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**Auteurs:** Anne-France Bolay, Anders Bjørn, Laure Patouillard, Olaf Weber, & Manuele Margni  
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# What drives Companies' Progress on their Emission Reduction Targets?

Anne-France Bolay<sup>1\*</sup>, Anders Bjørn<sup>2,3,4</sup>, Laure Patouillard<sup>5</sup>, Olaf Weber<sup>6</sup>, Manuele Margni<sup>1,7</sup>

<sup>1</sup> CIRAI, Polytechnique Montréal, Department of Mathematical and Industrial Engineering, 2500 chemin de Polytechnique, Montréal, Québec H3T 1J4, Canada

<sup>2</sup> Centre for Absolute Sustainability, Technical University of Denmark, Kongens Lyngby, Denmark.

<sup>3</sup> Section for Quantitative Sustainability Assessment, Department of Environmental and Resource Engineering, Technical University of Denmark, Kongens Lyngby, Denmark.

<sup>4</sup> Loyola Sustainability Research Centre, Concordia University, Montréal, Quebec, Canada.

<sup>5</sup> CIRAI, Polytechnique Montréal, Department of Chemical Engineering, C.P. 6079, succ. Centre-Ville, Montréal (QC), H3C 3A7, Canada

<sup>6</sup> Faculty of Environment, School of Environment, Enterprise and Development (SEED), University of Waterloo, 200 University Avenue West, Waterloo, Ontario N2L 3G1, Canada

<sup>7</sup> Institute of Sustainable Energy, School of Engineering, University of Applied Sciences and Arts Western Switzerland (HES-SO), Rue de l'Industrie 23, Sion 1950, Switzerland

\*Contact: [anne-france.bolay@hec.ca](mailto:anne-france.bolay@hec.ca)

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## 1 LITERATURE REVIEW

### 1.1 Target progress indicators

As mentioned in the main article, the following progress indicators are used by existing studies: percentage of the target achieved (Dragomir, 2023; Ioannou et al., 2016; SBTi, 2022a; Yeo et al., 2022), progress ratio (Hsu et al., 2020), and categorical variables using terminology such as on track, behind, or achieved (Callery and Kim, 2021; Giesekam et al., 2021; Kuramochi et al., 2021; Wang, 2017; Yeo et al., 2022).

The percentage of target achieved (Equation 2 in the main article) has been used by Ioannou et al. (2016) and Dragomir (2023), with an adaptation by Yeo et al. (2022) that divides it by the number of years passed since the base year. Indeed, if a company has started its target last year, a 20% achievement of the targeted reduction does not represent the same attainment if there is 1 year remaining to the target or 9 years. To contravene to a certain extent to the lack of integration of the remaining time left to achieve a target, Ioannou et al. (2016) used the percentage of time elapsed (Equation 3 in the main article) as a control variable. This was also presented separately by SBTi (2022b), with Dragomir (2023) and Yeo et al. (2022) visually presenting it with the remaining years left to the target.

Progress ratio, as defined by Hsu et al. (2020), consists of the reduction achieved on the reduction required at the year assessed, which measures the speed of the target progression. This assumes a linear reduction trajectory between the base year and target year (constant reduction rate per year), i.e., different equations, but equivalent to Equation 2 (main article) divided by Equation 3 (main article). The progress ratio has often been transformed into categorical variables where a value of 1 or over corresponds to on track, a value under 1, not on track (Callery and Kim, 2021; Kuramochi et al., 2021; Wang, 2017; Yeo et al., 2022) and achieved when the year assessed has lower emissions than the target year (Giesekam et al., 2021). Both the progress ratio and categorical variables integrate a time perspective; however, targets will be judged not on track by categorical variables regardless of whether they are slightly or highly behind their linear reduction trajectory, leading to a lack of comparability.

To the authors' knowledge, only the Hsu et al. (2020) study has used the progress ratio as dependent variable, and its use in this study is limited by the specificity of our sample. Hsu et al. (2020) assessed city targets with a 2020 target year (homogeneous sample), which differs from the specificity of corporate targets (Yeo et al., 2022). As shown by Yeo et al. (2022), corporate targets have substantial progress variation near their base year, implying some targets have a high percentage achieved with a low percentage of time elapsed (extreme values with the progress ratio indicator; outliers).

On the other hand, the studies by Dahlmann et al. (2019) and Aldy et al. (2023) used a different approach by measuring the change in corporate carbon performance over time, with Dahlmann et al. (2019) measuring the percentage of corporate carbon performance change over one year and Aldy et al. (2023) measuring the annualized change over 10 years. These approaches are similar to using the percentage of target achieved (not integrating the remaining time left to achieve the target) when it corresponds to the scope covered by companies' targets, which does not appear to be the case for all the targets assessed by these studies, thus lacking comparability with the progression measure used).

## 2 METHODOLOGY

### 2.1 List of determinants

**Table 1: List of all the determinants with their corresponding category, preprocessing and unit, and the corresponding CDP question. Abbreviations: SC1 = scope 1; SC2 LB = scope 2 location-based; SC2 MB = scope 2 market-based, SC12LB; scope 1 and scope 2 location-based, SC12MB; scope 1 and scope 2 market-based, SC3; scope 3, SBTi = Science-Based Target Initiative; ETS = Emissions Trading System.**

#	Category	Determinant name	Explanation	Unit	CDP question
1	Target parameters	Annualized target ambition	Target ambition harmonized at scope 1 and 2 divided by the timeframe of the target	Percentage	C4.1a, C4.1b
2	Target parameters	Percentage of the target achieved at the year the target was set	Percentage of the target achieved when the target is launched (start year) which corresponds to the percentage of the target achieved due to the choice of the baseline year.	Percentage	C4.1a, C4.1b
3	Target parameters	Absolute target (not intensity target)	The value is 1 for an absolute target and 0 for an intensity target	1 or 0	C4.1a, C4.1b
4	Target parameters	Number of years between the base year and the target year	Difference between the target year and the base year	Year	C4.1a_C5, C4.1a_C8, C4.1b_C6, C4.1b_C9
5	Target parameters	Number of years between the base year and the year the target was set	Difference between the start year and the base year	Year	C4.1a_C5, C4.1a_C2, C4.1b_C6, C4.1b_C2
6	Target parameters	Remaining numbers of	Difference between the target year and the reporting year	Year	C0.2_C2, C4.1a_C8,

#	Category	Determinant name	Explanation	Unit	CDP question
		years until the target year			C0.2_C2, C4.1b_C9
7	Target parameters	Baseline year	Reference year of the target	Calendar year	C4.1a_C5, C4.1b_C6
8	Target parameters	Baseline year emissions total	Total of scope 1 and 2 emissions for the baseline year. The scope 2 market-based is used only when the target covers the scope 2 market-based.	TCO2 eq	C5.1_C3
9	Target parameters	Start year	Launching year of the target	Calendar year	C4.1a_C2, C4.1b_C2
10	Target parameters	Last year	Reporting year	Calendar year	C0.2_C2
11	Target parameters	Last year emissions total	Total of scope 1 and 2 emissions for the reporting year. The scope 2 market-based is used only when the target covers the scope 2 market-based.	TCO2 eq	C6.1_C1, C6.3_C1, C6.3_C2
12	Target parameters	Target year	Target year of the target	Calendar year	C4.1a_C8, C4.1b_C9
13	Target parameters	Expected reduced emissions	Correspond to the base year emissions covered by the target multiplied by the target ambition	TCO2 eq	C4.1a_C6, C4.1a_C9, C4.1b_C12
14	Target parameters	SC12LB covered by target	If the target covers the scope 1 and 2 location-based, the value is 1, else, 0.	1 or 0	C4.1a_C4, C4.1b_C4
15	Target parameters	SC12MB covered by target	If the target covers the scope 1 and 2 market-based, the value is 1, else, 0.	1 or 0	C4.1a_C4, C4.1b_C4
16	Target parameters	SC1 covered by target	If the target covers the scope 1, the value is 1, else, 0.	1 or 0	C4.1a_C4, C4.1b_C4
17	Target parameters	SC2LB only covered by target	If the target covers the scope 2 location-based, the value is 1, else, 0.	1 or 0	C4.1a_C4, C4.1b_C4
18	Target parameters	SC2MB only covered by target	If the target covers the scope 2 market-based, the value is 1, else, 0.	1 or 0	C4.1a_C4, C4.1b_C4
19	Target parameters	Percentage scope covered by the target	Percentage scope covered by the target as reported by the company	Percentage	C4.1a_C7, C4.1b_C8
20	Target parameters	Approved by the SBTi	If the company reports that the target is approved by the SBTi, the	1 or 0	C4.1a_C14, C4.1b_C17

#	Category	Determinant name	Explanation	Unit	CDP question
			value is 1. If not the case, the value is 0.		
21	Emissions reporting and other targets	Disclose 100% of emissions for scope 1 and 2	If all sources of scope 1 and 2 are included in the reporting boundaries, the value is 1 and 0 otherwise.	1 or 0	C6.4
22	Emissions reporting and other targets	SC1 emissions breakdown by gas type	If the company reports the breakdown by GHG type for their scope 1 emissions, the value is 1 and otherwise, 0.	1 or 0	C7.1
23	Emissions reporting and other targets	SC1 emissions breakdown by country	If the company reports the breakdown by countries for their scope 1 emissions, the value is 1 and otherwise, 0.	1 or 0	C7.2_C2
24	Emissions reporting and other targets	SC1 emissions breakdown by business division	If the company reports the breakdown by business division for their scope 1 emissions, the value is 1 and otherwise, 0.	1 or 0	C7.3a_C2
25	Emissions reporting and other targets	SC1 emissions breakdown by business facility	If the company reports the breakdown by business facility for their scope 1 emissions, the value is 1 and otherwise, 0.	1 or 0	C7.3b_C2
26	Emissions reporting and other targets	Carbon intensity figure per revenue	If the company reports a carbon intensity result per revenue, the value is 1 and otherwise, 0.	1 or 0	C6.10_C1
27	Emissions reporting and other targets	SC2 LB emissions	If the company reports their scope 2 location-based emissions for the reporting year, the value is 1 and otherwise, 0.	1 or 0	C6.3_C2
28	Emissions reporting and other targets	SC2 MB emissions	If the company reports their scope 2 market-based emissions for the reporting year, the value is 1 and otherwise, 0.	1 or 0	C6.3_C2
29	Emissions reporting and other targets	Use renewable energy certificate in their scope 2 market-based accounting	If the company mentions using renewable energy certificates in their scope 2 market-based emissions reporting, the value is 1 and otherwise, 0.	1 or 0	C8.2e_C1
30	Emissions reporting and other targets	More than one target	The value is 1 when the company reports more than one target including short-term and long-	1 or 0	C4.1a, C4.1b

#	Category	Determinant name	Explanation	Unit	CDP question
			term target, absolute or intensity targets, or target covering the scope 3 and 0 when they report only one target.		
31	Emissions reporting and other targets	Renewable energy consumption	If the company reports their renewable energy consumption, the value is 1 and otherwise, 0.	1 or 0	C8.2a_C2
32	Emissions reporting and other targets	Energy target	If the company reports an energy target, the value is 1 and otherwise, 0.	1 or 0	C4.2a_C1
33	Emissions reporting and other targets	SC3 target	If the company reports an absolute or an intensity target covering the scope 3, the value is 1 and otherwise, 0.	1 or 0	C4.1a_C4, C4.1b_C4
34	Emissions reporting and other targets	SC3 emissions for at least one category	If the company reports scope 3 emissions, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
35	Emissions reporting and other targets	SC3 emissions for the category 1 Purchased goods and services	If the company reports scope 3 emissions for the category 1, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
36	Emissions reporting and other targets	SC3 emissions for the category 2 Capital goods	If the company reports scope 3 emissions for the category 2, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
37	Emissions reporting and other targets	SC3 emissions for the category 3 Fuel-and-energy-related activities not included in SC 1 or 2	If the company reports scope 3 emissions for the category 3, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
38	Emissions reporting and other targets	SC3 emissions for the category 4 Upstream transportation and distribution	If the company reports scope 3 emissions for the category 4, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
39	Emissions reporting and other targets	SC3 emissions for the category 5 Waste generated in operations	If the company reports scope 3 emissions for the category 5, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2

#	Category	Determinant name	Explanation	Unit	CDP question
40	Emissions reporting and other targets	SC3 emissions for the category 6 Business travel	If the company reports scope 3 emissions for the category 6, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
41	Emissions reporting and other targets	SC3 emissions for the category 7 Employee commuting	If the company reports scope 3 emissions for the category 7, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
42	Emissions reporting and other targets	SC3 emissions for the category 8 Upstream leased assets	If the company reports scope 3 emissions for the category 8, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
43	Emissions reporting and other targets	SC3 emissions for the category 9 Downstream transportation and distribution	If the company reports scope 3 emissions for the category 9, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
44	Emissions reporting and other targets	SC3 emissions for the category 10 Processing of sold products	If the company reports scope 3 emissions for the category 10, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
45	Emissions reporting and other targets	SC3 emissions for the category 11 Use of sold products	If the company reports scope 3 emissions for the category 11, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
46	Emissions reporting and other targets	SC3 emissions for the category 12 End of life treatment of sold products	If the company reports scope 3 emissions for the category 12, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
47	Emissions reporting and other targets	SC3 emissions for the category 13 Downstream leased assets	If the company reports scope 3 emissions for the category 13, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
48	Emissions reporting and other targets	SC3 emissions for the category 14 Franchises	If the company reports scope 3 emissions for the category 14, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
49	Emissions reporting and other targets	SC3 emissions for the category 15 Investments	If the company reports scope 3 emissions for the category 15, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
50	Emissions reporting and other targets	SC3 emissions for the category	If the company reports scope 3 emissions for the category 16, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2



#	Category	Determinant name	Explanation	Unit	CDP question
		16 Other upstream			
51	Emissions reporting and other targets	SC3 emissions for the category 17 Other downstream	If the company reports scope 3 emissions for the category 17, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
52	Emissions reporting and other targets	Number SC3 categories reported	The number of scope 3 categories reported by the company	Number of categories	C6.5_C2
53	Emissions reporting and other targets	More than fifteen SC3 categories reported	If the company reports to 15 or more scope 3 categories, the value is 1 and otherwise, 0.	1 or 0	C6.5_C2
54	Governance	Board oversight climate-related issues	If the board oversight climate-related issues, the value is 1 and otherwise, 0.	1 or 0	C1.1
55	Governance	CEO oversight climate-related issues	If the CEO oversight climate-related issues, the value is 1 and otherwise, 0.	1 or 0	C1.2_C1
56	Governance	Board oversight on target scheduled at every meeting	If the board monitors the climate change target at every board meeting, the value is 1 and otherwise, 0.	1 or 0	C1.1b_C2
57	Governance	Management remuneration link to climate-related issues	If the management remuneration is linked to climate-related issues, the value is 1 and otherwise, 0.	1 or 0	C1.3_C1
58	Governance	CEO remuneration link to climate-related issues	If the CEO remuneration is linked to climate-related issues, the value is 1 and otherwise, 0.	1 or 0	C1.3_C1
59	Governance	Board chair remuneration link to climate-related issues	If the board remuneration is linked to climate-related issues, the value is 1 and otherwise, 0.	1 or 0	C1.3_C1
60	Carbon price	ETS or carbon taxes regulation	If the totality or part of the operations are regulated by ETS, cap and trade or carbon taxes, the value is 1 and otherwise, 0.	1 or 0	C11.1
61	Carbon price	ETS or carbon taxes regulation next three years	If no operations are regulated by ETS, cap and trade or carbon taxes, but the company anticipate it will	1 or 0	C11.1

#	Category	Determinant name	Explanation	Unit	CDP question
			be in the next three years, the value is 1 and otherwise, 0.		
62	Carbon price	Voluntary offsetting	If the company generate or purchase voluntary offsetting carbon credit, the value is 1 and otherwise, 0.	1 or 0	C11.2a_C8
63	Carbon price	Internal carbon price	If the company use an internal carbon price into their decision process, the value is 1 and otherwise, 0.	1 or 0	C11.3
64	Risks and Opportunities	Physical risks considered relevant	If the company report that physical acute and/or chronic risks is relevant or sometimes relevant, the value is 1 and otherwise, 0.	1 or 0	C2.2a_C1
65	Risks and Opportunities	Transition risks considered relevant	If the company report at least one of the transition risks (current regulation, emerging regulation, legal, market, reputation, technological) is relevant or sometimes relevant, the value is 1 and otherwise, 0.	1 or 0	C2.2a_C1
66	Risks and Opportunities	Financial impact estimate for climate risks	If the company identifies risks with a substantive financial or strategic impact on the direct operations, upstream operations and/or downstream operations, the value is 1 and otherwise, 0.	1 or 0	C2.3a_C2, C2.3a_C10
67	Risks and Opportunities	Financial impact estimate for climate opportunities	If the company identifies opportunities with a substantive financial or strategic impact on the direct operations, upstream operations and/or downstream operations, the value is 1 and otherwise, 0.	1 or 0	C2.4a_C2
68	Strategy	Low-carbon transition plan	If the company report having develop a low-carbon transition plan, the value is 1 and otherwise, 0.	1 or 0	C3.1
69	Strategy	Influenced by climate-related risks or opportunities	If one the following area is influenced by climate-related risks, the value is 1 and otherwise, 0. The areas are products and	1 or 0	C3.1d_C1

#	Category	Determinant name	Explanation	Unit	CDP question
			services, supply chain and/or value chain, investments in R&D, and operations.		
70	Strategy	Climate-related scenario analysis (quantitative <u>and</u> qualitative)	If the company have developed a quantitative and a qualitative scenario analysis, the value is 1 and otherwise, 0.	1 or 0	C3.1a
71	Strategy	Climate-related scenario analysis (quantitative <u>or</u> qualitative)	If the company have developed a quantitative or a qualitative scenario analysis, the value is 1 and otherwise, 0.	1 or 0	C3.1a
72	Strategy	Low-carbon products	If the company have low-carbon products, the value is 1. If not, the value is 0.	1 or 0	C4.5
73	Strategy	Revenue for low-carbon products	Percentage of low-carbon products in the reporting year	Percentage	C4.5a_C5, C4.5a_C3
74	Strategy	CO2 savings for implemented, commenced, or to be implemented initiatives	If the company reports an estimated CO2 savings for implemented, commenced, or to be implemented initiatives, the value is 1 and otherwise, 0.	1 or 0	C4.3a_C2
75	Strategy	CO2 savings for voluntary initiatives	If the company reports an estimated CO2 savings for implemented, commenced, or to be implemented voluntary initiatives, the value is 1 and otherwise, 0.	1 or 0	C4.3b_C2, C4.3b_C4
76	Strategy	CO2 savings for mandatory initiatives	If the company reports an estimated CO2 savings for implemented, commenced, or to be implemented mandatory initiatives, the value is 1 and otherwise, 0.	1 or 0	C4.3b_C2, C4.3b_C4
77	Strategy	Annual savings for voluntary initiatives	If the company reports financial annual savings for their voluntary initiatives, the value is 1 and otherwise, 0.	1 or 0	C4.3b_C5, C4.3b_C4

#	Category	Determinant name	Explanation	Unit	CDP question
78	Strategy	Annual savings for mandatory initiatives	If the company reports financial annual savings for their mandatory initiatives, the value is 1 and otherwise, 0.	1 or 0	C4.3b_C5, C4.3b_C4
79	Strategy	Investment required for voluntary initiatives	If the company reports the investment required for their voluntary initiatives, the value is 1 and otherwise, 0.	1 or 0	C4.3b_C6, C4.3b_C4
80	Strategy	Investment required for mandatory initiatives	If the company reports the investment required for their mandatory initiatives, the value is 1 and otherwise, 0.	1 or 0	C4.3b_C6, C4.3b_C4
81	Engagement	Engage with value chain actors	If the company reports they engage on climate-related issues with the value-chain actors, the value is 1 and otherwise, 0.	1 or 0	C12.1
82	Engagement	Engage with scope 3 suppliers	Percentage of the supplier related to scope 3 emissions with whom the company engage with	Percentage	C12.1a_C5
83	Engagement	Engagement with customers	If the company reports they engage on climate-related issues with their customers, the value is 1 and otherwise, 0.	1 or 0	C12.1b_C1
84	Engagement	Direct influence on policymakers	If the company engage in activities directly influencing policymakers, the value is 1 and otherwise, 0.	1 or 0	C12.3
85	Engagement	Indirectly influence policymakers	If the company engage in activities indirectly influencing policymakers, the value is 1 and otherwise, 0.	1 or 0	C12.3
86	Engagement	Process in place to ensure direct or indirect activities influencing policy are consistent with climate change strategy	If the company have process in place to ensure direct or indirect activities influencing policy are consistent with their climate change strategy, the value is 1 and otherwise, 0.	1 or 0	C12.3f
87	Engagement	Position consistent with trade	If the position of trade associations is consistent with the company	1 or 0	C12.3c_C2

#	Category	Determinant name	Explanation	Unit	CDP question
		associations where are members	strategy, the value is 1 and otherwise, 0.		
88	Engagement	Position mixed with trade associations where are members	If the position of trade associations is mixed (not totally consistent) with the company strategy, the value is 1 and otherwise, 0.	1 or 0	C12.3c_C2
89	Engagement	Disclose list of all funded research organisations	If the company disclose publicly the list of all research organizations, they are funding, the value is 1 and otherwise, 0.	1 or 0	C12.3d
90	Verification	Third-party verification	If the company verifies by a third-party at least one of their scopes, the value is 1 and otherwise, 0.	1 or 0	C10.1_C1
91	Additional reporting	Report for five years in CDP	If the company has reported in at least five CDP questionnaires between 2010 to 2020, the value is 1 and otherwise, 0.	1 or 0	CDP questionnaire from 2010 to 2020
92	Additional reporting	Report for ten years in CDP	If the company has reported in at least ten CDP questionnaires between 2010 to 2020, the value is 1 and otherwise, 0.	1 or 0	CDP questionnaire from 2010 to 2020
93	Additional reporting	Report in another place than CDP	If the company reports climate change information in another communication channels such as CSR report, the value is 1 and otherwise, 0.	1 or 0	C12.4_C1
94	Additional reporting	Report in financial statement	If the company reports climate change information in their financial statement, the value is 1 and otherwise, 0.	1 or 0	C12.4_C1
95	Sector	Apparel	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
96	Sector	Biotech, health care & pharma	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
97	Sector	Food, beverage & agriculture	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2

<b>#</b>	<b>Category</b>	<b>Determinant name</b>	<b>Explanation</b>	<b>Unit</b>	<b>CDP question</b>
<b>98</b>	Sector	Fossil Fuels	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>99</b>	Sector	Hospitality	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>100</b>	Sector	Infrastructure	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>101</b>	Sector	International bodies	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>102</b>	Sector	Manufacturing	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>103</b>	Sector	Materials	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>104</b>	Sector	Power generation	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>105</b>	Sector	Retail	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>106</b>	Sector	Services	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>107</b>	Sector	Transportation services	CDP sector classification. Value of 1 if correspond to that sector and 0 if not.	1 or 0	C0.2
<b>108</b>	Region	Australia and New Zealand	Based on the country of the company headquarter location. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
<b>109</b>	Region	Central America	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
<b>110</b>	Region	Eastern Asia	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2

<b>#</b>	<b>Category</b>	<b>Determinant name</b>	<b>Explanation</b>	<b>Unit</b>	<b>CDP question</b>
111	Region	Eastern Europe	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
112	Region	Northern America	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
113	Region	Northern Europe	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
114	Region	South America	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
115	Region	South-Eastern Asia	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
116	Region	Southern Africa	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
117	Region	Southern Asia	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
118	Region	Southern Europe	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
119	Region	Western Asia	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2
120	Region	Western Europe	Based on the country of the company headquarter. Value of 1 if the country is in that region and 0 if not.	1 or 0	C0.2

### 3 FURTHER RESULTS

#### 3.1 Final sample description per country

Table 2: Number of companies and targets by country included in the final sample. The scopes covered by the targets are represented in the last five columns. Abbreviations: SC1 = scope 1; SC2 LB = scope 2 location-based; SC2 MB = scope 2 market-based.

Country	Number companies	Number targets	SC1 & 2 LB	SC1 & 2 MB	SC1	SC2 LB	SC2 MB
Argentina	1	2	0	0	0	2	0
Australia	15	26	13	6	5	2	0
Austria	7	8	4	3	1	0	0
Belgium	7	14	5	3	2	2	2
Brazil	18	36	14	4	13	4	1
Canada	32	42	29	8	5	0	0
Chile	1	1	0	0	1	0	0
China	83	100	58	6	14	20	2
China, Hong Kong Special Administrative Region	13	19	9	3	5	1	1
China, Macao Special Administrative Region	1	1	1	0	0	0	0
Colombia	4	5	0	2	2	1	0
Costa Rica	1	1	0	1	0	0	0
Czechia	2	2	0	1	1	0	0
Denmark	11	15	4	10	0	1	0
Finland	16	24	10	12	1	0	1
France	44	63	24	29	4	3	3
Germany	34	57	14	25	10	4	4
Greece	2	4	0	0	3	1	0
India	28	42	22	5	10	3	2
Indonesia	3	4	2	0	1	1	0
Ireland	9	15	7	5	2	1	0
Italy	24	43	12	10	12	6	3
Japan	73	112	39	65	4	1	3
Kuwait	1	1	1	0	0	0	0
Malaysia	2	4	1	0	3	0	0
Mexico	7	11	6	3	1	1	0
Netherlands	8	9	3	6	0	0	0
New Zealand	2	2	2	0	0	0	0
Norway	13	20	14	0	3	3	0
Poland	2	2	0	0	2	0	0



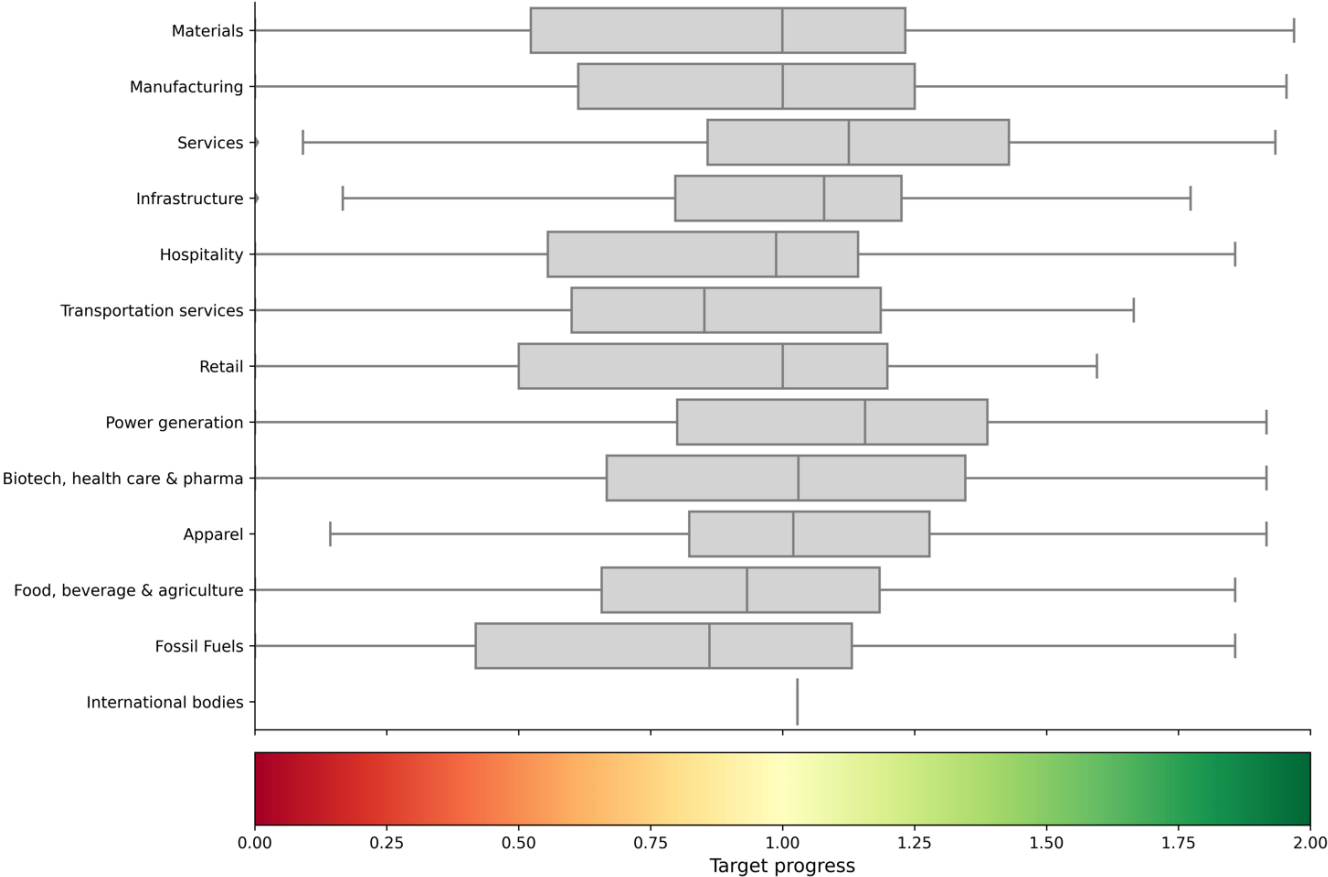
Country	Number companies	Number targets	SC1 & 2 LB	SC1 & 2 MB	SC1	SC2 LB	SC2 MB
Portugal	8	9	1	7	0	0	1
Republic of Korea	36	60	57	1	1	1	0
Russian Federation	4	8	6	0	2	0	0
Singapore	3	4	2	2	0	0	0
Slovakia	2	6	1	2	1	1	1
South Africa	21	27	18	3	0	6	0
Spain	30	68	11	32	12	5	8
Sweden	25	31	9	19	2	0	1
Switzerland	23	31	7	13	6	2	3
Taiwan, Greater China	57	91	47	5	17	22	0
Thailand	8	11	6	4	1	0	0
Turkey	25	47	33	6	5	3	0
United Kingdom of Great Britain and Northern Ireland	75	119	54	47	11	5	2
United States of America	249	331	146	132	31	19	3
<b>Total</b>	<b>1030</b>	<b>1528</b>	<b>692</b>	<b>480</b>	<b>194</b>	<b>121</b>	<b>41</b>

### 3.2 Final sample description per region

Table 3: Number of companies and targets by region included in the final sample. The scopes covered by the targets are represented in the last five columns. Abbreviations: SC1 = scope 1; SC2 LB = scope 2 location-based; SC2 MB = scope 2 market-based.

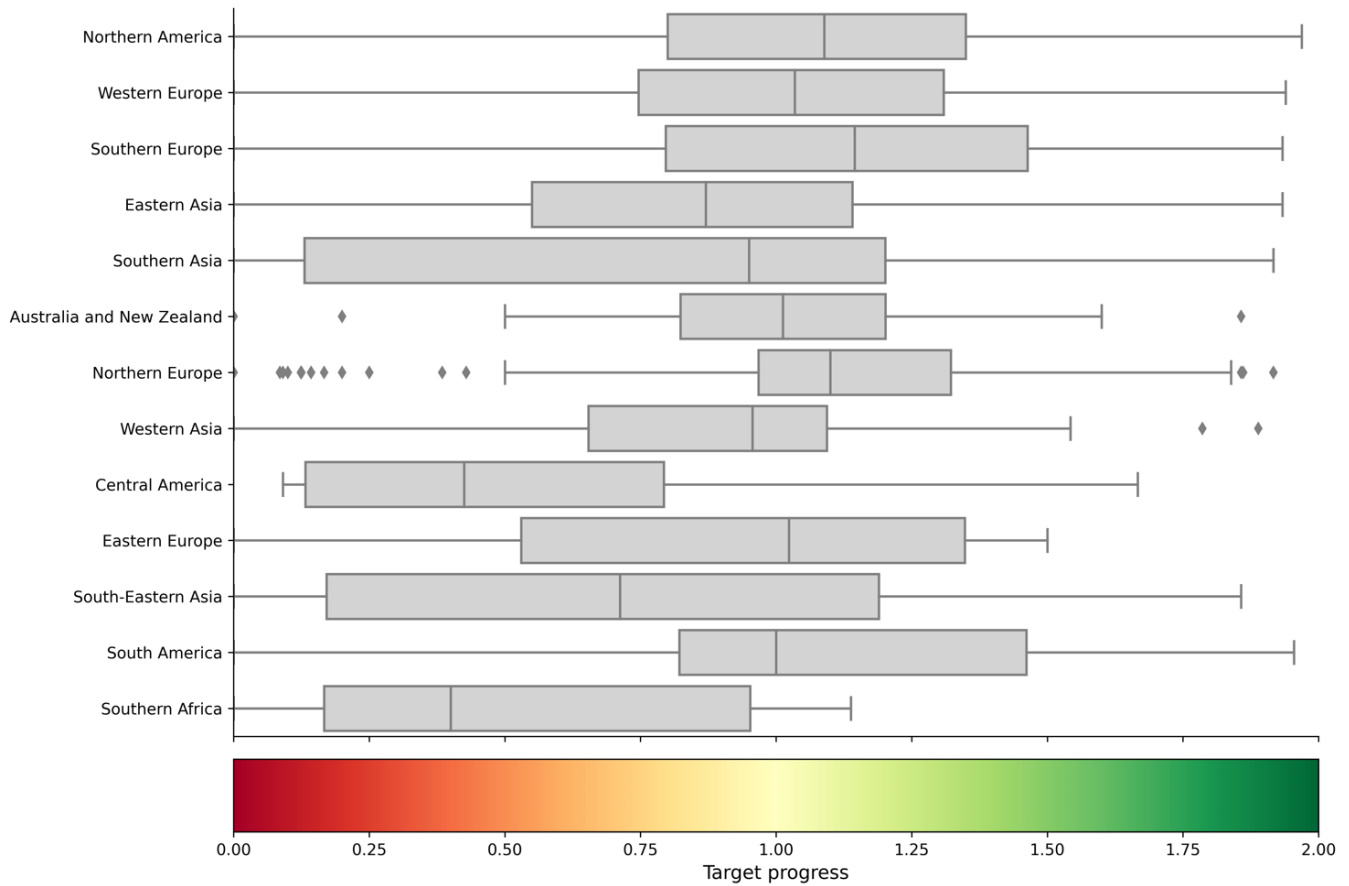
Region	Number companies	Number targets	SC1 & 2 LB	SC1 & 2 MB	SC1	SC2 LB	SC2 MB
Australia and New Zealand	17	28	15	6	5	2	0
Central America	8	12	6	4	1	1	0
Eastern Asia	263	383	211	80	41	45	6
Eastern Europe	10	18	7	3	6	1	1
Northern America	281	373	175	140	36	19	3
Northern Europe	149	224	98	93	19	10	4
South America	24	44	14	6	16	7	1
South-Eastern Asia	16	23	11	6	5	1	0
Southern Africa	21	27	18	3	0	6	0
Southern Asia	28	42	22	5	10	3	2
Southern Europe	64	124	24	49	27	12	12
Western Asia	26	48	34	6	5	3	0
Western Europe	123	182	57	79	23	11	12
<b>Total</b>	<b>1030</b>	<b>1528</b>	<b>692</b>	<b>480</b>	<b>194</b>	<b>121</b>	<b>41</b>

### 3.3 Target progress per sector



**Figure 1: Distribution per sector of target progress indicator  $P_{k,t}$ . The color bar ranging from orange to red indicates targets behind linear reduction trajectory, while the range from yellow to green indicates targets ahead of that trajectory (see Figure 1 in the main article).**

### 3.4 Target progress per region



**Figure 2: Distribution per region of target progress indicator  $P_{k,t}$ .** The color bar ranging from orange to red indicates targets behind linear reduction trajectory, while the range from yellow to green indicates targets ahead of that trajectory (see Figure 1 in the main article).

### 3.5 Determinants with multicollinearity

**Table 4: List of determinants excluded with their corresponding number (see Table 1) and category due to multicollinearity with other determinants. Abbreviations: SC12LB; scope 1 and scope 2 location-based, SC3; scope 3.**

#	Category	Determinant name
6	Target parameters	Remaining numbers of years until the target year
7	Target parameters	Baseline year
8	Target parameters	Baseline year emissions total
9	Target parameters	Start year
10	Target parameters	Last year
11	Target parameters	Last year emissions total

#	Category	Determinant name
12	Target parameters	Target year
13	Target parameters	Expected reduced emissions
14	Target parameters	SC12LB covered by target
19	Target parameters	Percentage scope covered by the target
34	Emissions reporting and other targets	SC3 emissions for at least one category
35	Emissions reporting and other targets	SC3 emissions for the category 1 Purchased goods and services
36	Emissions reporting and other targets	SC3 emissions for the category 2 Capital goods
37	Emissions reporting and other targets	SC3 emissions for the category 3 Fuel-and-energy-related activities not included in SC 1 or 2
38	Emissions reporting and other targets	SC3 emissions for the category 4 Upstream transportation and distribution
39	Emissions reporting and other targets	SC3 emissions for the category 5 Waste generated in operations
40	Emissions reporting and other targets	SC3 emissions for the category 6 Business travel
41	Emissions reporting and other targets	SC3 emissions for the category 7 Employee commuting
42	Emissions reporting and other targets	SC3 emissions for the category 8 Upstream leased assets
43	Emissions reporting and other targets	SC3 emissions for the category 9 Downstream transportation and distribution
44	Emissions reporting and other targets	SC3 emissions for the category 10 Processing of sold products
45	Emissions reporting and other targets	SC3 emissions for the category 11 Use of sold products
46	Emissions reporting and other targets	SC3 emissions for the category 12 End of life treatment of sold products
47	Emissions reporting and other targets	SC3 emissions for the category 13 Downstream leased assets
48	Emissions reporting and other targets	SC3 emissions for the category 14 Franchises
49	Emissions reporting and other targets	SC3 emissions for the category 15 Investments
50	Emissions reporting and other targets	SC3 emissions for the category 16 Other upstream
51	Emissions reporting and other targets	SC3 emissions for the category 17 Other downstream
69	Strategy	Influenced by climate-related risks or opportunities
74	Strategy	CO2 savings for implemented, commenced, or to be implemented initiatives
77	Strategy	Annual savings for voluntary initiatives
79	Strategy	Investment required for voluntary initiatives

#	Category	Determinant name
95	Sector	Apparel
107	Region	Australia and New Zealand

### 3.6 Stepwise backward OLS regression results

Table 5: Coefficient and p-values for the 19 key determinants selected with the backward stepwise OLS regression model. Abbreviations: SBTi = Science-Based Target Initiative; SC1 = scope 1; ETS = Emissions Trading System.

Determinant	Category	P-value	Coefficient
Percentage of the target achieved at the year the target was set	Target parameters	3.12E-63	0.195483
Number of years between the base year and the target year	Target parameters	1.87E-31	0.159601
Number of years between the base year and the year the target was set	Target parameters	1.91E-23	-0.13019
Northern Europe	Region	4.13E-08	0.064155
Absolute target (not intensity target)	Target parameters	2.8E-07	0.062537
Annualized target ambition	Target parameters	2.17E-06	-0.05184
Northern America	Region	0.000163	0.045635
Central America	Region	0.00111	-0.03451
Western Europe	Region	0.002137	0.035983
Financial impact estimate for climate opportunities	Risks and Opportunities	0.002793	0.033424
Board chair remuneration link to climate-related issues	Governance	0.002821	0.031936
Southern Europe	Region	0.008377	0.030111
More than one target	Emissions reporting and other targets	0.00859	0.031653
Approved by the SBTi	Target parameters	0.013247	0.026945
SC1 emissions breakdown by country	Emissions reporting and other targets	0.020036	-0.0259
Southern Africa	Region	0.022194	-0.02465
South-Eastern Asia	Region	0.025471	-0.02377
ETS or carbon taxes regulation	Carbon price	0.030225	-0.02447
South America	Region	0.040719	0.022141

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