

An Update on Canadian Corporate Performance on GHG Emissions Disclosures and Target Setting

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EXECUTIVE SUMMARY

The demand continues to heat up for better climate-related disclosures from companies. Much of impetus has come from investors and other financial institutions, who need information that is reliable, consistent and comparable in order to properly assess investment and lending opportunities and risks.

In recent months, regulators such as the Canadian Securities Administrators (CSA) and the Securities and Exchange Commission (SEC) in the United States have proposed new rules to improve climate-related disclosures. And many institutional investors 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. There is evidence that once firms start reporting greenhouse gas emissions (GHG), they take actions to reduce them.

This report provides an important update on the progress of Canadian firms on climate commitments since ISF's 2021 study, "Assessing Current Canadian Corporate Performance on GHG Emissions, Disclosures and Target Setting". Researchers at the Institute for Sustainable Finance (ISF) have once again examined the firms in the S&P/TSX Composite Index, which includes more than 200 of the largest publicly listed companies in Canada. This study focuses on performance during the calendar year 2020, which we compare to the performance during 2019, analyzed in our 2021 report.

Overall, the results show that while there has been a significant improvement in the number of Index companies that have stated emissions reductions targets, and some improvement in announcing emissions reductions plans, there have only been slight improvements in GHG disclosures over the previous year and Canada still lags Europe and the UK on that measure. We would also note that as more firms adopt GHG emissions reductions targets, a much smaller percentage are taking the step of tying executive compensation to reaching climate targets. This is not a positive signal, since tying compensation to achieving climate goals is necessary to properly incentivize action.

Key findings:

- **Only 163 companies** (70.6% of the total number) provided GHG emissions disclosure information for 2020, which represents **only a slight improvement** from the results of our 2021 study that examined 2019 reported disclosures (150 companies or 67.6%). This puts Canada ahead of Japan (46%), slightly above or equal with the U.S. (55% to 67%), but well below Europe (79% to 89%) and the UK (99%) in terms of the percentage of firms during 2020 that report GHG emissions.
- **120** out of 231 TSX Index companies (or **52%**) have stated emissions reduction targets, which is exactly **twice the number** of companies that had targets during 2019 (i.e., 60). So, this represents an area of **significant improvement**. Unfortunately, Canadian firms still don't appear to be keeping pace internationally. The percentage of firms with targets is still slightly 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 and 77% for Dow Jones Index companies.
- It is notable that the larger, more emissions heavy firms tend to have targets and so, emissions targets have been established for companies representing two-thirds of the estimated emissions from TSX Index companies. Based on the estimates in the study, a substantial proportion of the emissions associated with TSX Index firms would be eliminated if the companies with stated emissions reductions targets meet them. The 2030 estimate of emissions reductions for the 120 companies with targets would total 121.4m (million tonnes of CO₂), representing a 45.4% reduction from the 2020 emissions total of 267.3m for these 120 firms. The estimated reduction further represents 30% of estimated TSX Index emissions for 2020 of 405m, and would reduce this total to 283.6m, all else being equal.

- Among the 120 firms with targets, we classify 29 (24%) of the 120 stated company plans as very detailed, versus nine (15%) of 60 last year. So, this represents a **marked improvement**. We further classify 67 (56%) as providing some level of detail, versus 37 (62%) last year. So overall, we observe 96 firms (80%) as providing very detailed or some level of detail for their plans versus 46 (77%) last year – a similar total percentage, but a much higher percentage of firms with very detailed plans.
- Our results show that only 17 companies (14%) with stated targets have compensation tied directly to GHG reduction targets versus 15 (25%) last year, only a slight rise in the absolute figure and a notable decline in the percentage of firms. We also find that only 35 (29%) have compensation that is loosely related to climate-related issues, a significant decline in percentage versus 47% last year. Finally, we observe a significant increase in both the number and percentage of companies that have no specified link to compensation to 68 (57%) versus 17 (28%). This is **not a positive signal**, since tying compensation to achieving climate goals is necessary to properly incentivize action.

The largest Canadian firms are responding to signals from investors and regulators that GHG emissions targets and reduction plans are a necessity. But Corporate Canada still needs to up its game. As a whole, Canadian companies will need to increase GHG disclosures, establish more meaningful reduction targets, and increasingly tie compensation to reduction targets in order to keep pace with investor expectations and with global best practices.

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. Importantly, this study focuses on performance during the calendar year 2020, which we compare to the performance during 2019, which we analyzed in our 2021 report. This provides an important assessment of the **progress** being made with respect to the issues discussed below. The main issues examined can be summarized in a series of **key questions** which 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.

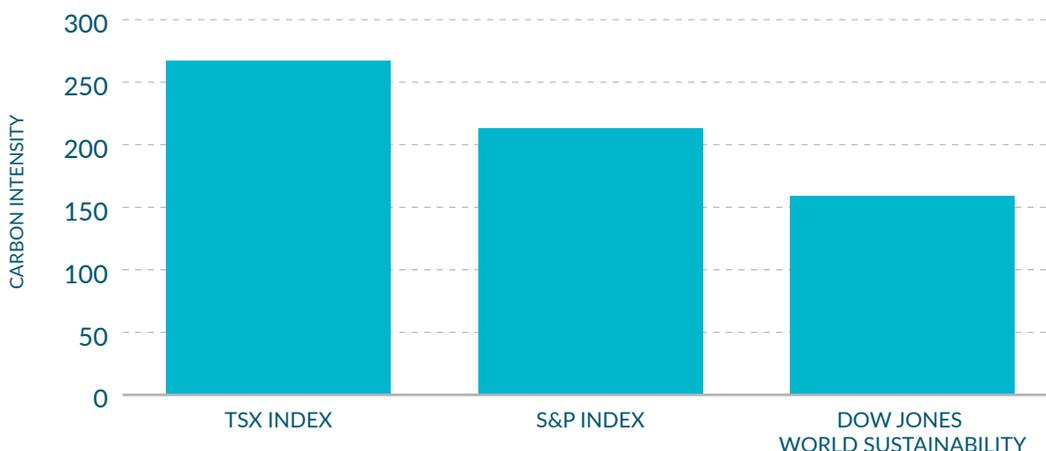
How many TSX Index firms have established emissions reductions targets, and what level of detail have they provided in support of achieving such targets?

3. S&P provided a carbon intensity¹ measure for the S&P/TSX Index of 276.08 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).²

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 by Index



4. In addition, since early 2021 there have been discussions with respect to establishing a Canadian analog³ 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+?

1. TSX COMPOSITE INDEX EMISSIONS DISCLOSURES

The demand continues to heat up for better Environmental, Social and Governance (ESG) and climate-related disclosures from companies. Much of impetus has come from investors and other financial institutions, who need information that is reliable, consistent and comparable in order to properly assess investment and lending opportunities and risks.

For example:

- In November 2020, Canada's eight largest pension plans issued a rare joint statement advocating that companies provide both the Taskforce on Climate-related Financial Disclosures (TCFD) and Sustainability Accounting Standards Board (SASB) disclosures. In June 2021, the 10 largest Canadian pensions made a similar statement in response to a request for input by the US SEC.
- 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.⁴ In March 2022 the ISSB announced that the required climate-related disclosures would include the recommendations of the TCFD,⁵ and would build upon SASB's industry-based Standards, which would serve as a starting point for global sustainability disclosures.⁶
- In October of 2021, the CSA issued a consultation paper requesting feedback on recommendations that included a phased in approach to adopting a significant portion of the TCFD recommendations.⁷
- The SEC recently proposed new rules to improve climate-related disclosures. The SEC Fact Sheet "Enhancement and Standardization of Climate-Related Disclosures" 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."⁸

These observations are consistent with current information requirements of financial institutions. For example, Millani's "Semi-Annual Study of Canadian Institutional Investors," which was released February 14, 2022, noted that "71% of investors interviewed noted they are trying to calculate the carbon footprint of their portfolios."⁹ Indeed many institutional investors 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.¹⁰ An important initial step in such a process is to obtain an accurate estimate of the current carbon intensity for the 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 Jouvenor 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 U.K.-listed companies in 2013.¹¹

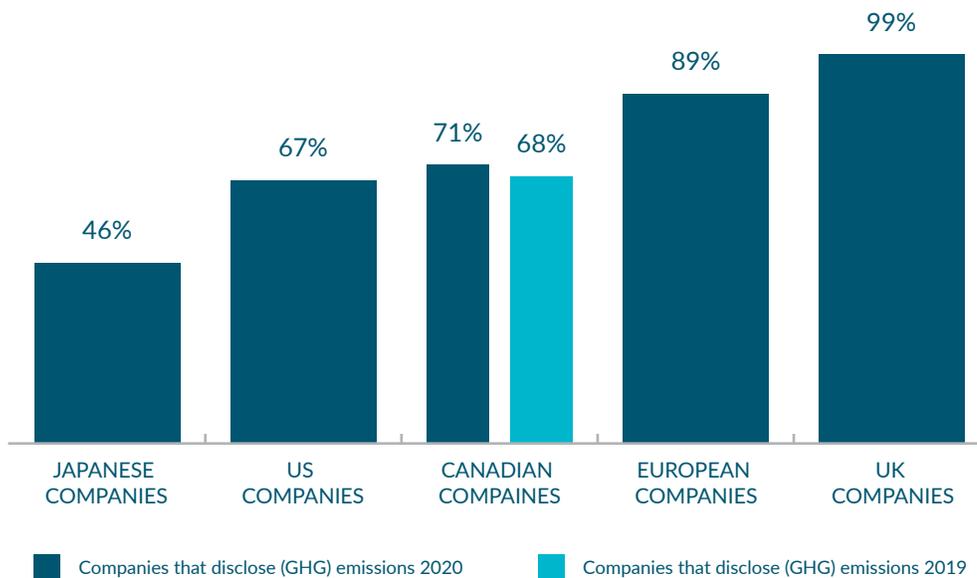
Based on a survey of over 5,000 publicly listed companies accounting for over 90% of the market value of world stock markets, *The Economist* recently noted that the number of companies making emissions disclosures has been "rising steadily."¹² Specifically, the report finds that by June 2020 the percentage 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.¹³ In the U.K., a September 2020 report by Ecoact found that 99% of FTSE 100 firms reported such emissions.¹⁴ A December 2021 report indicated that 89% of the European STOXX 600 disclosed emissions.¹⁵

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

We provide Canadian evidence based on our examination of 2020 corporate sustainability reports, company websites, as well as reported CDP data for that calendar year for the 231 companies included in the S&P/TSX Composite Index. We found that **only 163 companies** (70.6% of the total number) provided GHG (scope 1 + 2) emissions disclosure information for 2020, which represents only a slight improvement from the results of our 2021 study that examined 2019 reported disclosures (150 companies and 67.6%). This puts Canada ahead of Japan, slightly above or equal with the U.S., and well below Europe and the U.K.

FIGURE 2

Canada vs. The World: Disclosure Rates on Top Global Indices



We note that the companies that do disclose such information tend to be larger, representing 91.3% of the total market capitalization of the TSX Index. The total 2020 GHG (scope 1 + 2) emissions for these 163 firms were 293.2 million tCO₂e. We estimate that this represents 72.4% of total TSX Index company emissions during 2020 of 405.0m tCO₂e, a figure that we estimated using the carbon intensity measure for the entire index of 276.08 provided by S&P in the summer of 2020. It is interesting to note that this estimate represents a decline of 3.6% from the estimate of 420.3m used in last year's report. This decline is consistent with recent estimates that GHG emissions declined 9% for Canada during 2020.¹⁶

FIGURE 3

TSX Market: Disclosure

In 2020, companies that disclose emissions make up 71% of TSX listed companies, with 91% of the index market capitalization, and contribute 72% of the total emissions of TSX companies.

2020



2019



■ Companies that disclose (GHG) emissions ■ Companies that do not disclose (GHG) emissions

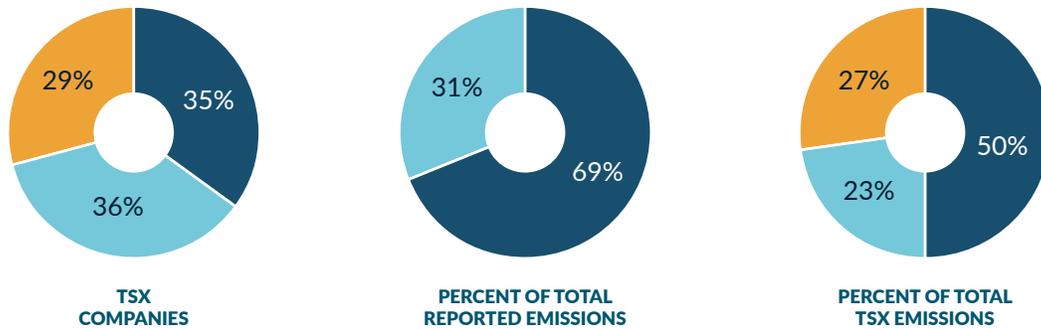
Among those providing emissions disclosures, **only 80 (49.1%** of the 163 companies) have their disclosures verified by an external party, which has increased slightly from the results in our study last year (i.e., **65 firms** or 43.3% of 150). Of note is that the total verified emission figure of 202.3m represents **69.0%** of all reported emissions, and 50.0% of the total estimated emissions figure for the TSX Index.

While 71% may seem like a reasonably high percentage of reporting firms, it is important to recognize that the Index includes 231 of the largest and most actively traded companies in Canada. There is no doubt that the percentage of the remaining Canadian publicly listed firms¹⁷ providing such disclosures is extremely low, meaning that such information must be estimated for a large number of firms.¹⁸ 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.

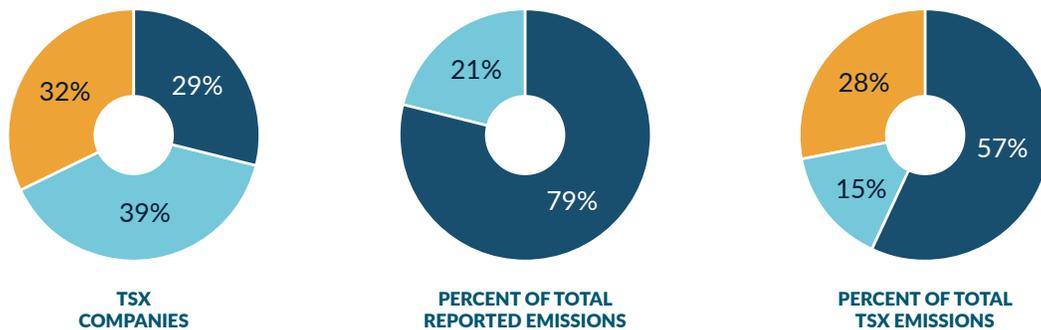
FIGURE 4

TSX Disclosures: Verified vs Not Verified

2020



2019



■ Disclosures verified ■ Disclosures not verified ■ Do not disclose

New to this year's report, we also examined scope 3 disclosures by the Index companies — or any emissions beyond scope 1 and scope 2 that occur in a company's value chain. We found that 96 (41.6% of Index companies) provide partial scope 3 disclosures. This includes 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.

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 all the recent attention being devoted to improving climate-related disclosures.

2. EMISSIONS TARGETS BY TSX FIRMS

The decision to establish emissions reductions targets represents an important commitment for companies, and one against which they will be held accountable by stakeholders. The critical importance of such commitments is illustrated by the support the for the Glasgow Financial Alliance for Net Zero (GFANZ), which was established in April 2021, and whose members include over 450 financial firms across 45 countries responsible for assets of over \$130-trillion US.¹² GFANZ is focused on broadening, deepening and raising net-zero ambitions across the financial system, including collaboration on steps firms need to take to align with a net-zero future.

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

We examine the emission reduction targets of S&P/TSX Composite Index companies and find that **120** out of 231 (or **51.9%**) companies (comprising 77.3% of the Index market cap and 66% of total Index emissions) have targets beyond 2020. Given the increasing amount of attention that has been devoted to having companies establish targets for emissions reductions, we expected to see a significant increase in the number of firms doing so, relative to the results reported in our 2021 report — and we do. The number of firms with targets is exactly **twice the number** of companies that had targets during 2019 (i.e., 60), and is close to double the percentage of Index companies with targets (i.e., 27% of 222), as reported in our 2021 report (which comprised 44% of the Index market cap and 50% of total Index emissions).

FIGURE 5

TSX Market: Climate Targets

The percentage of TSX Index firms with climate targets was 52% in 2020, substantially higher than 2019.

2020



2019

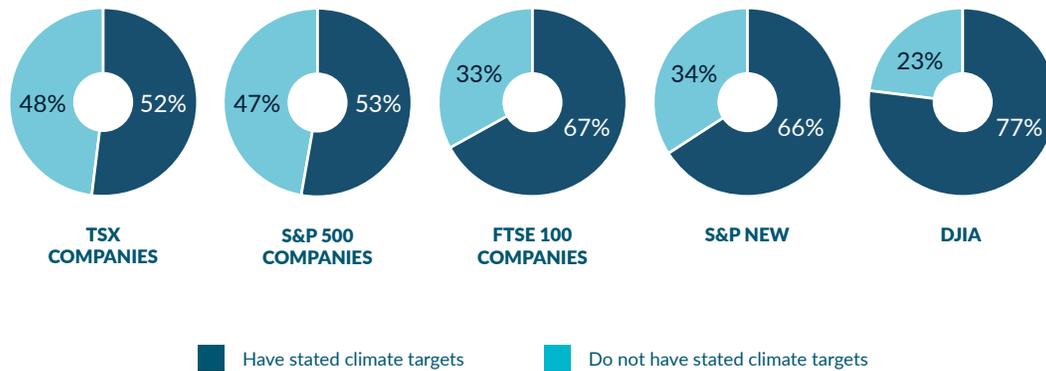


Have post-2020 climate targets
 Do not have post-2020 climate targets

FIGURE 6

Canada vs The World: Percentage of listed firms with emissions reduction targets

2020



Comparing the performance of the TSX Index to other major indices, Figure 6 shows that the 51.9% figure is close to the 2020 value for S&P 500 Index companies of 53%,²⁰ but is well below the 2020 figure of 67%²¹ for FTSE 100 Index firms, and 77% for Dow Jones Index companies.²² An October 2021 report indicates that the percentage of S&P 500 firms with emissions targets had increased to 66%.²³ Finally, Ecoact's 11th Annual Research Report also published in October 2021 indicates that 63% of Dow Jones Index companies had "net zero" emissions targets, versus 64% of companies included in the European STOXX 50 Index, and 66% included in the FTSE Index, so the percentage of firms in these indices with any type of target would likely be well above these figures.

Table 1 reports the results from our 2021 report and the current one, which demonstrates several important results:

1. The number of firms with targets has doubled, and the percentage of firms has almost doubled.
2. The number of firms with net-zero or carbon neutral targets more than tripled to 60 from 18, and the percentage increased from 30% of firms with targets to 50% of firms with targets.
3. The percentage of firms with more than one target increased from 18.3% of firms with targets to 49.2% of firms with targets. This indicates that the number of firms with "interim targets" has increased.

TABLE 1

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

Emissions Reduction Target Characteristics

	2020 (% of 120 firms)	2019 (% of 60 firms)	Change (Increase in Percentage of Firms)
Absolute targets²⁴	135 (112.5%)	51 (85.0%)	84 (+27.5%)
Intensity targets	44 (36.7%)	20 (33.3%)	24 (+3.4%)
More than one target	59 (49.2%)	11 (18.3%)	48 (+29.9%)
Net-zero/carbon-neutral	60 (50.0%)	18 (30.0%)	42 (+20.0%)
Somewhat Aligned Science-Based Targets²⁵	21(17.5%)	10 (16.7%)	11(+0.8%)
TOTAL	120 out of 231 (51.9%)	60 out of 222 (27.0%)	60 (+24.9%)

Climate Action 100+ recently released the results of their second benchmark assessment of the 166 high emitting global companies that they engage with to try and reduce emissions.²⁶ Reflecting the recent attention devoted to net-zero ambitions, the 2022 assessment indicates that 69% of the companies have net-zero targets, versus the 52% they found in their 2021 assessment. We find a similar dramatic increase in the number of firms with net-zero or carbon-neutral targets in our study, which more than tripled to 60 (26.0% of Index) firms during 2020, up significantly from 18 (8.1%) during 2019.²⁷ However, this figure is less than half the percentage of companies with net-zero targets in the Dow Jones Index (63%), the STOXX 50 Index (64%), and the FTSE Index (66%) as of October 2021 according to Ecoact's [11th Annual Research Report](#).

Table 1 also shows the number of TSX Index companies with Somewhat Aligned SBTs (Science Based Targets) during 2020 was 21 (9.1%). This is well below the 29% total for S&P 500 Index firms estimated to have SBTs in October 2021²⁸ and the 24% estimate according to a June 2021 SBTi report.²⁹ The June 2021 SBTi report further indicates that the Canadian percentage is even further below those for several other major indices: Nikkei 225 (Japan) – 28%; FTSE 100 (UK) – 48%; DAX 30 (Germany) – 50%; and, CAC 40 (France) – 78%. It is also a fraction of the percentage of companies with SBTs (65%) across all firms included in the Dow Jones Index, the STOXX 60 Index, and the FTSE Index as of October 2021 according to Ecoact's [11th Annual Research Report](#).

Table 1 shows that for the 120 companies with targets during 2020, they make reference to 135 absolute targets for emissions reductions. This number exceeds 120 since several firms have more than one absolute target (i.e., short-term, medium-term and/or long-term targets). This group includes 60 firms with net-zero emissions targets or carbon-neutral targets. In 44 cases, company reduction targets are not expressed in terms of absolute total emissions reductions, but in terms of measures such as carbon intensity. Finally, 59 companies have more than one stated target and hence fall into more than one grouping, leaving us with our total of 120.

Table 2 provides the breakdown of both absolute and intensity targets into three time periods: 2021-2025; 2026-2030; and, 2031-2050. It demonstrates an increase in targets in all categories relative to our 2021 study, and that several firms have multiple targets (i.e., absolute, intensity, long-term, mid-term and short-term).

TABLE 2

Emissions Reduction Targets Characteristics

	2020	2019
Absolute targets	135	51
2021-25	35	21
2026-30	47	15
2031-50	51	13
Other	2	2
Intensity targets	44	20
2021-25	18	11
2026-30	23	9
2031-50	3	-

When discussing emission reduction targets, it is important to consider the plans that companies have to achieve their stated targets. In fact, many companies (and jurisdictions) that have made recent headline announcements regarding their reduction targets have been called to task if they provide no supporting “plans” for achieving them. Consider for example, some highlights of the recent Climate Action 100+ benchmark assessment of 166 companies:²⁰

- 90% have Board level oversight of climate change
- Only 7% have stated short-term targets and only 17% have stated mid-term targets
- Only 5% of capital expenditures are well-aligned with targets
- Only 17% have robust “Strategies” aligned with targets

In order to assess the viability of the individual companies’ stated plans to achieve their targets, we 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 3 shows that this year we classify 29 (24.2%) of the 120 stated company plans as very detailed, versus nine (15.0%) of 60 last year. So this represents a marked improvement. We further classify 67 (55.8%) as providing some level of detail, versus 37 (61.7%) last year. So overall, we observe 96 firms (80.0%) as providing very detailed or some level of detail for their plans versus 46 (76.7%) last year – a similar total percentage, but a much higher percentage of firms with very detailed plans. This year we classified 7 (5.8%) of the plans as boilerplate discussions down from 12 (20.0%) last year; however, we observed a significant increase in the number of companies that provided virtually no details at 17 (14.2%), versus two (3.3%) last year. So overall, we can say that 4/5 of the firms with targets provide some level of detail with regards to their plans to achieve their targets, but a significant portion provide little or no details.

TABLE 3

Reduction Plan Level of Details and Link to Executive Compensation

Level of Detail	2020	2019	Change
Very detailed	29(24.2%)	9(15.0%)	20(9.2%)
Some detail	67(55.8%)	37(61.7%)	30(-5.9%)
Boilerplate	7(5.8%)	12(20.0%)	-5(-14.2%)
No detail	17(14.2%)	2(3.3%)	15(10.9%)
Link to Executive Compensation			
Executive Compensation linked to climate targets	17(14.2%)	15(25.0%)	2(-10.8%)
Some incentives linked to climate-related issues	35(29.2%)	28(46.7%)	7(-17.5%)
No explicit incentives provided	68(56.7%)	17(28.3%)	51(28.4%)

Another important component of a companies' commitment 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.

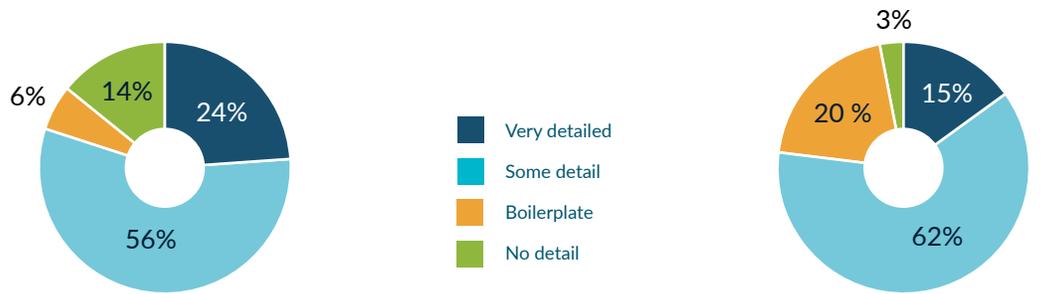
Table 3 shows that only 17 companies (14.2%) with stated targets have compensation tied directly to reductions targets versus 15 (25%) last year, a notable decline in the percentage of firms. We can also see that only 35 (29.2%) have compensation that is loosely related to climate-related issues, a significant decline in percentage versus 46.7% last year. Finally, we observe a significant increase in both the number and percentage of companies that have no specified link to compensation to 68 (56.7%) versus 17 (28.3%). **This is not a positive signal**, since tying compensation to achieving climate goals is necessary to properly incentivize action.

FIGURE 7

TSX Companies: Plans & Incentives to Achieve Targets

2020

2019



PUBLISHED PLANS TO ACHIEVE CLIMATE TARGETS

2020

2019



INCENTIVES TO ACHIEVE CLIMATE TARGETS

3. THE POTENTIAL IMPACT OF FIRMS ACHIEVING THEIR EMISSIONS REDUCTION TARGETS

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 52%, the combined emissions from these 120 firms of 267.3m is **roughly two thirds (66%)** of the estimated emissions for the Index, which can be seen in Table 4.³¹ In other words, emissions targets have been established for companies representing two-thirds 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.

TABLE 4

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

Number of Firms with Targets	Aggregate Market Cap (% of Index)	Total Emissions (tCO₂e) millions (% TSX Index estimated emissions)	Total Reduction in Emissions to 2030 if all Targets Achieved (% of TSX Index 2020 estimated emissions)
120 in Total Index	\$2406.1b (77.3%)	267.3m (66.0%)	121.4m (30.0%)
18 in Top 20	\$583.6b (18.7%)	216.9m (53.6%)	106.5m (26.3%)
25 in Top 30	\$701.4b (22.5%)	233.0m (57.5%)	116.2m (28.7%)
32 in Top 40	\$772.1b (24.8%)	242.8m (60.0%)	121.5m (30.0%)
40 in Top 50	\$923.8b (29.7%)	248.1m (61.3%)	123.6m (30.5%)

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

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 (82 of 135) and 41 of 44 of the intensity targets listed in Table 1, have stated targets up to 2030. The year 2030 also coincides with the date for Canada's stated interim Paris Agreement target of reducing GHG emissions by 40-45% 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.

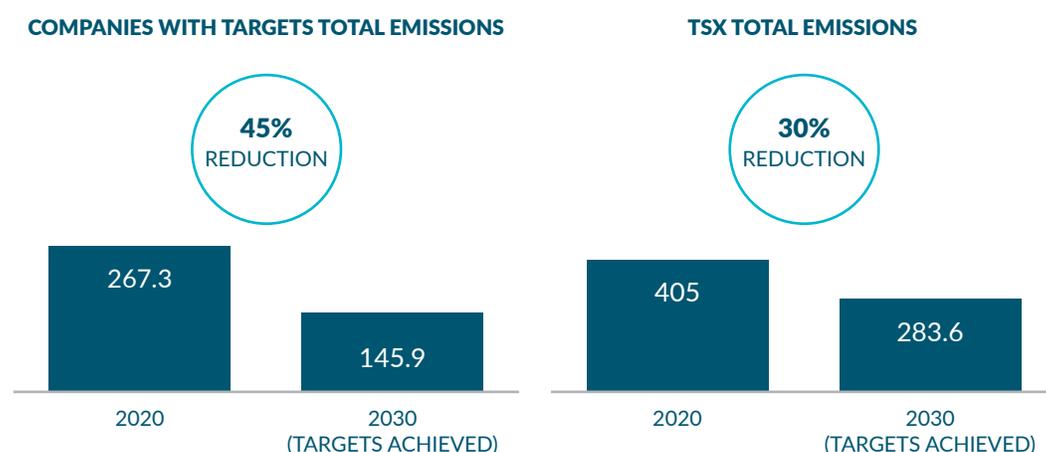
We begin by noting that we are providing *estimates*, based on a number of assumptions (discussed in the Appendix) that we were forced to make due to the lack of consistency and clarity regarding stated emissions reduction targets across the sample of firms. However, our purpose is not one of precision, 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 4 shows that the 2030 estimate of emissions reductions for the 120 companies with targets would total 121.4m, representing a 45.4% reduction from the 2020 emissions total of 267.3m for these 120 firms. The estimated reduction further represents 30.0% of estimated TSX Index emissions for 2020 of 405.0m, and would reduce this total to 283.6m, all else being equal. If we assumed total revenue for the Index remained constant, this would result in the carbon intensity estimate declining significantly from 276.1 to 193.3 tCO₂e/\$M revenue.

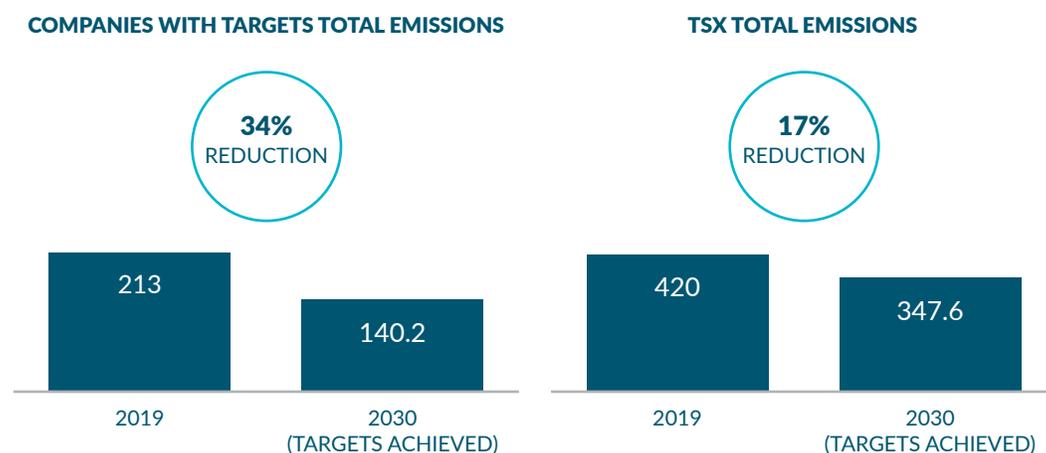
FIGURE 8

Potential Impact of TSX Companies Achieving Their Climate Targets

2020 vs 2030



2019 vs 2030



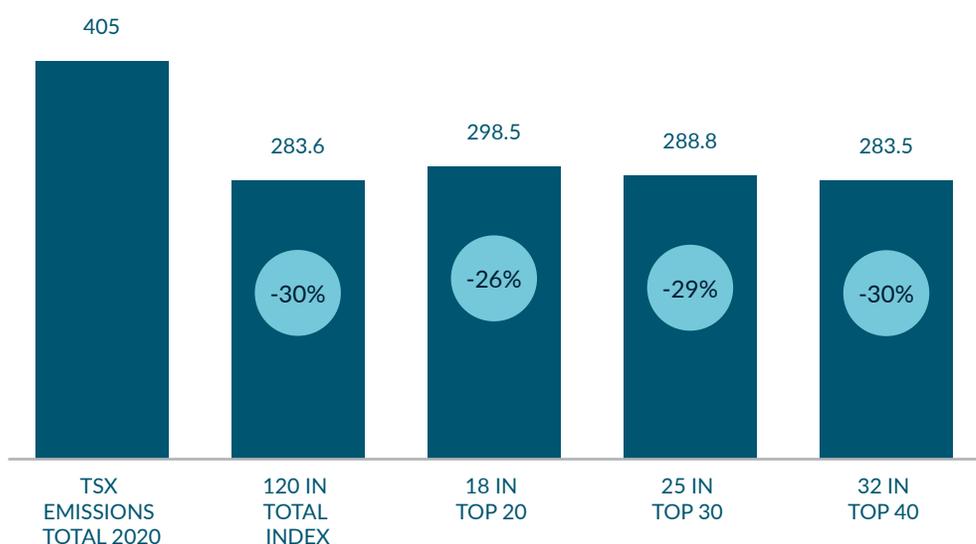
We extend our analysis to examine the impact of companies achieving their reduction targets to the top emitting groups of firms that will be discussed in greater detail in the next section. In particular, we identify groups of the Top 20/30/40/50 firms that report emissions in terms of their total GHG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

Among the Top 20 emitting firms that report emissions, a much higher percentage of firms have a stated reduction target (18 of 20, or 90%) than is the case across all Index firms. Table 4 shows that if these 18 firms met their targets it would result in an estimated total emissions reduction of 106.5m, which represents 26.3% of total estimated TSX Index emissions. Interestingly, this figure also represents 87.7% of the estimated total emissions reduction of 121.4m across all 120 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, which we discuss in the next section.

Moving to the other top emitting groups, we can see from Table 4 the Top 30 group includes 25 firms with a stated reduction target, and if these firms met their targets the aggregate reduction would be 116.2m, 28.7% of total estimated TSX Index emissions and 95.7% of the estimated total emissions reduction across all 120 firms with targets. In other words, if these 25 firms achieve their reduction targets, the aggregate result is roughly equivalent to having 100% success among all 120 firms that have stated targets. The Top 40 (50) groups include 32 (40) firms with targets, which would result in a total emissions reduction of 121.5m (123.6m), both more than 100% of the estimated reduction across all 120 firms with targets. This seems counterintuitive, but these results obtain because some firms actually did better than their 2030 target during 2020, presumably due to reduced emissions due to COVID.

FIGURE 9

Potential Impact of TSX Companies Achieving Their Climate Targets



4. THE S&P/TSX COMPOSITE INDEX TOP GHG EMITTERS

By April 2022, there were 700 signatory investors with \$68 trillion in assets supporting the global Climate Action 100+ initiative, and engagement was proceeding with 166 companies accounting for approximately 80 percent of annual global industrial emissions.³² In our 2021 study, we provided evidence regarding the number of companies that should be considered in the development of a Canadian version of Climate Action 100+. The establishment of a Canadian-based, finance-led initiative that would unite asset owners and investors in an effort to engage high-emitting firms was one of the recommendations of Canada's Expert Panel on Sustainable Finance. We are pleased that, since the release of our 2021 report, this initiative — known as Climate Engagement Canada (CEC)³³ — has come to fruition. To date, 29 organizations with more than \$3.6 trillion in assets have joined as participants. We are also pleased to note that the CEC has adopted the recommendation from our previous study by setting their engagement target at Canada's top 40 emitting companies. Our most current research, reflected in this report, validates the substantial impact of action and progress from that group of 40 companies.

To update our 2021 recommendations, we again rank 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 5 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.

TABLE 5

Summary Statistics – S&P/TSX Index Top Reporting Emitters

Group	Total Emissions (tCO ₂ e) millions	Percentage of Total Emissions of 163 that Disclose Emissions of 293.2m	Percentage of S&P/TSX Index Total Emissions Estimate of 405.0m	2020 Total Market Cap (\$b) (% Index Market Cap)	2020 Average (Median) Market Cap (\$b)
Top 20	238.4	81.3%	58.9%	630.6 (20.3%)	31.5(21.4)
Top 30	261.4	89.1%	64.5%	779.2 (25.0%)	26.0 (14.5)
Top 40	274.8	93.7%	67.9%	861.5 (27.7%)	21.5 (9.5)
Top 50	281.3	95.9%	69.5%	1019.2 (32.7%)	20.4 (8.8)
S&P/TSX Index	405.0 (est.)	100%	100%	3113.0	13.5 (4.1)

Table 5 shows that the top 20 reporting emitters account for 238.4m, or **81.3%** of the total emissions of the 163 firms that reported emissions (293.2m). This figure represents 58.9% of the estimate of total TSX index firm emissions (405.0m). It also represents more than one-third of total 2020 Canadian emissions of 672m (35.4%);³⁴ although it is important to recognize that the two figures are not directly comparable since the 672m figure for Canada includes only Canadian emissions, while the corporate emissions figures include emissions both within and outside Canada.

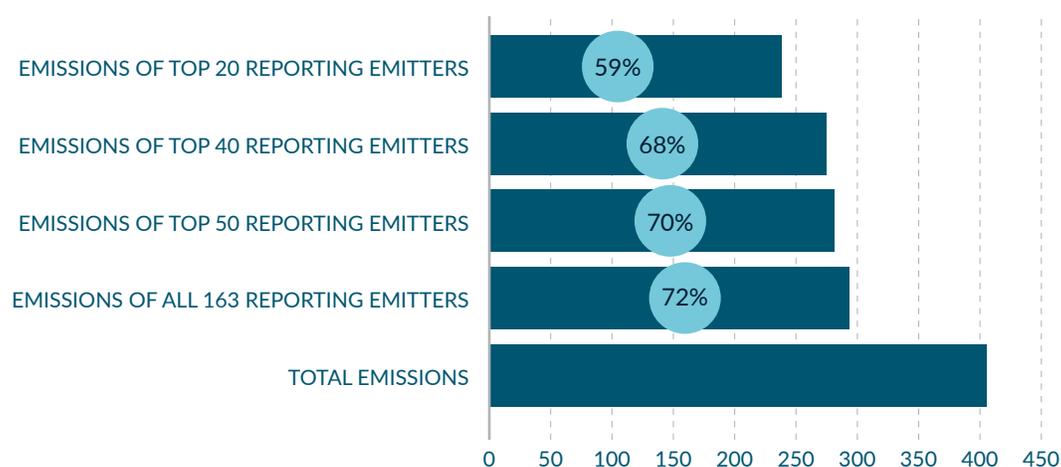
As large emitters, it is no surprise that such firms **tend to be bigger** than the average company in the Index. In particular, while 20 represents less than 10% of the actual number of companies in the Index, the total market capitalization for these firms is \$630.6b, or 20.3% of the total Index market cap of \$3,113.0b. The average (median) market cap of the Top 20 firms is \$31.5b (\$21.4b) versus \$13.5b (\$4.1b) for the Index.

The additional rows in Table 5 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 261.4m in 2020 — 89.1% of the total by reporting firms and 64.5% 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 67.9% and 69.5% respectively of the Index total estimate of emissions.

The statistics provided in Table 5 show that the Top 20 reporting emitters account for well over half (58.9%) of total Index emissions, and that these firms are much larger than average. The Top 40 firms account for over two-thirds of total Index emissions (27.7% 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 69.5% of TSX emissions and 32.7% of TSX market cap).

FIGURE 10

Emission contributions of top emitting companies



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 other firms that are top emitters that did not report 2020 GHG emissions. Specifically, our analysis suggests that the Top 20 reporting emitters account for **roughly 81%** of total *reported* emissions and 59% of our estimate for total emissions for the TSX index. Moving to the Top 40 reporting firms, we find they account for 94% of reported emissions, and over two-thirds (68%) of total TSX Index 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 tCO₂e of emissions committed to a 20% reduction in emissions by 2025, this would be equivalent to a reduction of 2m tCO₂e. In this case we would assume that they would again commit to further reduce emissions by another 2m tCO₂e 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.

ENDNOTES

- 1 Carbon intensity is most commonly defined as total GHG emissions (Scope 1 + Scope 2) divided by revenue, and expressed as tCO₂e/\$M revenue.
- 2 Source: S&P Dow Jones Indices – S&P 500 and Down Jones Sustainability World Index Fact Sheets, July 2020.
- 3 Source: Responsible Investor, [“Canada to launch national version of CA 100+ to steward country’s big emitters”](#), February 18, 2021.
- 4 Source: IFRS Foundation, [“IFRS Foundation announces International Sustainability Standards Board, consolidation with CDSB and VRF, and publication of prototype disclosure requirements”](#), November 3, 2021.
- 5 Source: Value Reporting Foundation, [“ISSB launches consultation on first two proposed standards”](#), March 31, 2022.
- 6 Source: IFRS Foundation, [“ISSB communicates plans to build on SASB’s industry-based standards and leverage SASB’s industry-based approach to standards development”](#), March 31, 2022.
- 7 Source: OSC, [“Canadian securities regulators seek comment on climate-related disclosure requirements”](#), October 18, 2021.
- 8 Source: SEC Fact Sheet [“Enhancement and Standardization of Climate-Related Disclosures”](#), March 21, 2022.
- 9 Source: Millani, [“Semi-Annual Study of Canadian Institutional Investors”](#), February 14, 2022.
- 10 For example, consider the recent announcement by Canada Pension Plan Investment Board, [“CPP announces commitment to Net Zero by 2050”](#), February 10, 2022.
- 11 Sources: [“The Impact of Carbon Disclosure Mandates on Emissions and Financial Operating Performance”](#), Downar et al. 2020; and, [“Mandatory Corporate Carbon Disclosure: Evidence from a Natural Experiment”](#), Jouvenot and Krueger.
- 12 Source: The Economist, [“How much can financiers do about climate change?”](#) June 20, 2020.
- 13 Source: IEA, [“Number of companies in the S&P 500 reporting energy- and emissions-related metrics”](#), May 26, 2020.
- 14 Source: ecoact, [“The 10th Annual Sustainability Reporting Performance of the FTSE 100”](#), September, 2020.
- 15 Source: STOXX Climate Impact Assessment Report, December, 2021.
- 16 Source: Globe and Mail, [“Canada’s greenhouse gas emissions fell by nine per cent during first year of the pandemic”](#), April 14, 2022.
- 17 As of May 2021, there were 778 TSX issuers, and 1,659 TSX Venture issuers.
- 18 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.
- 19 Source: [Gfanzero.com](#).
- 20 Source: IEA, [“Number of companies in the S&P 500 reporting energy- and emissions-related metrics”](#), May 26, 2020.
- 21 Source: ecoact, [“The 10th Annual Sustainability Reporting Performance of the FTSE 100”](#), September 2020.
- 22 Source: ecoact, [“The Sustainability Reporting Performance of the DOW 30 Annual Report”](#), September 2020.

- 23 Source: Yahoo Finance, "Climate commitments from S&P 500 companies remain unclear despite emissions goals: Morgan Stanley", October 27, 2021.
- 24 The same firm may have more than one absolute target.
- 25 For the purposes of our study, we classify firms as somewhat aligned with science-based targets (SBTs) if they have a net-zero or carbon neutral commitment any time up to 2050, and if they have an intermediate target of reducing emissions by at least 30% before and up to 2030. We recognize these criteria are not as detailed as those included in more involved assessments of whether or not a company's targets are SBTs, such as the sector-specific guidance prescribed by the Science Based Targets initiative (SBTi). Nonetheless our criteria do provide useful guidance.
- 26 Source: Climate Action 100+, "Climate Action 100+ Net Zero Company Benchmark shows an increase in company net zero commitments, but much more urgent action is needed to align with a 1.5°C future," March 30, 2022.
- 27 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." 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.
- 28 Source: Yahoo Finance, "Climate commitments from S&P 500 companies remain unclear despite emissions goals: Morgan Stanley", October 27, 2021.
- 29 Source: Science Based Targets, "No major G7 stock index aligned with Paris climate goals", June 9, 2021.
- 30 Source: Climate Action 100+, "Climate Action 100+ Net Zero Company Benchmark shows an increase in company net zero commitments, but much more urgent action is needed to align with a 1.5°C future," March 30, 2022.
- 31 This figure also represents 91.2% of the total reported emissions by the 163 reporting companies.
- 32 Source: Climateaction100.org, April 23, 2022.
- 33 Source, Climateengagement.ca.
- 34 Source: Globe and Mail, "Canada's greenhouse gas emissions fell by nine per cent during first year of pandemic", April 14, 2022.