed to remain flat over the time period. In addition, carbon neutral targets and net-zero targets were treated as absolute reductions of emissions.