

SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

SBTi MONITORING REPORT 2022

Looking back at 2022 and moving
forward to 2023 and beyond

PUBLISHED AUGUST 2023

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[View company progress data on the target progress dashboard](#)

IMPORTANT NOTICE

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SBTi has prepared the data and analysis in this 2022 SBTi Monitoring Report (the 'Report') in the form of texts, graphs and tables based on the data from various third party self-reported sources including information of commitments and targets publicly available in the SBTi target dashboard¹, as well data supplied by companies to the SBTi presented in an aggregated form, public CDP disclosure data from the 2022 climate change questionnaire, and other public sources. SBTi and SBTi Partners accept no liability for the reliability of any data provided by third parties.

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¹ The target dashboard is publicly available at <https://sciencebasedtargets.org/target-dashboard>



ABOUT THE SBTi

THE SCIENCE BASED TARGETS INITIATIVE (SBTi) DRIVES AMBITIOUS CORPORATE CLIMATE ACTION BY ENABLING BUSINESSES AND FINANCIAL INSTITUTIONS GLOBALLY TO SET SCIENCE-BASED GREENHOUSE GAS (GHG) EMISSIONS REDUCTION TARGETS.

It was formed as a collaboration between CDP, the United Nations Global Compact, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the We Mean Business Coalition. The SBTi's goal is to enable companies worldwide to do what climate science requires of the global economy: to halve emissions by 2030, and achieve net-zero before 2050.

We develop criteria and provide tools and guidance to enable businesses and financial institutions to set GHG emissions reduction targets in line with what science tells us is needed to keep global heating below 1.5°C. Once companies and financial institutions develop targets, we validate them against these criteria and pieces of guidance. If their targets are determined to be aligned with all SBTi requirements, then the company or financial institution is considered to have an SBTi-validated science-based target and can communicate as such.

OUR STORY

The SBTi was founded in 2014 with the ambition of encouraging 100 companies to commit to setting GHG emissions reduction targets in line with climate science. Since then, our impact and reach have grown significantly, and in 2022 we announced our intention to incorporate the SBTi as an entity in its own right, to enable us to further strengthen our governance and grow to accommodate the increasing demand for science-based targets. This process is underway and the first step – incorporating as a legal entity – took place at the end of June 2023.

OUR GOALS

The SBTi's theory of change is based on the diffusion of innovation theory. We work with the assumption that 20% of businesses in a particular territory or sector equals critical mass, so our goals are to reach this 20% threshold by 2025.

This means:

- \$20 trillion of the global economy covered by approved 1.5°C targets.
- 5GT of corporate emissions covered with science-based targets or commitments.
- 10,000 companies commit to or set science-based targets.

Our first priority is enabling maximum emissions reduction, so our sector-specific guidance focuses on the highest-emitting sectors and enabling sectors like maritime and aviation. The target related to coverage of the global economy will push science-based targets into large companies in all sectors, mainstreaming ambitious corporate climate action and creating scaled demand for the transformation of our energy, food, built environment, transport and mobility, and manufacturing sectors that a net-zero world requires. This mainstreaming approach is reinforced by our third target of 10,000 companies with science-based targets or commitments, and will be achieved in large part through the supply chains of large companies. We believe this three-pronged approach is a winning strategy to accelerate private sector emissions reduction at large scale in line with the Paris Agreement.

We work with the assumption that 20% of businesses in a particular territory or sector equals critical mass, so our goals are to reach this 20% threshold by 2025.



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

OUR GOVERNANCE

As the SBTi incorporates as an organization in its own right in 2023, our governance structure is evolving too, to incorporate a Board of Trustees led by a Chair, as well as the Executive Leadership Team which is responsible for the day-to-day running of the SBTi.

During 2022 and 2023 we also strengthened our technical governance, including with the appointment of a Technical Council. This is an independent deliberation and technical decision-making body that reviews, approves, and recommends adoption of SBTi standards, guidance and methods.

We also convene other groups of experts who give their time on a voluntary basis to help shape our work and bring in a wide range of skills, experience and approaches. These include the Technical Advisory Group and Scientific Advisory Group, together with project-specific Expert Advisory Groups which are convened to support specific pieces of work.

The SBTi holds regular public consultations about new guidance or tools or significant updates to existing resources. Any interested party is encouraged to participate in these consultations and details on how to take part are made available on the website and in the newsletter.

For more information about the evolution of our technical governance, watch the video below or visit our website for the latest information on [the SBTi's organizational governance](#) and [technical governance](#).

OUR FUNDING

The SBTi receives funding from several sources, including charitable trusts and foundations, validation fees from businesses and financial institutions, and project-specific funding. [You can find a list of all our funders on our website.](#)

[The full details of our fee structure are also available on our website.](#)

ABOUT THIS REPORT

This report outlines the key trends in companies and financial institutions setting science-based targets in 2022, together with the SBTi's major updates and publications during the year.

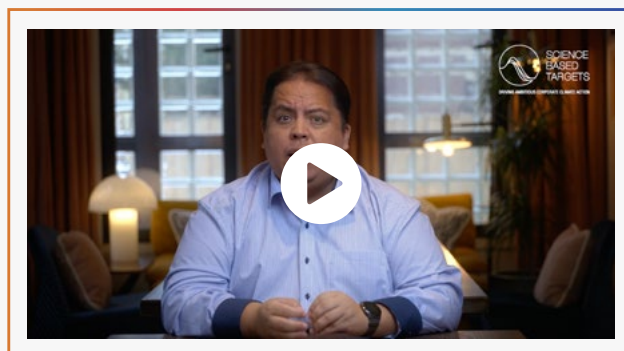
It uses a number of data sources as detailed in Appendix 1. In addition to detailed methodological information outlined in Appendices 2 and 3, clarifications regarding analyses and data sources are provided throughout via footnotes.

This report is accompanied by a [target progress dashboard](#) in both digital and downloadable spreadsheet formats, which provides detailed publicly available information on progress against science-based targets.

Data used in the report have a cut-off date of December 31 2022. For completeness, the report used information published after this date as late as June 2023, in sources including company sustainability or other corporate reports, company websites, and non-financial reports available at the time of review.

Similar documents and reports from previous years can be viewed on the [SBTi website](#).

The evolution of the SBTi's technical governance –
Alberto Carrillo Pineda, Chief Technical Officer



FOREWORD



DR LUIZ FERNANDO DO AMARAL

CHIEF EXECUTIVE OFFICER,
SCIENCE BASED TARGETS INITIATIVE

2022 was a year of pronounced effects from climate change. That far off theoretical future was suddenly very close to home – no matter where your home happened to be.

Floods submerged one third of the entire landmass of Pakistan, causing almost 2,000 deaths, affecting 33 million people and wreaking more than \$15bn of economic damage.² Heatwaves in Europe during its summer contributed to over 61,000 deaths, with temperatures reaching 47°C. It was one of the hottest years on record, with global mean temperatures up 1.15 degrees.³

And we know that things will only get worse. That our children, and our children's children, face a bleak future if we don't take immediate action to radically cut emissions.

It is this deep desire to protect the future generations that inspires me to do the work that I do. I believe that companies and financial institutions can make a difference, but that the window for action is closing fast.

I am hugely proud of the fact that more companies and financial institutions set science-based targets in 2022 than in the previous seven years combined. I am also pleased to see some companies exerting more pressure on their suppliers, creating a cascade

of science-based requirements across the global economy, which in turn is under more and more pressure to decarbonize.

2022 tested the resolve of organizations everywhere. Energy costs, inflation and supply chain snags shaped an extraordinarily challenging operating environment that created false compromises between climate action and bottom line protection. Of course the best way of protecting companies and people long-term remains robust action on climate.

But the operational challenges that year also showed once again the remarkable ingenuity of business and the enduring power of supply chains. It was some of the strongest evidence yet that economies can be rearranged on a macro scale through perseverance, hard work and innovation.

Our work here is only just beginning, but with science guiding the way, perhaps all of that hard work and innovation can go a little further in helping to avoid the very worst effects of climate change.

[Find out how to take the next step in your climate action journey here.](#)

² Brookings Institution, 'Responding to Pakistan floods'

³ Nature, 'Heat-related mortality in Europe during the summer of 2022'



EXECUTIVE SUMMARY

2022 saw significant growth in the number of companies and financial institutions setting science-based targets, despite an increasingly challenging global backdrop of more frequent and destructive extreme weather, conflict and economic and political instability.

1,097

The number of companies and financial institutions setting science-based targets continued to grow. In 2022, 1,097 companies had their targets validated, a number greater than the total of the previous seven years combined.

1.5°C

As of July 2022, the SBTi has only accepted new target submissions which are aligned with 1.5°C.

34%

By the end of 2022, companies with science-based targets or which had committed to set targets represented over a third (34%) of the global economy by market capitalization.



Japan had the highest number of companies setting targets in 2022, followed by the UK and US. Asia saw the greatest proportional growth in companies setting targets, with Africa and Latin America also experiencing growth.



For the first time, we have observed growth in every continent. Companies in Albania, Malta, Myanmar (Burma), Romania and Tunisia set science-based targets, while companies in Liechtenstein, Morocco, Sierra Leone, and Trinidad and Tobago committed to set science-based targets.

88%

88% of companies listed on France's CAC Index had set or committed to set targets by the end of 2022, compared to 70% on Germany's DAX Index, 69% of companies on the UK's FTSE, 43% on Italy's MIB, 42% of all S&P companies and 40% of companies listed on Japan's NIKKEI Index.

58%

There was significant growth in the number of small and medium-sized enterprises (SMEs) setting targets, with SMEs representing the majority (58%) of organizations setting targets in 2022.

130

130 companies set net-zero targets in 2022, making up 12% of all targets validated that year.

60%

60% of companies setting targets came from the service, manufacturing and infrastructure industries. The materials industry saw the highest growth in the number of companies setting targets, while the three lowest represented industries – power generation, biotech, healthcare and pharma, and hospitality – saw little change.

79%

79% of all companies with science-based targets were 1.5°C-aligned for scopes 1 and 2 by the end of 2022.

96%

96% (excluding SMEs and financial institutions) of all companies with science-based targets covered scope 3 by the end of 2022.

27%

The amount of company combined scope 1 and 2 emissions covered by science-based targets increased by 27% compared to 2021, representing 422 million tonnes of CO₂e.

76m

As of December 2022, total committed annual emissions reductions across all approved science-based targets was 76 million tonnes of CO₂e,⁴ equivalent to eliminating Switzerland's 2022 annual CO₂ emissions more than twice over.⁵

76%

More than three quarters (76%) of companies with science-based targets publicly reported progress against their targets in some form. More than half (53%) of companies fully reported progress on all their near-term and long-term targets in 2022, while around a quarter⁶ (23%) reported on at least one target. Half the financial institutions with science-based targets reported publicly on progress of their targets via CDP.



Companies with science-based targets' reported scope 1 and 2 emissions collectively exhibited a small (0.4%) increase between 2020 and 2021. It is important to note the context of 2020 in which global trade and therefore emissions were severely restricted due to the COVID-19 pandemic. As global emissions rebounded in 2021 to levels comparable with 2019, the scope 1 and 2 emissions of SBTi companies in 2021 stayed well below their 2019 levels.



⁴ This refers to targets that were approved as of December 2022, based on their intended scope 1 and scope 2 emissions reductions. This estimate of planned emissions reductions applies to the simplifying assumption that SBTi companies reduce their emissions in a linear manner. Note that this is not necessarily how companies achieve their targets.

⁵ Switzerland's annual emissions data source: Statista, 'Annual carbon dioxide emissions in Switzerland from 1970 to 2022'

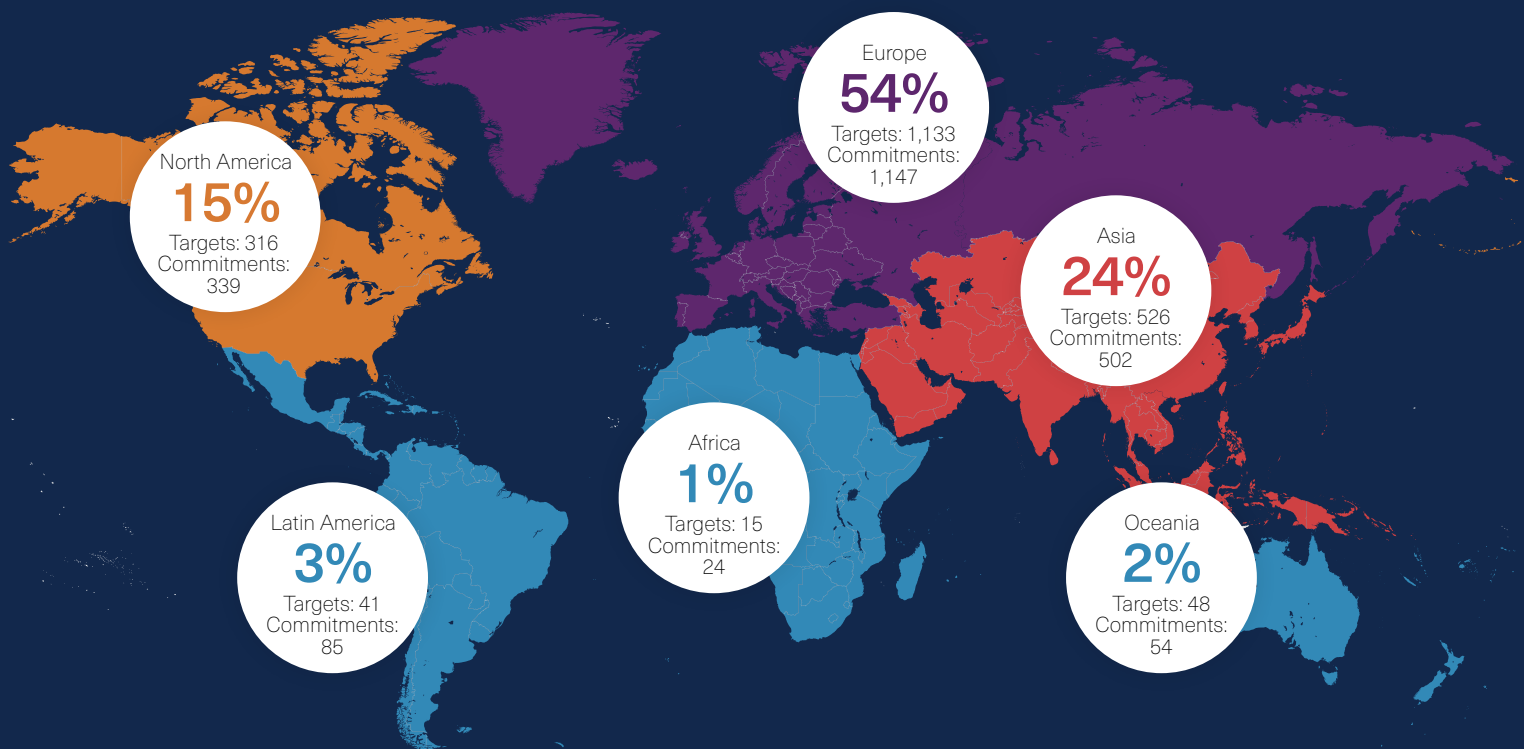
⁶ From the group of 1,185 companies, 66% (782) responded publicly to the CDP 2022 climate change questionnaire. For the remaining companies (403), including non-public CDP responses (101 cases), desk research of public available sources was performed. Refer to the appendix for more details on the methodology used for this analysis.

2022 IN NUMBERS

GEOGRAPHIC REACH OF SCIENCE-BASED TARGETS

Companies with approved targets and commitments by region as of December 2022.

■ <50% ■ 20-49% ■ 10-19% ■ 1-9%



Africa includes: Egypt, Kenya, Mauritius, Morocco, Nigeria, Sierra Leone, South Africa, Tunisia, Uganda. **Asia** includes: Bangladesh, Cambodia, China, India, Indonesia, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Myanmar (Burma), Pakistan, Philippines, Saudi Arabia, Singapore, South Korea, Sri Lanka, Taiwan, Province of China, Thailand, Turkey, United Arab Emirates, Vietnam. **Europe** includes: Albania, Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Jersey, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Russia, Spain, Sweden, Switzerland, United Kingdom. **Latin America** includes: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Guatemala, Mexico, Paraguay, Peru, Trinidad and Tobago, Uruguay. **North America** includes: Bermuda, Canada, United States of America (USA). **Oceania** includes: Australia, New Zealand.

CONTINUED GROWTH IN THE NUMBER OF COMPANIES SETTING TARGETS

Uptake of science-based targets is growing exponentially. More companies set science-based targets in 2022 than in the previous seven years combined. In 2022, 1,097 companies had their validated targets published,⁷ compared with a total of 1,082 in the previous seven years. With 587 targets set in 2021, there was a year-on-year increase of 87% in the number of companies with targets validated.

The number of companies committing to set science-based targets also continued to grow. 1,287 companies committed to set a science-based target within 24 months in line with the SBTi's latest Commitment Compliance Policy.

By the end of 2022, the cumulative total number of companies with science-based targets validated by the SBTi since its inception was 2,079,⁸ with a further 2,151 companies with commitments to set targets.⁹

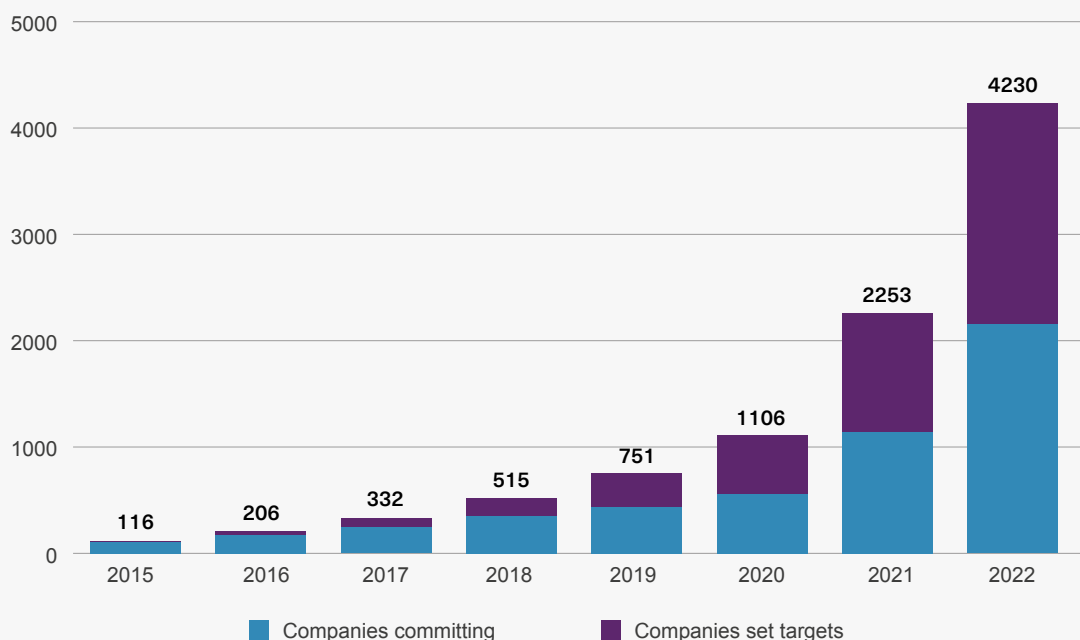
2,079

number of companies with science-based targets validated by the SBTi

2,151

number of companies with commitments to set targets

Annual cumulative number of companies with approved targets and commitments, 2015–2022^{10 11}



⁷ Including companies publishing targets for the first time and companies updating their existing targets.

⁸ Companies that had both committed and set a target as of December 3 2022 are only counted as a company setting a target, including the cases when a company has an active, more ambitious commitment (e.g. near-term target and net-zero commitment). Companies with removed targets are not included in the count.

⁹ The count of companies with commitments does not include those with expired commitments (e.g. committed, but company did not submit targets within the commitment time frame and/or did not reach successful validation of their targets according to their commitment) or companies which withdrew their commitments prior to the implementation of the SBTi's new commitment compliance policy. The SBTi's commitment compliance policy is available at <https://sciencebasedtargets.org/resources/files/Commitment-Compliance-Policy.pdf>

¹⁰ This graph shows the total number of companies with published validated targets and commitments as a snapshot at the end of each year from 2015 to 2022. This differs from the figure from the 2021 report, where the target and commitment years reflected the date of the latest company updates (e.g. if a company resubmitted a target, the graph showed the resubmission year).

¹¹ The graph includes expired or opted-out commitments only in years in which those commitments were active.

PROPORTION OF GLOBAL ECONOMY COVERED BY SCIENCE-BASED TARGETS INCREASED

The proportion of the global economy represented by companies that have set or committed to set science-based targets increased by six percentage points between 2021 and 2022. By the end of 2022, companies with science-based targets or commitments represented 34% of the global economy by market capitalization, compared with 28% by the end of the previous year. Although the proportion of the global economy committed to science-based targets increased, overall stock market values fell (December 2021 compared with December 2022), resulting in a lower absolute value of market capitalization covered by science-based targets.^{12 13 14}

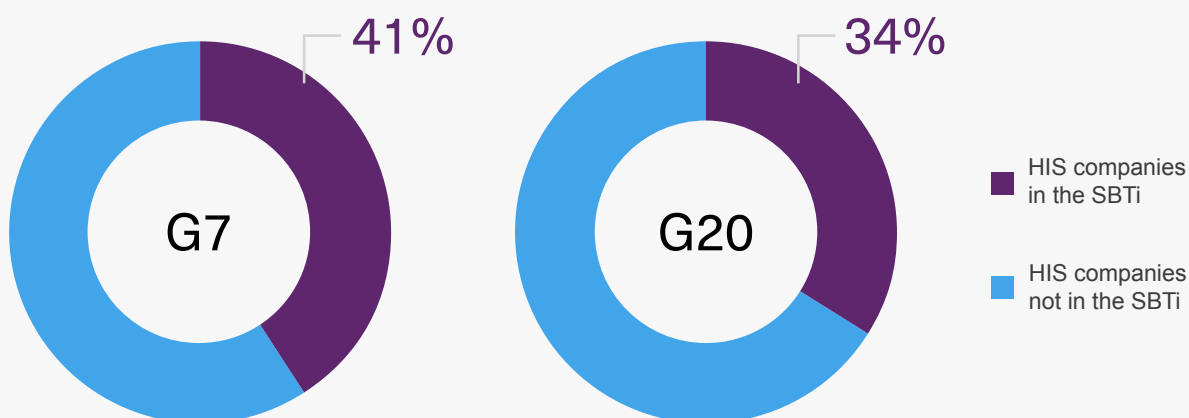
87%

Year-on-year increase in targets validated since 2021

JAPAN, UK AND US HAVE THE MOST COMPANIES SETTING TARGETS

Progress in adopting science-based targets was particularly strong in developed economies. Four out of every ten of the most impactful companies,¹⁵ in terms of carbon emissions and economic clout, in G7 countries, and three out of every ten in G20 countries, are committed to set or have set science-based targets.¹⁶ It is important to acknowledge that the country designation refers to the location of a company's headquarters and does not necessarily correlate with the location of the majority of its operations or supply chain.

High Impact Sample penetration of G7 and G20 countries



¹² Market capitalization data were retrieved with the date of December 30 2022, and covers \$37.3 trillion. Data could be retrieved from 1,685 publicly available companies, corresponding to 40% out of 4,230 companies listed in the SBTi Target Dashboard (including SMEs). See Appendix 1 for source reference.

¹³ Market capitalization data were compared against data from SBTi's 2021 report and covers \$38 trillion from 1,198 publicly available companies that were part of the SBTi in December 2021. Estimated global market capitalization equals to \$109.6 trillion as of December 30 2022 and \$134.2 as of December 31 2021. See Appendix 1 for source reference.

¹⁴ Note that in SBTi's 2021 report, global market capitalization was estimated based on the MSCI ACWI index.

¹⁵ 'Most impactful' refers to a High Impact Sample curated by CDP that considers companies as 'high-impact' based on a combination of greenhouse gas (GHG) emissions and market capitalization, using the MSCI ACWI Index as a starting point. Refer to the Context & Methodology of the 2022-23 CDP Science-Based Targets Campaign Sample for a description of the methodology of the CDP Climate High Impact Sample. Available at: https://cdn.cdp.net/cdp-production/comfy/cms/files/000/006/556/original/The_2022-23_CDP_SBT_Campaign_Sample_v4.pdf

¹⁶ G20 composition includes all countries within the European Union.

Japan had the highest number of companies setting targets in 2022 (201), followed by the United Kingdom (181) and the United States (109).

Within the G20 there was also strong growth in the numbers of companies with validated targets based in the Republic of Korea, Brazil, China, and South Africa.

Five countries – Albania, Malta, Myanmar, Romania and Tunisia – had companies get science-based targets validated for the first time in 2022. In addition, companies from another five countries committed to set science-based targets for the first time: Argentina, Liechtenstein, Morocco, Sierra Leone, and the first Caribbean nation with a committed company, Trinidad and Tobago.

By the end of 2022, there were companies with validated science-based targets in 61 countries, with companies in a further 16 countries having committed to set targets.¹⁷

SPOTLIGHT ON ASIA

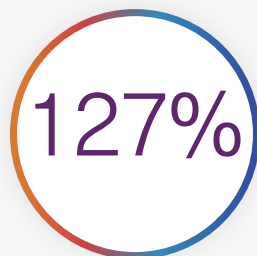
During 2022, the continent which saw the greatest proportional growth in the actual number of science-based targets was Asia. 317 companies headquartered in Asia set a science-based target in 2022. This represented a 127% increase in the number of Asian companies setting a science-based target compared with 2021. In all, 24% of all companies with targets and commitments are from Asia (2015-2022).

As mentioned above, Japan had the highest number of companies setting targets worldwide (201), representing 127% growth in companies with targets validated.

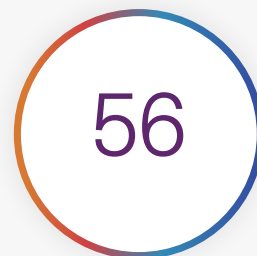
China's growth curve was the steepest with a 194% increase in the number of companies with validated targets. As the source of many of the world's supply chains, growth in China can have a powerful effect on the scope 3 emissions of companies all over the world.



Asia saw the biggest growth in the number of science-based targets, with 317 companies in 2022.



There was a 127% increase in the number of Asian companies setting a science-based target.



Companies in Africa and Latin America with science-based targets, more than double 2021's total.

SPOTLIGHT ON THE GLOBAL SOUTH

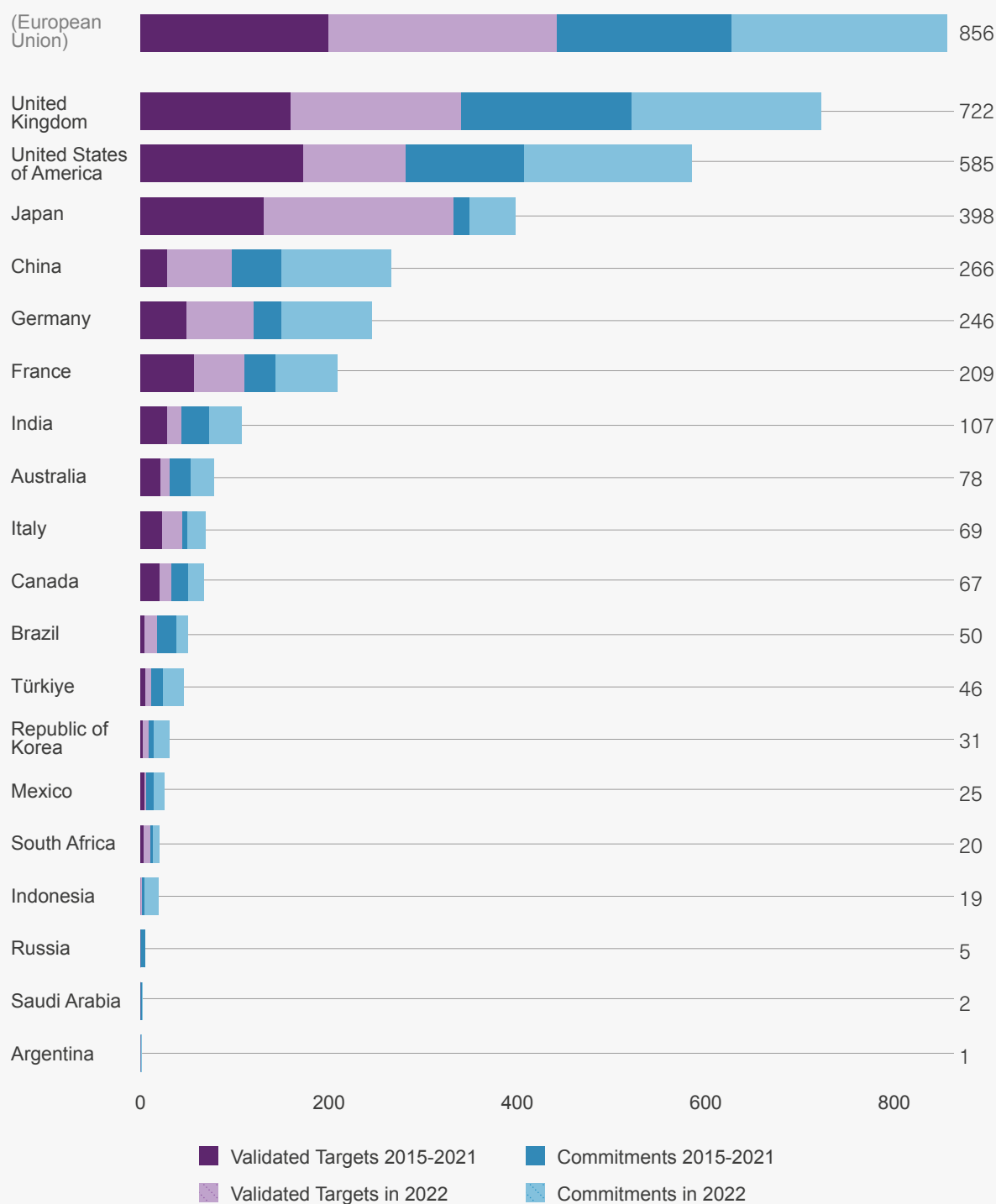
There was also strong growth in the number of companies in Africa and Latin America setting science-based targets. 11 companies in Africa and 24 companies in Latin America set targets in 2022. By the end of the year, the total number of companies in Africa and Latin America with science-based targets was, at 56, more than double that at the end of 2021.

Despite this strong growth in the Global South, the majority of companies with science-based targets continued to be found in countries with more developed economies. By the end of 2022, over 90% of all companies which had set or committed to set a science-based target were based in G20 countries, and over half of all companies which had set or committed to set a science-based target were based in Europe.

¹⁷ Countries were defined using the United Nations Global Compact country classification: <https://unglobalcompact.org/what-is-gc/participants>

G20 BREAKDOWN IN VALIDATED TARGETS AND COMMITMENTS¹⁸

Country view of G20-based companies with approved targets and commitments as of December 2022



¹⁸ The European Union (EU), as a G20 member, is represented in this chart, with Germany, France and Italy excluded from the count of validated targets and commitments in the EU.

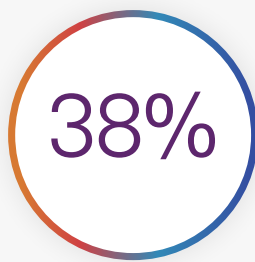
UPTAKE AMONG STOCK MARKET LISTED COMPANIES CONTINUES TO GROW

From a market perspective, the penetration of science-based targets was analyzed from leading equity indices, also referred to as stock market indices, for the G7 economies.¹⁹

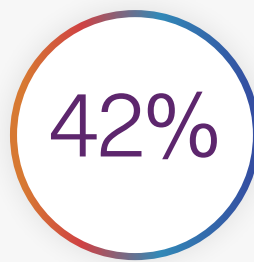
By the end of 2022, 112 of the Fortune Global 500 companies had set science-based targets.²⁰ This brought the total number of Fortune Global 500 companies with science-based targets or commitments to 188 or 38% of all Fortune Global 500 companies.

In the US, 130 S&P 500 Index companies had set science-based targets by the end of 2022 and 82 committed to set targets, bringing the SBTi's total coverage of S&P 500 companies to 42%.

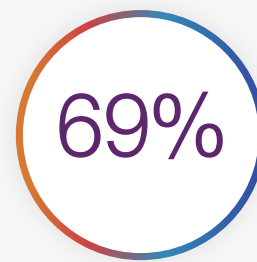
70 companies listed on Japan's NIKKEI Index had set science-based targets by the end of 2022 and 20 committed to set targets. This brought the SBTi's total coverage of NIKKEI companies to 40%.



188 or 38% of all Fortune Global 500 companies have science-based targets or commitments.



In the US, 130 – or 42% – S&P 500 Index companies had set science-based targets by the end of 2022 and 82 committed to set targets.



By the end of 2022, 69% of FTSE 100 companies had either set or committed to set science-based targets.

45 UK FTSE 100 companies had set science-based targets by the end of 2022, with a further 24 having committed to set targets. This means that by the end of 2022, 69% of FTSE 100 companies had either set or committed to set science-based targets.

26 companies listed on France's CAC index, 18 companies listed on Germany's DAX index, and 11 companies listed on Italy's FTSE MIB had set science-based targets by the end of 2022. Coupled with commitments, this brought the SBTi's total coverage of CAC Index companies to 88%, DAX Index companies to 70%, and FTSE MIB Index companies to 43%.

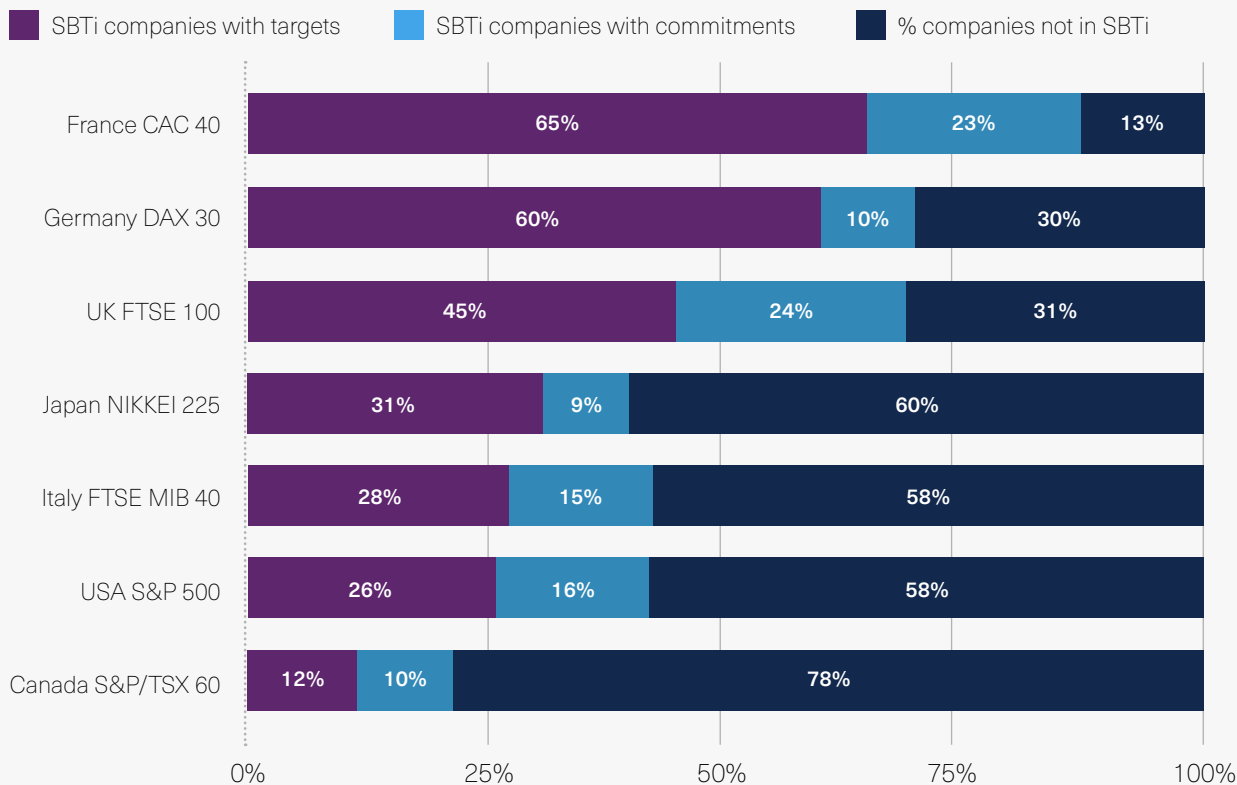
In Canada, 12% of the S&P/TSX 60 had set science-based targets by the end of 2022 and six committed to set targets, bringing the SBTi's total coverage of S&P/TSX 60 companies to 22%.

¹⁹ Stock market indices are composed of stocks of the most significant companies listed on a country's largest exchange and serve as benchmarks to understand market trends and performance.

²⁰ Fortune Global 500 composition as of November 2022. <https://fortune.com/ranking/global500/>

PENETRATION OF THE SBTi IN LEADING EQUITY INDICES OF THE G7²¹

G7 indices vs SBTi companies



GREATEST GROWTH FROM SMEs

Of the 1,097 companies with targets validated in 2022, 638 were classed as small or medium-sized enterprises (SMEs).²² This total was greater than the cumulative total of SMEs in 2021 and 2020, the first year in which we introduced an SME route for target validation.²³

2022 saw the first 52 SMEs set net-zero targets, while 88% of SME targets set that year were 1.5°C-aligned.²⁴

38 financial institutions set science-based targets in 2022, compared to nine in 2021. This brought the total number of financial institutions with science-based targets to 47. The SBTi is working to encourage greater uptake of science-based targets by financial institutions because of the exponential potential they have to drive down GHG emissions across entire sectors and economies. [Visit our website for the latest information.](#)

²¹ Equity index composition as of December 31 2022. See Appendix 1 for source reference.

²² For the SBTi, an SME is defined as a non-subsiary, independent company with fewer than 500 employees. This does not include financial institutions or oil and gas companies.

²³ The number of SMEs with validated targets was 30 in 2020 and 178 in 2021.

²⁴ More information about the SBTi's target validation route for SMEs can be found here: <https://sciencebasedtargets.org/small-and-medium-enterprise-sme-target-setting-process>

STEADY GROWTH OF NET-ZERO TARGETS

2022 was the first full year in which companies could have their targets validated against the SBTi's [Corporate Net-Zero Standard](#), which was introduced in October 2021 as the SBTi's most ambitious level of decarbonization, requiring companies to set both near and long-term science-based targets to cut all possible emissions by 2050. A total of 130 organizations set net-zero targets in 2022, of which 78, or 60%, were classed as companies and the remaining 40% as SMEs. A further 889 companies committed to submit net-zero targets. Net-zero targets represented 12% of all science-based targets set in 2022.



130

A total of 130 organizations set net-zero targets in 2022, of which 78, or 60%, were classed as companies and the remaining 40% as SMEs.



12%

Net-zero targets represented 12% of all science-based targets set in 2022.



112

The infrastructure industry overtook food, beverage and agriculture to become the third-largest industry for validated targets, with 112 companies.

SERVICE, MANUFACTURING AND INFRASTRUCTURE INDUSTRIES ACCOUNT FOR 60% OF TARGETS²⁵

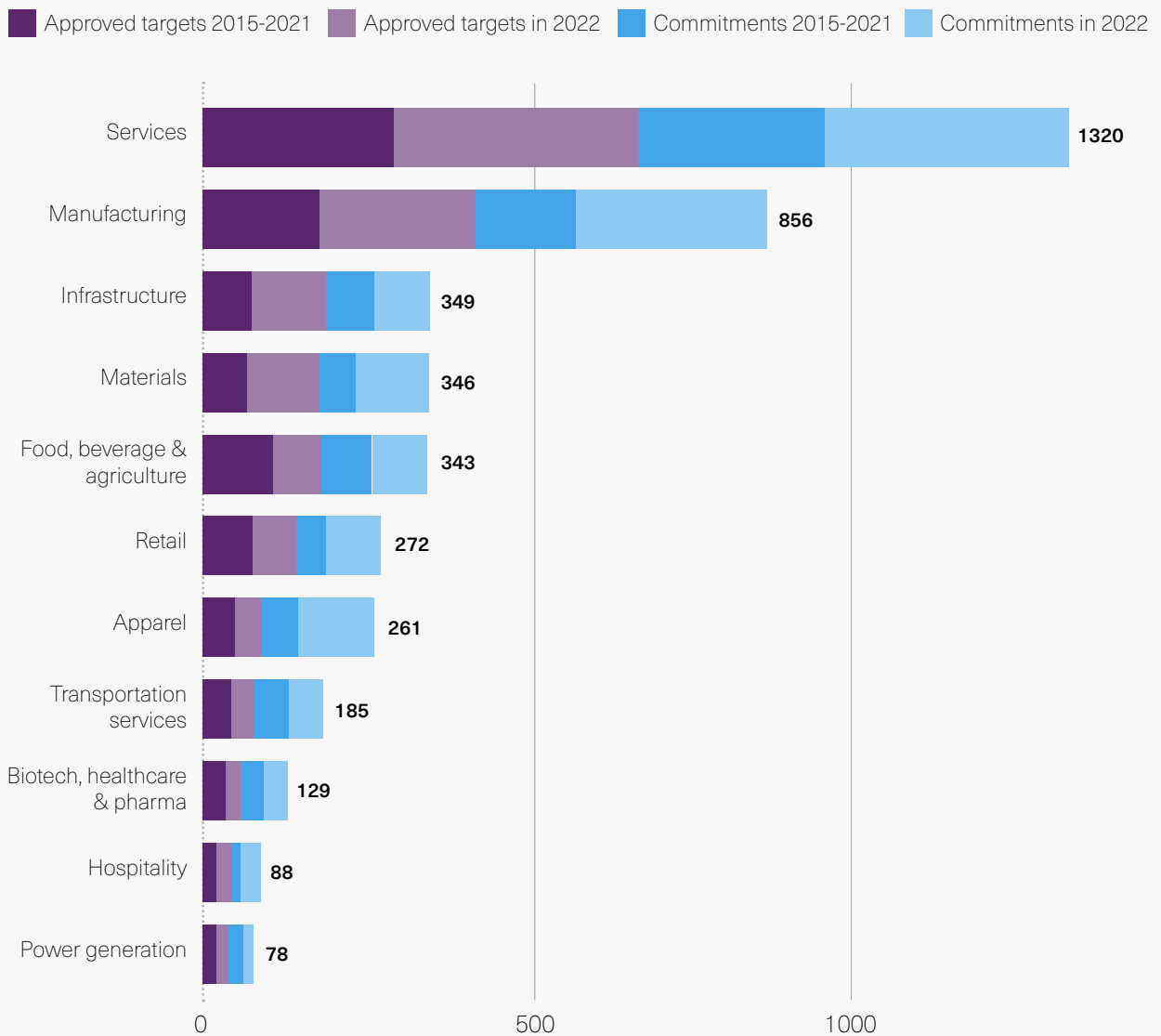
As in 2021, the services and manufacturing industries saw the highest number of companies setting targets in 2022. With 373 and 239 companies respectively, these industries accounted for over half of validated targets. However, in 2022, the infrastructure industry overtook food, beverage and agriculture to become the third-largest industry for validated targets, with 112 companies.

The industry with the highest growth rate was materials, with companies setting 109 targets in 2022 compared with 42 in 2021, representing a 160% increase. 33 companies in the transportation service industry set targets, representing an increase of 65% on the number in 2021.

There was limited change in the number of targets set in the three sectors with the lowest uptake of science-based targets. The power generation industry was responsible for 17 targets, the biotech, healthcare and pharma sector was responsible for 23 targets and the hospitality sector responsible for 16 targets validated in 2022. Considering the urgent need to decarbonize power production globally, the power generation industry's position as the sector with the lowest number of targets set during 2022 is concerning.

²⁵ Industries were defined by assigning each company sector as reported to the SBTi under an industry category from the CDP's Activity Classification System (CDP-ACS) https://cdn.cdp.net/cdp-production/cms/guidance_docs/pdfs/000/001/540/original/CDP-ACS-full-list-of-classifications.pdf

TOTAL NUMBER OF COMPANIES BY INDUSTRY WITH APPROVED TARGETS AND COMMITMENTS AS OF DECEMBER 2022²⁶

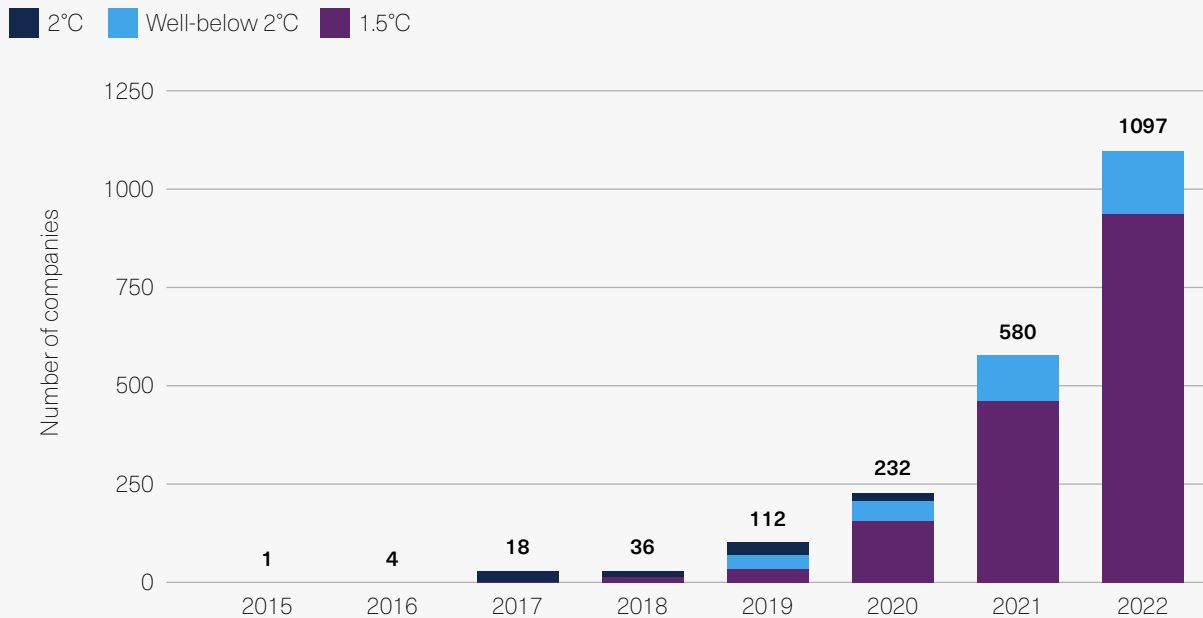


ALMOST 4 IN 5 SBTI COMPANIES HAVE 1.5°C-ALIGNED TARGETS

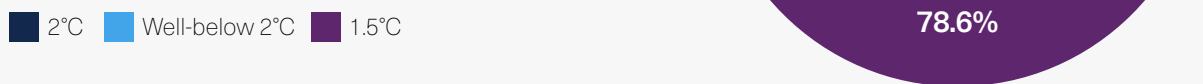
As of July 2022, the SBTi has only accepted new target submissions which are aligned with 1.5°C. Consequently, the proportion of all companies with science-based targets which are 1.5°C aligned had reached 79% – 1,635 – by the end of 2022, compared to 68%, or 734, at the end of 2021. In 2022 alone, 945 companies set 1.5°C-aligned targets.

²⁶ Industries were defined by assigning each company sector as reported to the SBTi under an industry category from the CDP's Activity Classification System (CDP-ACS) https://cdn.cdp.net/cdp-production/cms/guidance_docs/pdfs/000/001/540/original/CDP-ACS-full-list-of-classifications.pdf

TEMPERATURE ALIGNMENT OF SCOPE 1 AND SCOPE 2 TARGETS VALIDATED (2015-2022)²⁷



SCOPE 1 AND SCOPE 2 TEMPERATURE CLASSIFICATION OF COMPANIES, FINANCIAL INSTITUTIONS AND SMEs WITH APPROVED TARGETS, AS OF DECEMBER 2022



²⁷ The chart shows overall company temperature alignment of companies' most recent scope 1 and 2 validated targets (i.e. target information after companies have voluntarily updated the ambition of or resubmitted their targets). At the time of writing, scope 3 targets do not have a temperature classification and are therefore not included. The target year reflects the date of the target update.

ALMOST EVERY SBTI COMPANY WITH TARGET COVERS SCOPE 3

406 companies that set targets in 2022 included scope 3 targets. This brought the total number of all companies with science-based targets covering scope 3 (excluding SMEs and financial institutions) to 1,134 or 96% by the end of 2022.

Of companies which set scope 3 targets in 2022, 63 set supplier engagement targets to incentivize suppliers in their value chains to set their own science-based targets. This brought the total number of companies with supplier and customer engagement targets to 189, or 16% of total companies with science-based targets by the end of 2022.

96%

Companies with science-based targets covering scope 3

EMISSIONS COVERAGE OF TARGETS CONTINUES TO INCREASE

Combined scope 1 and 2 emissions of companies with science-based targets in 2022 represented 422 million tonnes of CO₂e – a 27% increase compared to 2021, and an amount greater than the United Kingdom's GHG emissions for 2022.²⁸ In total, the amount of scope 1 and 2 emissions covered by science-based targets increased nearly 15 times between 2015 and 2022, from 145 million to two billion tonnes of CO₂e. This total is equivalent to Japan and Germany's total combined GHG emissions for 2022.²⁹

Companies headquartered in the top three countries by emissions coverage, the United States, Germany and France, were together responsible for 47% of total scope 1 and 2 emissions coverage by science-based targets between 2015 and 2022.³⁰

27%

Year-on-year increase in scope 1 and 2 emissions covered by companies with science-based targets

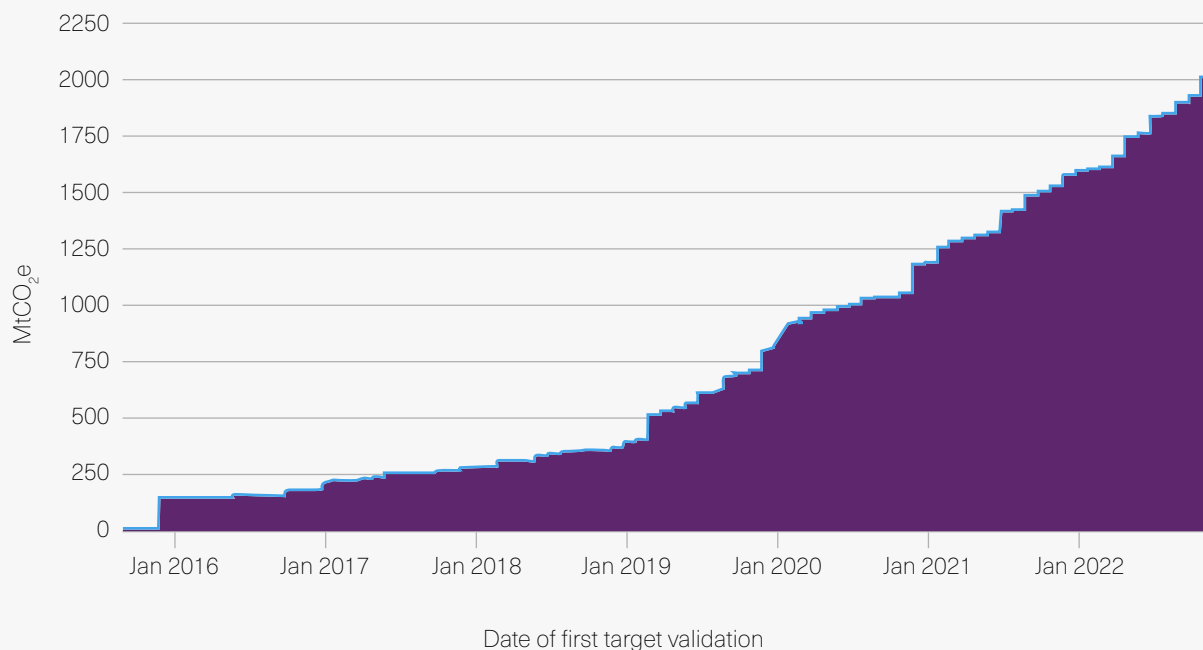


28 United Kingdom's emissions data source: [Government of the United Kingdom, '2022 UK greenhouse gas emissions, provisional figures'](#)

29 Japan's emissions data source: ['Japan's greenhouse gas emissions rose 2% in FY21/22 as economy recovered'](#). Germany's emissions data source: ['German Environment Agency, UBA forecast: 2022 greenhouse gas emissions down by 1.9 percent'](#)

30 Total scope 1 and 2 emissions coverage by science-based targets from the United States, Germany and France between 2015 and 2022 is 946 million tonnes of CO₂e.

COMPANIES WITH TARGETS SCOPE 1 AND 2 EMISSIONS COVERAGE (MtCO₂e) OVER TIME³¹



As of December 2022, the total committed annual emissions reductions across all approved science-based targets was 76 million tonnes of CO₂e³², equivalent to eliminating Switzerland's 2022 annual CO₂ emissions more than twice over.³³

65% of these companies with 1.5°C-classified targets said they intended to cut scope 1 and 2 emissions at a higher rate than was required, meaning their linear annual emissions reduction rate exceeds the SBTi's 4.2% minimum threshold for targets aligned with limiting warming to 1.5°C above pre-industrial levels.³⁴

65%

companies with 1.5°C-classified targets intended to cut scope 1 and 2 emissions at a higher rate than required

³¹ This graph shows the scope 1 and scope 2 emissions covered by 1,279 companies with approved targets as of December 2022. It excludes companies with targets approved through the SBTi's streamlined SME route. For this analysis, the most recent emissions data submitted to the SBTi corresponding to the latest available inventory year was used for each company. Each company is shown on the graph in the order of the date when its targets were first validated by the SBTi. Figures may differ from the 2021 progress report due to resubmissions from large emitters over the course of 2022 resulting in updated emissions figures. All parent/group companies must include all subsidiaries and entities that fall under the chosen consolidation approach under the SBTi criteria; however, organizations are allowed to exclude up to 5% of emissions including small subsidiaries as relevant. To avoid double-counting, selected subsidiaries with targets validated in 2022 were excluded from the sum of scope 1+2 emissions as their parent companies had already set targets with SBTi.

³² This refers to targets that were approved as of December 2022, based on their intended scope 1 and scope 2 emissions reductions. This estimate of planned emissions reductions applies the simplifying assumption that SBTi companies reduce their emissions in a linear manner. Note that this is not necessarily how companies achieve their targets.

³³ Switzerland's annual emissions data source: Statistica, 'Annual carbon dioxide emissions in Switzerland from 1970 to 2022'

³⁴ *ibid*

ORGANIZATIONS REPORTING PROGRESS AGAINST TARGETS

According to the UNFCCC, progress reporting is integral to the credibility of companies' emissions reduction targets. It helps to build trust, showcases successful strategies and encourages other players to make ambitious commitments.³⁵ To support accountability of science-based targets, the SBTi requires all organizations which set targets to publicly report their company-wide GHG emissions inventories and progress against published targets annually.³⁶

For the third year, the SBTi carried out an annual review and disclosure exercise of publicly available self-disclosed data on progress against approved science-based targets. The results of this review were incorporated into an [online progress dashboard](#)³⁷ in both digital and downloadable spreadsheet formats, allowing stakeholders to easily explore the progress data of companies with science-based targets.³⁸

76%

Companies with science-based targets publicly reported progress against their targets

MORE ACTION NEEDED ON REPORTING

More than three quarters (76%) of companies with science-based targets publicly reported progress against their targets in some form, compared to 72% in 2021 and 87% in 2020. For 24% of all companies, no public information on progress against their science-based targets was found or was reported in ways that were uncomparable, or lacked information and contextual data.

In 2022, of the 1,186 companies with science-based targets, more than half (53%) fully reported progress on all their near-term and long-term targets.³⁹ Around one in four (23%) reported on at least one target, but information for their other targets was reported in ways that were uncomparable or lacked information and contextual data, or could not be publicly found.⁴⁰ More information on the reporting of progress on science-based targets can be found in Appendix 3.

53%

Companies fully reported progress on all their near-term and long-term targets

35 UNFCCC, 'Integrity matters: Net Zero commitments by businesses, financial institutions, cities and regions', 2023

36 Companies are recommended to disclose this information through standardized comparable platforms such as CDP, or sustainability reports aligning with the recommendations of recognized reporting frameworks.

37 Further information about completeness, accuracy and use of this data is provided in the [Important Notice](#) above and disclaimer in appendix 3.

38 The assessment undertaken for this report includes the review of publicly available target information disclosed to the CDP 2022 climate change questionnaire and desk research on publicly available sources. Refer to Appendix 3 for more details on the composition of organizations included in the analysis and the methodology followed.

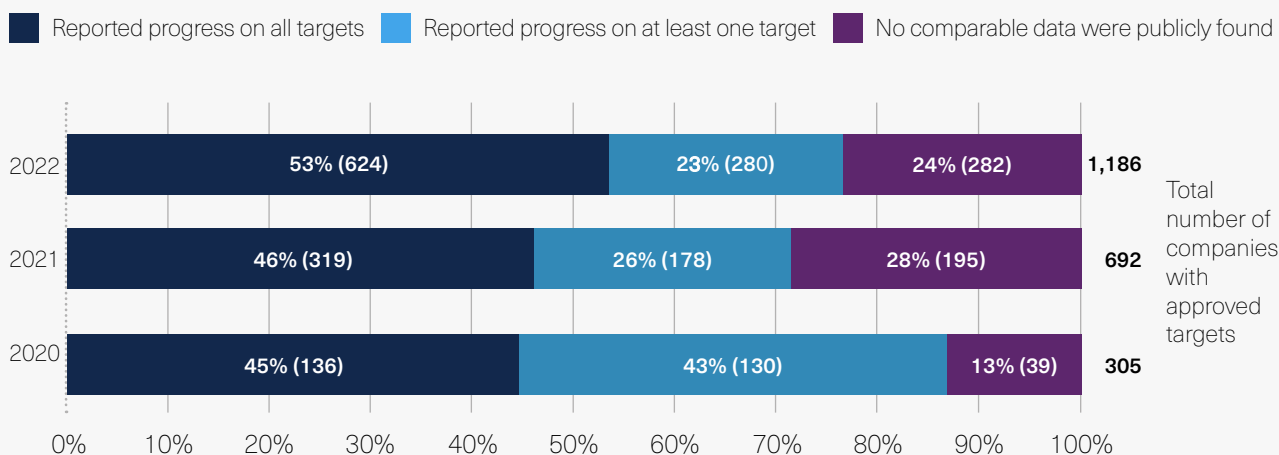
39 From the group of 1,186 companies, 66% (782) responded publicly to the CDP 2022 climate change questionnaire. For the remaining companies (404), including non-public CDP responses (102 cases), desk research of publicly available sources was performed.

40 Appendix 3 describes the criteria used to determine comparable reporting.



REPORTING GAP AMONG COMPANIES WITH SCIENCE-BASED TARGETS

Reporting status of companies with approved targets in 2022 (as of December 31 2021) vs 2021 (as of July 31 2021) vs 2020 (as of November 30 2020). Numbers may not add up to 100% due to rounding.^{41 42}



Out of the 84 companies which had set net-zero targets using the SBTi's Corporate Net-Zero Standard by December 2022, 68% (57) were found to be reporting information on their net-zero targets publicly to CDP in 2022, including plans to neutralize any unabated emissions and implement actions to mitigate emissions beyond their value chain. More detail on the disclosed data is presented in the [progress dashboard](#).

FINANCIAL INSTITUTIONS REPORTING ON PORTFOLIO AND NON-PORTFOLIO TARGETS

This report includes a review of financial institutions' near-term non-portfolio targets (for own operations and scope 3, categories 1-14) and near-term portfolio targets (investment and lending portfolios) that have been validated since October 2021. Out of 47 financial institutions with science-based targets by the end of 2022, 51% (24) reported publicly on progress of their targets via CDP.⁴³ Further research will be needed to provide more context to financial institutions' reporting of target progress. For example, additional information for non-portfolio targets was found for ten financial institutions in publicly available sources, which suggests that financial institutions may report target progress through different platforms such as their own reports that are aligned with Task Force on Climate-related Financial Disclosures (TCFD) recommendations.

51%

51% of financial institutions with science-based targets reported publicly on progress of their targets via CDP in 2022

⁴¹ Figures in this graph refer to near-term and long-term targets of companies (excluding SMEs and financial institutions). Figures for 2022 are based on the latest publicly available information found on target progress at the time of the analysis. Figures for the years 2021 and 2020 were retrieved from the SBTi Progress Report 2021 and 2020 respectively.

⁴² Note that in the analysis conducted for the 2021 Progress Report, 'partial matched targets' were presented under the classification 'no matched targets'. Refer to Appendix 3 for more details on the methodology used for this analysis.

⁴³ The data available from financial institutions for the purposes of this report equates to progress information of 60 non-portfolio targets and 52 portfolio targets, out of the 269 targets from financial institutions included in this review.

INCREASE IN SMES

The number of SMEs with science-based targets increased from 142 on July 30 2021 to 845 in December 2022. Out of the 845 SMEs which were part of this analysis, target performance information was found for only 6% (51) in the 2022 CDP Climate change questionnaire. For this report, the progress of SMEs using the streamlined SME route was not reviewed as part of the desk research.

REPORTING RATES IMPROVED BUT MORE CONSISTENT AND COMPREHENSIVE REPORTING IS NEEDED

2022 saw a small but promising improvement in progress reporting, considering the large number of organizations that set new science-based targets or updated their targets during the year, and taking into account cases where progress disclosure was not expected to be found.⁴⁴ Nonetheless, an enduring gap remained in climate reporting among companies with science-based targets, both in terms of disclosure and comprehensiveness of reporting against their published targets, as only half of companies reported fully in comparable ways.

To bridge this gap, the SBTi plans to strengthen reporting requirements, supported by guidance on disclosure that will enable stakeholders to assess progress against targets and performance in the reporting year. As a first step, the [SBTi's corporate manual version 2.1](#) (April 2023) included reporting guidance that lays out best practice in reporting and aims to provide specific and actionable recommendations for annual reporting on target progress and emissions.

In January 2023, the [SBTi Financial Sector and TCFD Reporting Guidance](#) was published to provide financial institutions with a framework for assessing, disclosing and managing the climate risks to which they are exposed, and maximizing opportunities for portfolio companies to cut emissions and reduce their climate impact. The guidance sets a path for the financial sector to effectively collect and manage a variety of data points and address data gaps, while creating internal structures that enable the implementation of science-based targets.

845

The number of SMEs with science-based targets increased from 142 on July 30 2021 to 845 in December 2022

6%

SMEs reported progress to CDP



⁴⁴ For example, targets which were validated after the CDP disclosure deadline or would not have meaningful progress to be reported would not be included.

TREND INDICATES SLOWER RATE OF EMISSIONS REDUCTION – A POST-COVID PHENOMENON?

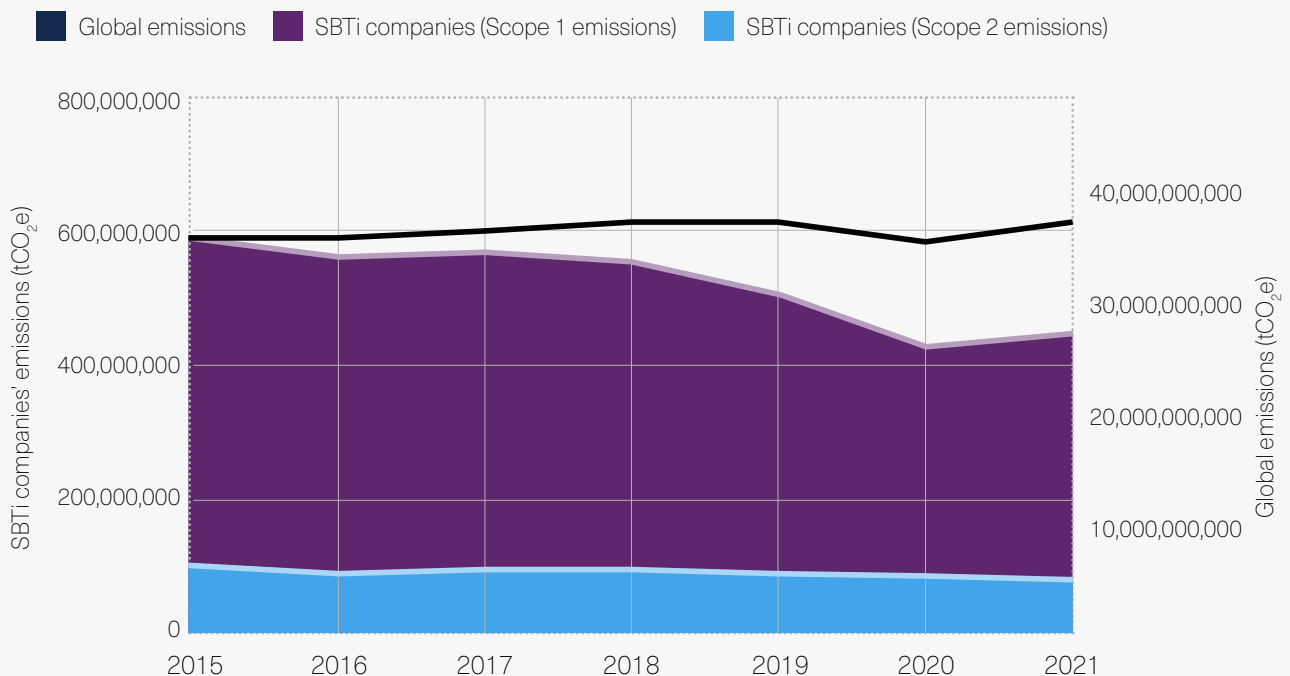
Among companies analyzed for this report, companies with science-based targets reduced their scope 1 and 2 emissions by 25% by 2021⁴⁵ against a 2015 base year, compared with a reduction of 14% by 2019 against a 2015 base year.

While companies with science-based targets reported that scope 1 and 2 emissions remained below 2019 levels in 2022, collectively they exhibited a small increase (0.4%) in 2021 emissions compared with 2020. While there is currently insufficient evidence to determine whether this small increase in emissions is an anomaly or the start of a trend, it could be explained by companies increasing their outputs and activity as part of the wider recovery of the global economy following the Covid-19 pandemic.

Notably, the 2021 emissions of companies with science-based targets remained well below 2019 levels, in contrast with global emissions which rebounded in 2021 to within 1% of 2019 levels.⁴⁶ Companies with science-based targets showed a steeper drop in emissions between 2019 and 2020 than the economy overall, and a smaller percentage emissions increase between 2020 and 2021. This could suggest that companies with science-based targets are more likely to continue emissions reductions in future years.

GROSS SCOPE 1 AND 2 EMISSIONS OF COMPANIES WITH APPROVED TARGETS COMPARED TO GLOBAL EMISSIONS (2015-2021)⁴⁷

Comparison of SBTi companies' emissions to global emissions (tCO₂e)



⁴⁵ Based on information self-reported by companies to CDP. The GHG inventories for 2022 had not been disclosed to CDP at the time of writing of this report. See Appendix 2 for further details.

⁴⁶ Nature Climate Change, 'Emissions rebound from the COVID-19 pandemic', March 2022, www.nature.com/articles/s41558-022-01332-6

⁴⁷ This time series represents scope 1 emissions and scope 2 emissions data of 123 companies between 2015 and 2020, based on availability of reliable emissions data for all years, so in many cases reflects emissions data before a company joined the SBTi. For details on the methodological approach, refer to Appendix 2.

TYPICAL COMPANY IN SAMPLE REDUCED EMISSIONS AT A FASTER RATE THAN REQUIRED^{48 49}

Analysis of scope 1 and 2 emissions reductions of companies since setting science-based targets was carried out for 205 companies. Of these, the typical company reduced their emissions at a linear annual rate of 5.9% between the year of setting targets and 2021. The minimum annual reduction required for meeting 1.5°C-aligned science-based targets is 4.2%. Therefore, the typical company in the sample was reducing scope 1 and 2 emission at a faster rate than required.

5.9%

The typical company reduced their emissions at a linear annual rate of 5.9% between the year of setting targets and 2021



Photo by David Cristian on Unsplash

⁴⁸ A typical SBTi-approved company's emissions reduction corresponds to the median linear annual reduction in scope 1 and 2 (market-based) emissions. Only companies for whom scope 1 and market-based scope 2 emissions figures for both 2021 and the year they set targets could be obtained from CDP were included in this analysis. As a result, 205 of the 2,079 total companies with approved targets between January 1 2015 and December 31 2022 were included in this group. Note that over three-quarters of companies were excluded from the analysis as they set targets in 2021 or 2022. Note also that this sample of 205 includes the 123 companies shown in the preceding graph.

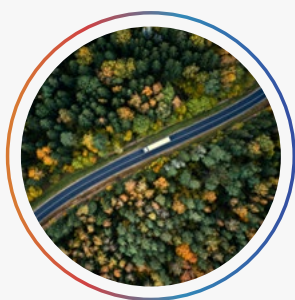
⁴⁹ Companies for whom the emissions in those two years were non-comparable (e.g., due to a restatement or significant change between the years) were excluded. Refer to Appendix 2 for further details on the GHG emissions analysis over time.

2022 KEY MILESTONES



Photo by Randy Fath on Unsplash

IN 2022, THE SBTI CONTINUED TO DEVELOP AND EVOLVE IN SUPPORT OF THE GLOBAL GROWTH IN SCIENCE-BASED TARGETS ACROSS REGIONS AND SECTORS. IT SCALED UP IN TERMS OF ITS STAFF, SIZE, CAPABILITIES AND AMBITION.

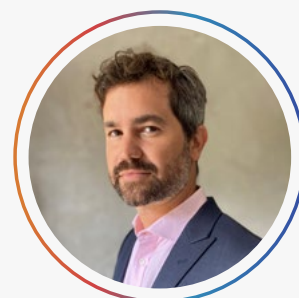


PARTNERSHIPS FOR SUCCESS

Collaboration lies at the core of the SBTi's way of working. In January, we announced a new partnership with the Carbon Risk Real Estate Monitor initiative to align their existing methodologies to 1.5°C pathways for operational real estate emissions. Later in the year we also began a technical collaboration with Mission Possible Partnership to improve guidance to support companies in sectors including aluminum, chemicals, aviation, and trucking through the target setting process.

SBTi APPOINTS ITS FIRST CEO

In February, we appointed Luiz Fernando do Amaral as our first chief executive, with a remit to increase the SBTi's institutional robustness and governance, and ensure it was in a strong position to scale up to meet the increasing demand for science-based targets. Luiz has since overseen significant growth in the SBTi team and the creation of an expanded executive leadership team.



DEVELOPMENT OF FINANCIAL INSTITUTION NET-ZERO STANDARD BEGINS

In the same month, we launched a public consultation on the development of the first Net-Zero Standard for the financial sector, which attracted over 250 responses. The subsequent Foundations Paper on Net-Zero for Financial Institutions, published in April, addressed key issues for financial institutions regarding the development of net-zero targets; specifically, a standard definition for net-zero, the use of offsets and carbon credits and fossil fuel phase-out approaches. In the second half of the year we established an Expert Advisory Group to guide development of the Standard, with work continuing in 2023.

SBTi ANNOUNCES INTENTION TO INCORPORATE

In June, we publicly announced plans to become a formal institution, linked to but separate from its founding partners CDP, World Resources Institute (WRI), World Wide Fund for Nature (WWF) and the United Nations Global Compact, and its collaborator the We Mean Business Coalition.



RECRUITMENT OF NEW TECHNICAL COUNCIL BEGINS

In September we opened applications for members of our new independent Technical Council. Council members were announced in March 2023, and took up their posts on July 1 2023.

REVIEW OF SCOPE 3 TARGET-SETTING GUIDANCE SECURES INPUT FROM OVER 200 ORGANIZATIONS

Also in September, we launched a global cross-sector survey to better understand the barriers and limitations companies face when baselining, setting and delivering scope 3 science-based targets. The survey informed a review of our scope 3 guidance, with an aim of ensuring a target-setting framework that catalyzes value chain decarbonization in line with 1.5°C pathways in a robust, actionable and transparent way. The review would continue into 2023.



NEW GUIDANCE FOR THE CEMENT SECTOR

Our work to support the decarbonization of high-emitting industries forged ahead in 2022. In September, we launched the [Cement Science Based Target Setting Guidance](#). This enabled companies in the cement and concrete industry to set near-and long-term science-based targets in line with 1.5°C for the first time.

PUBLIC CONSULTATION ON STEEL GUIDANCE

September also saw the launch of a public consultation to inform the development of similar guidance for the steel sector, with development continuing into 2023.





OIL AND GAS INTERIM REPORT

Our work to develop sector-specific methodologies for oil and gas companies to set science-based targets continued, with the September publication of the [Oil and Gas Project Interim Report](#) with Mott MacDonald. This summarized input received from the SBTi's specially-convened expert advisory group, and set out next steps for the development of our Oil and Gas sector methods and guidance. Work on this critical guidance is continuing in 2023.

WORLD'S FIRST LAND-BASED EMISSIONS GUIDANCE IS LAUNCHED

At the end of September we published our [Forest, Land and Agriculture \(FLAG\) Science Based Target Setting Guidance](#). FLAG emissions represent almost a quarter of total GHG emissions, making the sector the second-largest emitter worldwide. The new guidance provided the world's first standard method for companies in land-intensive sectors to set science-based targets that include land-based emissions reductions and removals, unlocking the vast decarbonization potential of these sectors.



SBTi INCREASES COMMITMENT COMPLIANCE TRANSPARENCY

At the start of November, we announced that we would be taking a [more stringent approach if companies did not fulfill their commitments to submit science-based targets](#). Among a range of measures the policy, which would come into force in January 2023, would ensure that companies which did not submit targets within the stipulated time – usually 24 months – would be labeled on the SBTi website as 'Commitment removed'. In this way, it aimed to deter companies from making commitments that they would be unable to fulfill.

WORLD-FIRST ROADMAP FOR NET-ZERO SHIPPING BY 2040

The SBTi rounded out the year with publication of our [Science Based Target Setting Guidance for the Maritime Transport Sector](#). The guidance enables maritime transport companies to set near-and long-term science-based emissions reductions targets in line with 1.5°C. With more than 80% of global trade by volume carried by sea, the world's first guidance would fill a considerable gap in the transportation sector's ability to decarbonize. By using this guidance, maritime transport businesses can set and implement credible climate targets with the ambition needed to keep in line with the Paris Agreement.



IT'S TIME TO TAKE THE NEXT STEP ON YOUR CLIMATE JOURNEY

Businesses hold the key to tackling catastrophic climate change. As this report shows, the number of companies and financial institutions taking action is higher than ever – but if we are to keep global heating below 1.5°C, every company and financial institution needs to take action now.

If you have set science-based targets:

1. Upgrade to a net-zero target if you haven't already.
2. Disclose your emissions and progress against targets annually. For more information on our recommended methods see the SBTi Corporate Manual.
3. Encourage your value chain, customers – and even your competitors – to set science-based targets of their own. You may find our Supplier Engagement Toolkit helpful.

If you have committed to set science-based targets:

1. Get everything in place for your target submission.
2. Book your validation slot in good time.
3. Remember that if you commit to setting a target but fail to do so, your company will be marked as 'commitment removed' on the SBTi website.

If you have not yet set science-based targets:

Visit our [website](#) for all available resources to make a commitment and start developing your target.



Wherever you are on your science-based targets journey, the SBTi website has all the information and guidance you need.



APPENDIX 1: DATA SOURCES

The analysis included in this report presented in the form of texts, graphs and tables is based primarily on data from the following sources:

1. Information of commitments and targets publicly available in the SBTi target dashboard as of December 31 2022. The set of commitments and targets used for this progress report is available for download on the SBTi website at <https://sciencebasedtargets.org/progressdashboard>
2. GHG emissions inventories supplied by companies to the SBTi during the target validation or review process in aggregated form, used for statistics on GHG emissions coverage and gross committed linear annual reductions.
3. Market capitalization data for companies with commitments or validated science-based targets, as well as estimated global market capitalization was retrieved from Bloomberg Finance L.P. based on all publicly available companies with the date of December 30 2022.
4. Composition of equity indexes was retrieved from Bloomberg Finance L.P. and FTSE Russell data portal with the date of December 31 2022.
5. Public responses to the CDP Climate Change Questionnaire 2022 on section C6. Emissions data for the estimation of GHG emissions reductions over time (see Appendix 2 for further details), as well as section C.4 Target and Performance for the analysis for tracking progress against science-based targets (see Appendix 3 for further details).
6. Information retrieved from company sustainability reports and websites (see Appendix 3 for further details).

For the terms and conditions on data use please see the [Important Notice section](#).

APPENDIX 2: METHODOLOGY FOR CALCULATING GROSS SCOPE 1 AND 2 EMISSIONS OVER TIME

Detailed below is the methodological approach implemented in the calculation of data set out in the graph: *Gross scope 1 and 2 emissions and annual change rates of companies with approved targets compared to global emissions between 2015 and 2021*.

Sample composition

- This analysis includes the information of 123 companies' emissions data for scope 1 and 2 emissions between 2015 and 2021 that had set science-based targets that had been approved and published in the SBTi target dashboard as of December 31.
- The sample size is based on the availability of reliable emissions data for scope 1 and 2 emissions disclosed by companies to CDP for each of the accounting years 2015-2021. Out of 1,186 companies with approved targets, 609 companies were initially identified, where 123 companies were found with usable data by following the quality assurance measures described in the methodology below.

Source of information

Emissions data come from the CDP climate change questionnaire public and non-public disclosure data in questions C6.1 and C6.3.

Methodological approach

- For the calculation of emissions over time, years were assigned by the end date of the accounting period in order to account for companies using a financial year in a standardized manner.
- Companies using inconsistent accounting year periods were removed from the sample except in cases of accounting periods within one month of each other.
- Companies accounting for emissions with a January 1 accounting period end date were reassigned as having an end date of December 31 of the previous year to align with calendar years.

- Additional quality assurance measures were taken for this year's time series analysis to ensure comparability:
 - Companies with a change in emissions between adjacent years in the time series time frame attributed to a merger, acquisition, divestment, change in methodology, or change in boundary were excluded from the time series when any of these changes was at least 5% of total scope 1 and 2 emissions.
 - Companies that had a 'restatement cliff' within the time series time frame were excluded. Emissions restatements occur when a company reports emissions figures for the most recent accounting year as well as preceding accounting years. This is sometimes done after a significant change that requires base year recalculation; companies may restate emissions in years other than the base year to provide emissions data over time for the new company structure or calculation methodology. When companies did not restate all years back to the 2015 accounting year, however, the company was excluded from the analysis because non-restated figures represent a different company structure or calculation methodology and thus do not represent a true time series.
- 2021 is the last year shown because most companies did not report a 2022 inventory to CDP in 2022. This time series represents available emissions data of companies between 2015 and 2021, so in many cases reflects emissions data before a company joined the SBTi.
- The analysis includes scope 1 emissions and scope 2 market-based emissions, where available. As per the Greenhouse Gas Protocol scope 2 guidance, if a company's market-based data were not available, location-based data were used to represent the lowest-granularity market-based data. For more information on market-based emissions, see the [GHG Protocol scope 2 guidance](#).

APPENDIX 3: METHODOLOGY FOR ASSEMBLING PER-COMPANY AND PER-TARGET DATA



In order to track progress against science-based targets, the authors performed a quality check by comparing the target as publicly reported by the companies to the target as validated by the SBTi. The review of progress against science-based targets consists of the collection, review and disclosure of publicly available self-disclosed data on progress against approved science-based targets.

To perform this review, the SBTi-approved wording of the target, including target information such as the target type, scope coverage, base year, target year and target value⁵⁰ was compared or matched against publicly available data from:

1. Public company responses to the CDP Climate Change Questionnaire 2022; or
2. Information from corporate sustainability reports and companies' sustainability websites. This information was retrieved via desk research.

The following sections describe the sources of data included in this analysis and the methodological approach to perform a review of the latest progress data available on validated targets.

DESCRIPTION OF THE DATA

Company and target dataset composition as of December 2022

- This analysis includes the review of 2,079 organizations that had set science-based targets that had been approved and published in the SBTi target dashboard as of December 31 2022.
- The target dataset includes targets that have a target year prior to 2022, which had not been replaced or updated by newer targets.
- The volume of organizations and their corresponding science-based targets included in this dataset have the following composition, in terms of target type.

Table 1. Composition of science-based targets as of December 31 2022

Organization type	Organizations	Near-term and long-term targets ⁵¹	Net-zero targets	Near-term portfolio targets ⁵²
Company	1,186	2,902	84	N/A
SME	846	890	52	N/A
Financial Institution	47	74	N/A	222
Total	2,079	3,866	136	222

Exclusions:

- Target updates that were approved and published in the SBTi target dashboard after December 31 2022.
- Targets that are no longer active (i.e. replaced by newer targets before or on December 31 2022). Note that some of these archived targets are no longer active because companies consider them 'achieved' and have replaced them with further targets.
- Certain early approved targets that do not allow for comparative reporting and/or targets for which progress could not be tracked and presented at the time of writing the report, including embodied carbon targets, efficiency and performance targets, and cumulative emission targets.

⁵⁰ To support independent, external analysis of these results, this analysis was only made with publicly available information on targets. For this reason, the matching exercise did not check that publicly reported base year GHG emissions covered by the validated targets matched the base year data provided by companies to the SBTi at target validation, which at the time of writing cannot be disclosed for company contractual reasons.

⁵¹ Excluding targets covering scope 3 category 15 (investments) set by financial institutions, referred as portfolio targets.

⁵² Targets covering scope 3 category 15 (investments) set by financial institutions

Target progress data sources

- Publicly disclosed response data from the 2022 CDP climate change questionnaire.⁵³ Self-reported target progress data from companies, financial institutions, and SMEs was retrieved for the following questions:
 - Absolute emissions targets disclosed in question C4.1a
 - Emissions intensity targets disclosed in question C4.1b
 - Renewable energy targets disclosed in question C4.2a
 - Supplier engagement targets disclosed in question C4.2b
 - Customer engagement targets disclosed in question C4.2b
 - No-deforestation targets disclosed in question C4.2b
 - Net-zero targets disclosed in question C4.2c
 - Portfolio targets disclosed in question C-FS4.1d
- Latest publicly available information provided in sustainability or other corporate reports, company websites, or non-financial reports. These reports were identified and retrieved through desk research performed between February and June 2023. Desk research data were presented only when public CDP data were not available.

Note that this report presents the matching results for net-zero targets but does not display progress towards these targets. The reason for this is that entities set net-zero targets according to the SBTi Corporate Net-Zero Standard and relevant SME guidance, which require the setting of ambitious near-term and long-term emissions abatement targets. Net-zero targets consist of a commitment to reduce emissions to residual levels and to neutralize any unabated emissions with permanent removals at the target year. Progress toward net-zero targets is therefore dependent on progress of near-term and long-term abatement targets and neutralization at a future date.

MATCHING METHODOLOGY OF TARGETS WITH PUBLIC AVAILABLE SOURCES

Scope of the per-company and per-target review

Targets set vary by type of target-setting organization due to the differing target-setting criteria established by the SBTi. The following table summarizes the sources of target progress data by target type and type of target-setting organization. Where the table indicates desk research was included, the desk research was only conducted for organizations that did not publicly report target information to the CDP 2022 climate change questionnaire.

Table 2. Scope of review

Organization type	Near-term and long-term targets ⁵⁴		Net-zero targets		Near-term portfolio targets ⁵⁵	
	CDP public responses	Desk research	CDP public responses	Desk research	CDP public responses	Desk research
Company	Included	Included	Included	Not included	N/A	
SME	Included	Not included	Included	Not included	N/A	
Financial Institution	Included	Included	N/A		Included	Not included

⁵³ The 2022 CDP climate change questionnaire was open for responses between April 13 and September 28 2022. Because the sample of targets for this analysis includes those approved and published up until December 31 2022, some targets in the sample were not approved by the disclosure deadline and may not have been disclosed to CDP.

⁵⁴ Excluding targets covering scope 3 category 15 (investments), referred as portfolio targets.

⁵⁵ Targets covering scope 3 category 15 (investments)

For purposes of matching reported information to SBTi information, targets can be categorized by whether they are near-term vs. long-term vs. net-zero and whether they are non-portfolio vs. portfolio.

The target matching methodology differs based on the type of target disclosed, with the following methodological sections split by group as labeled in the table.

Table 3. Classification of targets for review

	Non-portfolio targets (absolute, intensity, engagement, renewable electricity; can cover scope 1, 2 and/or 3)	Portfolio targets (exclusively on scope 3, category 15)
Near-term	Group A: Corporations, SMEs, and FIs	Group B: FIs
Long-term	Group A: Corporations and SMEs	N/A ⁵⁶
Net-zero	Group C: Corporations and SMEs	N/A

Matching methodology for targets publicly disclosed to CDP

The process of matching SBTi targets to the CDP-reported targets involved a combination of automated checks and manual review. This exercise identified consistencies and inconsistencies of self-disclosed data to ensure a 'like to like' comparison of the validated targets and the corresponding responses in the CDP climate change questionnaire. The detailed methodological approach is presented in the following sections, separated by target group as classified above in the table.

Desk research methodology

For a wider review on progress against targets, desk research was performed for entities not disclosing publicly to CDP. The desk research included the research, collection and analysis of publicly available information provided in sustainability or other corporate reports, company websites, and/or non-financial reports, using techniques such as keyword searches and similar match criteria, when data were available.

This task was performed between February and June 2023 by outsourced analysts under the supervision of the SBTi. The analysis used the latest resources available at the time of review, including resources from previous years. Information or reports published

after June 2023 were not considered. The desk research excluded public reports that were used for the SBTi's 2021 Progress Report.

Desk research on publicly available sources was only performed for near-term and long-term non-portfolio targets from companies and financial institutions on the grounds of greatest potential emissions impact and likelihood of finding results.

Determination of target reporting status

Depending on the results of the matching methodology implementation, each science-based target was given one of the following reporting statuses:

Matched targets: Targets where progress information is comparable to the validated science-based target, under the matching criteria presented in this methodology.

Partial matches: Targets where progress information was disclosed with certain types of discrepancies: for example, in the disclosed target value, base or target year. Partial matches are shown in the results in the interests of transparency and to highlight the variation in quality of target progress reporting and expectation of higher quality reporting in future disclosures.

⁵⁶ As of the date of publication of this report, the Net-Zero Standard for Financial Institutions was under development so no financial institutions had set long-term and net-zero targets with the SBTi.

Matched to archived targets: Targets where progress information did not match the current active target, but an archived target (i.e. one replaced by newer targets). At the time of reporting, companies could have been in the process of updating a science-based target and reported on the target valid at that moment. Archived target matches are shown in the results in the interests of transparency and to highlight the reporting efforts of the company and expectation of the most updated target reporting in future disclosures.

No matched targets: Targets where progress information could not be publicly found or could not be represented were considered not matched.

The following reasons can explain why progress was not shown for these targets:

- No matching publicly reported data were available. These include targets from companies that did not report publicly to CDP in 2022 and for which no other published target progress information was found through the desk research.
- Progress for some targets set in or after 2022 was not found. Progress disclosure was not expected to be found for many of these targets, as they may have been set after the CDP disclosure deadline or publication of the annual report (e.g. there were under validation by the SBTi at the time of disclosure) or would not have meaningful progress to be reported.
- Publicly available progress data were found but the targets are not presented because it was not certain that the company's reported target corresponded to the SBTi target, there were differences in the data fields used for matching or no numerical progress data were disclosed. Examples of such circumstances include targets with discrepancies in target value or base/target year beyond the matching thresholds, different activity units (for intensity targets), differences in target type (absolute target reported as intensity target), and targets that could not be matched post-aggregation or disaggregation of scopes. For the latter some examples include companies reporting progress information of two validated targets with different scopes and different target values as one combined target.
- The company indicated the use of carbon offsets in the calculation of the target progress.

Note that in analysis for the 2021 Progress Report, 'Partial matched targets' were presented under the classification 'No matched targets'.

The following sections provide more details on how target reporting status was determined for each group of targets.

GROUP A: NEAR-TERM AND LONG-TERM NON-PORTFOLIO TARGETS

The matching of near-term and long-term targets was performed following quality hierarchy rules to determine for each case if the reported target matched with the validated target description.

Matched targets

- First-degree matching of data was done against base year, target year, target value, scope(s) covered, emission intensity metric/activity indicator (in the case of intensity targets, engagement targets, and no-deforestation targets) and confirmation that the target coverage was company-wide.
- Second-degree matching included allowing for base year differences of ± 1 year (to allow for financial year accounting), target year differences of ± 1 year, and target value differences of ± 1 (to account for rounding differences), in addition to the exact matches against scope(s) covered and emission intensity metric/activity indicator (in the case of intensity targets). Where these discrepancies were within the ± 1 range and the other fields were identical, the disclosed target was matched with the SBTi target.
- Third-degree matching included a manual review of remaining targets where base year, target year and target value were identical but there were inconsistencies in the following aspects. For these cases, a match / no match determination was made based on best judgment from the SBTi expert reviewer.
 - **Scope arrangement.** In some cases, target progress was reported at a more aggregated or more disaggregated level than the SBTi target language. For example, a company may have set a combined scope 1, 2 and 3 target but reported two targets to CDP corresponding to a target covering scopes 1 and 2 and a target covering scope 3 (reverse also occurs). For these one-to-many or many-to-one cases, all target scope combinations were matched and displayed in the report in the most disaggregated fashion. For these multiple matches, the information on progress is presented alongside the SBTi target information without additional aggregation and the progress against the validated science-based target is not calculated. These cases are flagged in the matching results.

- **Disclosure of scope 3 categories.** When the information on scope 3 categories was present in the target language, the reported target categories were checked. As with the case above, the information on progress is presented as reported and flagged in the results.

Partial matched targets

The partial match status was applied for the following cases:

- **Partial match due to scope coverage discrepancy:** Applicable for science-based target(s) covering more than one emissions scope that were reported in a disaggregated manner, but where not all scopes were reported. For example, a company that set a combined scope 1, 2 and 3 target reported progress on a combined scope 1 and 2 target, but did not report a scope 3 target.
- **Partial match due to target year discrepancy:** This case applies for companies that have reported a target with a target year difference of between two and five years in either direction, in comparison to the validated science-based target. For renewable electricity and supplier or customer engagement targets, this case also includes reported targets with a base year difference between two and five years, since the base year is not central to the stated ambition of the target.
- **Partial match due to target value discrepancy:** Applicable for science-based target(s) whose target value has been reported with a difference of no greater than 10% of the validated science-based target's ambition in either direction.
- **Partial match due to reporting an archived target:** Companies that reported on targets that are no longer active due to a target update are indicated. These cases are referred to as 'reported an archived target'. These cases occur when companies have updated their targets by the sample cutoff date (December 31 2022) but progress on previous targets was done before the targets were updated. When a company has reported both an 'active' and 'archived' target, only information of the archived targets is presented in the results.

Matching methodology for targets publicly disclosed to CDP

In addition to the approach described above, the following considerations should be noted regarding matching with CDP responses:

- The accounting year corresponding to the CDP target progress was assigned as the year in which the end of the accounting period fell, in order to categorize fiscal years consistently with SBTi target language convention.
- No-deforestation target matching was done if the value in the metric field in C4.2b was 'Percent of supply chain compliant with zero gross deforestation.' Engagement target matching was done if the value in the metric field in C4.2b was one of the following, as applicable: 'Percentage of suppliers (by emissions) with a science-based target', 'Percentage of suppliers (by procurement spend) with a science-based target,' or 'Percentage of customers (by emissions) with a science-based target.'
- The CDP targets questions allow respondents to indicate whether their target is a science-based target and whether it covers the whole company or a subset (e.g., a certain geography or business area). For third-degree matching, targets were individually reviewed and matches were assumed when discrepancies in the following fields had a reasonable explanation: targets status (e.g. the target was reported as being in validation stage instead of SBTi approved), coverage type (e.g. business division), or metric/activity indicator (in the case of intensity targets). These were considered matches on an individual basis, including for example when targets were undergoing SBTi validation during the CDP reporting period or where business units corresponded to a certain scope 3 category.
- Manual review was conducted to resolve any inconsistencies in data, including data input errors.
- Cases where the open questions field in the target section of the CDP climate change questionnaire indicated a clear divergence from the approved target, such as use of offsets, were not considered a match even when all other data points coincided

Desk research methodology

The analysis followed the same logic as the matching methodology for CDP disclosure described above. Furthermore, the following logic is applicable to this methodology:

- Information of progress against targets was only considered when it was explicitly stated that it referred to an approved science-based target.
- Besides sustainability annual reports, some companies presented supplements to provide more details, for example of their GHG inventories. In cases where more than two sources were consulted, two links are presented in the corresponding column.
- In some cases, progress was derived from GHG emissions data, when they were associated with the approved target(s).
- The figure on progress against the target corresponds to the reporting year stated in the source used. For example, if the latest sustainability report available for a company at the time of the desk research was for the year 2022, and the reporting year values of their GHG emissions correspond to the year 2021, the reporting year to calculate progress with is 2021.
- Public reporting in languages other than English was assessed according to analyst proficiency in the languages. In cases where non-English reports are cited, the results are presented in the original language.
- When the reporting year is the same as the base year of the target, progress against target is presented as 0%.
- For text fields presented in the results, such as measures taken or plans towards the achievement of a target, analysts used best judgment to identify relevant disclosed information. In some cases, this information was paraphrased for brevity. A link to the original source indicating the page(s) from which the information was drawn is provided for reference.
- Additional external research was not conducted for companies that reported target data to CDP, as it was assumed that companies would provide all relevant target data via CDP disclosure, if it were present.
- Similarly to the automated matches, cases where use of offsets was included in the calculation of target progress were not presented in the analysis.

GROUP B: PORTFOLIO TARGETS

The following methodology was used to match approved portfolio targets from financial institutions with publicly available information on their progress. Note that the non-portfolio targets set by financial institutions are addressed in Group A. At the time of writing, the target-setting criteria for long-term and net-zero targets for financial institutions was under development. Therefore all the portfolio targets in this sample are near-term targets.

Financial institutions set portfolio targets on scope 3, category 15 emissions using a distinct set of target-setting methods. The matching of near-term portfolio targets was performed using the following rules to determine for each case if the reported target matched with the target description.

Matching methodology for targets publicly disclosed to CDP

The process for matching SBTi published portfolio targets to CDP-reported targets involved the review of the responses of question C-FS4.1d of the 2022 CDP climate change questionnaire. Target matching for portfolio targets was done manually due to the small number of targets and resourcing constraints on adapting automated scripts developed for Group A.

Matched targets

Similar rules were used for desk research and for entities that reported publicly to CDP.

- Base year and target year match, or are within one year in either direction to allow for financial year reporting
- The reported target value is within 10% of the target value of their approved target. This flexibility accounts for the manner in which portfolio target values are reported, which is as a target year value compared to a base year value. Reporting too few significant figures can result in apparent target values different from the actual target value.
- Activity indicator (for intensity targets) and scope coverage are the same
- The asset class covered was the same. In one case, target progress was reported at a more aggregated level than the SBTi target language, i.e., two targets over two asset classes were

reported together under one target. In this case, it was considered a match and displayed in the report in the most disaggregated fashion. This case is flagged in the matching results.

No partial matched targets are presented under Group B.

Desk research methodology

No desk research was performed for near-term portfolio targets of financial institutions not disclosing to CDP. Only desk research for these financial institutions was performed for non-portfolio targets following the methodology addressed in Group A.

GROUP C: NET-ZERO TARGETS

The following methodology was used to match approved net-zero targets from corporations and SMEs with publicly available information on their progress.

Matching methodology for targets publicly disclosed to CDP

The process for matching SBTi published net-zero targets to CDP-reported targets involved the review of the responses of question C4.2c of the 2022 CDP climate change questionnaire. Target matching for net-zero targets was done manually due to the small number of targets and resourcing constraints on adapting automated scripts developed for Group A.

Matched targets

A net-zero target was considered matched (i.e. matched to disclosed data) based on the company's net-zero target year being the same or within one year in either direction to allow for financial year reporting.

Partial match targets

The following cases are presented as partial matches for net-zero targets:

- Partial match due to unclear unabated emissions plans: Some respondents selected 'no' or 'unsure' when asked whether they intend to neutralize any unabated emissions with permanent carbon removals at the target year, as is required to achieve a net-zero target.
- Partial match due to coverage: Some companies indicated that their targets did not cover company-wide emissions.

Desk research methodology

No desk research was performed for net-zero targets of companies not disclosing to CDP.

PRESENTATION OF TARGET AND COMPANY REPORTING STATUS

For each entity with approved science-based target(s), a summary statement describes the target reporting status of all of their targets. The below table and accompanying key describe how the statements were selected.

Reporting	All reported, full matches ⁵⁷	All or at least one SBT reported, with at least one full match	Fewer than all, no full matches	None
Active targets	1	2	3	4
At least one archived target	N/A	5	N/A	N/A

Key

- 1. Reported progress on all active targets with no data discrepancies found:** All active targets were matched under this methodology
- 2. Reported progress for at least one active target.** Information for other target(s) could not be publicly found or could not be represented, or was reported with data discrepancies: At least one active target was matched. The rest of the targets were partial matches or were not matched.
- 3. Reported progress with data discrepancies for at least one active target.** Information for other target(s) could not be publicly found or could not be represented: At least one active target was partially matched. The rest of the targets were partial matches or were not matched.
- 4. No comparable progress data of active target(s) was publicly found.**
- 5. Reported progress for at least one archived target.**

⁵⁷ Full match refers to a target that was matched under the methodology presented in this section. This does not apply for partial matches.

DISCLAIMERS ON THE TARGET PROGRESS DATA

Target progress data as represented in the report have been reported publicly by companies themselves through the CDP Climate Change Questionnaire, or obtained from public company reports and other public sources with the support of outsourced services.

Data collected from public sources by outsourced analysts have gone through a quality assurance process performed by the SBTi. Nonetheless, some errors are likely due to the nature of the exercise. In terms of data interpretation and entry, this could include missing relevant disclosure on a company website, occasional errors during the transcription of figures (reported target progress data or GHG emissions used for calculating progress), or misinterpretation of reported information.

Target progress data identified through desk research was retrieved from sources available at the time the research was conducted. A link to the web source and date of access of each company's data is provided but may not continue to be a valid or correct hyperlink in perpetuity.

Data related to progress against targets presented in this analysis **should not be interpreted as confirmation or validation of a company's progress towards or achievement of targets.**

The SBTi is working on enhancing the accuracy, quality, usefulness and transparency of its data. We regret any errors in target or company data.

Please [use this form to submit a change request](#) if you identify an issue with the data shown in this report, especially if you represent a company displayed.

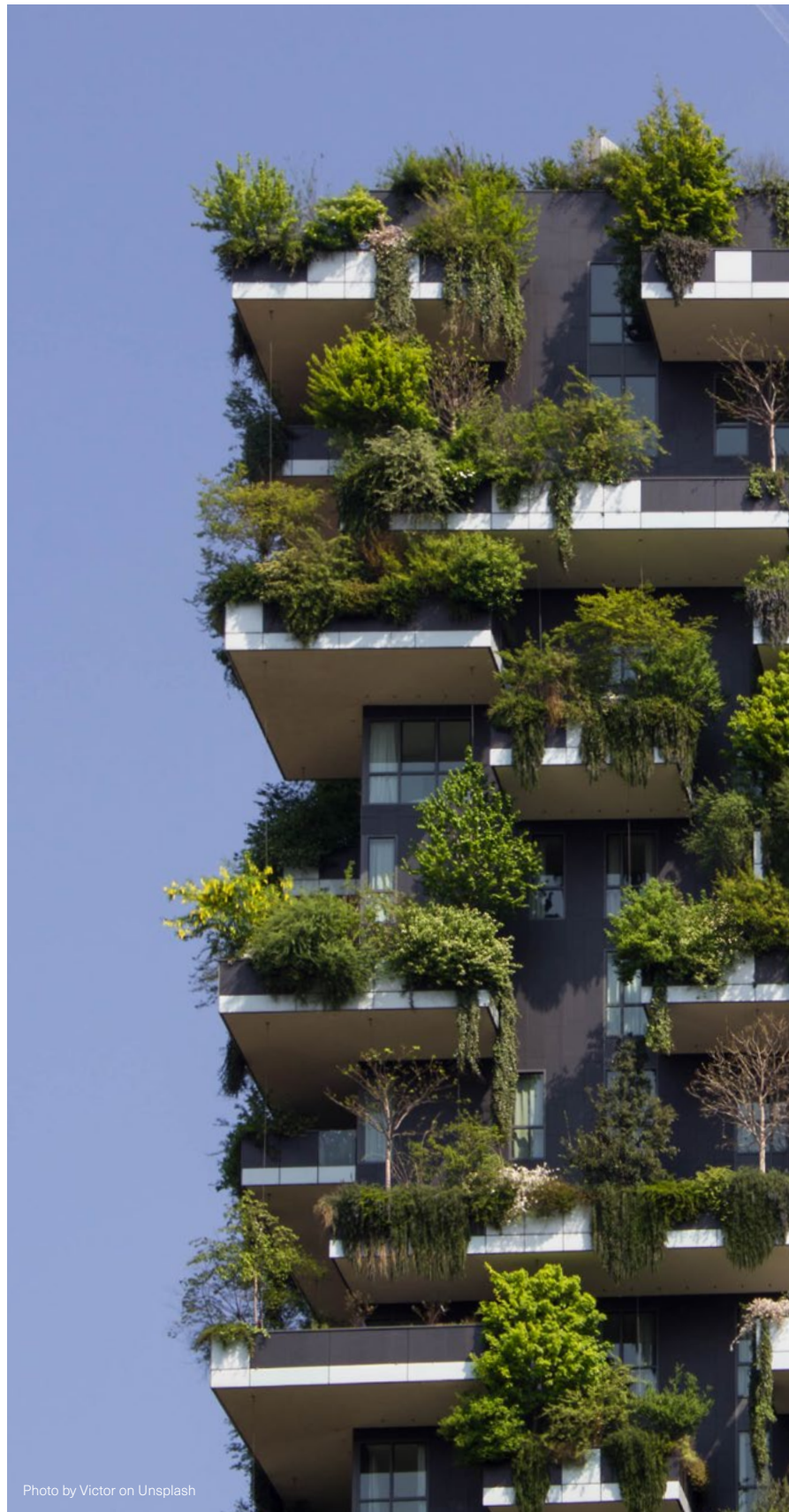


Photo by Victor on Unsplash

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