



SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

# SBTi Corporate Manual

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## About the Science Based Targets initiative

The Science Based Targets initiative (SBTi) mobilizes the private sector to take urgent climate action. By guiding companies in science-based target setting, the SBTi enables companies to tackle climate change while seizing the benefits of, and boosting their competitiveness in, the transition to a net-zero economy.

The SBTi is a collaboration between CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact and is one of the We Mean Business Coalition commitments. The initiative defines and promotes best practice in science-based target setting, offers resources and guidance to reduce barriers to adoption, and independently assesses and approves companies' targets.

### What is a science-based target?

Greenhouse gas (GHG) emissions reduction targets are considered “science-based” if they are in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement - to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C.

## Why join the Science Based Targets initiative?

### How business help prevent dangerous climate change

The Paris Agreement in 2015 saw nearly 200 of the world's governments commit to prevent dangerous climate change by limiting global warming to well-below 2°C. This signaled an acceleration in the transition to a net-zero economy. Many companies are already demonstrating they have the skills, expertise, and ingenuity to make this a reality - but need ambitious emissions reduction targets that ensure the transformational action they take is aligned with current climate science.

The SBTi enables companies to demonstrate their leadership on climate action by publicly committing to science-based GHG reduction targets. An increasing number of companies joining the initiative will create a critical mass that will drive science-based target setting throughout the private sector. The overall aim of the initiative is for science-based target setting to become standard business practice and for corporations to play a major role in ensuring global warming is kept to a well-below 2°C increase.

### Business benefits of setting science-based targets

The SBTi is a leader in the corporate climate action arena that defines and promotes best practice in science-based target setting and offers resources and guidance to reduce barriers to adoption. The initiative is backed by four of the most prestigious environmental organizations, and through the initiative, these partner organizations conduct a comprehensive, independent quality assessment of the targets against the latest climate science and provide multiple opportunities to showcase approved targets.

Reducing GHG emissions in line with climate science is good for the planet and for companies. Science-based target setting makes business sense – it future-proofs growth, saves money, provides resilience against regulation, boosts investor confidence, and spurs innovation and competitiveness – while also demonstrating concrete sustainability commitments to increasingly conscious consumers.

Some business benefits may result from setting arbitrary goals: goals based on what is confidently achievable or what sector peers are doing. However, SBTs allow a company to capitalize on the commercial advantage to their fullest extent and move beyond incremental change (Table 1).

*Table 1. Benefits of adopting an SBT*

Opportunity	Common Practice – Incremental Goals	Science-based Targets
Build business resilience and increase competitiveness	Incremental goals often lead to decreases in costs and increases in operational efficiency, but may limit companies to only pursuing the “low hanging fruit.”	Methods to set SBTs challenge business to re-align with the net-zero economy, capitalizing on a range of opportunities beyond cost-savings and avoiding the risk of stranded assets.
Drive innovation and transform business practices	Setting goals can inspire companies and supply chain actors to discover novel solutions and product offerings. Because incremental goals are near-term <sup>1</sup> and not a “stretch,” companies may not be pushed to transform business practices.	As SBTs include a long-term vision, companies can think beyond the near-term, common solutions for GHG emissions reductions. New technologies and financing options can be developed in a corporate environment that prioritizes preparing for a net-zero economy.
Build credibility and reputation	Companies that are transparent in their GHG reduction efforts garner reputational credibility through demonstrating their commitment to addressing climate change. However, investors and other stakeholders are now demanding targets based on external, science-driven projections, which could put companies who fall short of this requirement at risk.	SBTs have higher credibility with stakeholders. Companies with SBTs are often lower-risk options for long-term investment since they can demonstrate that they are planning based on the latest available science.

<sup>1</sup> “Near-term” is defined as within five years into the future.

Opportunity	Common Practice – Incremental Goals	Science-based Targets
Influence and prepare for shifts in public policy	Incremental targets send a signal to policy makers that companies take climate change seriously, but the credibility of this signal is limited by the ambition of the target.	SBTs help companies adapt to changing policies and send a stronger signal to policymakers, allowing companies to better influence policy decisions. Companies that have SBTs are much better positioned to respond to future regulatory adjustments as governments ramp up their climate action.

## Who can join the Science Based Targets initiative?

The SBTi promotes corporate climate action and encourages companies from all sectors to demonstrate their leadership by setting science-based emissions reduction targets. This includes joint ventures, cooperatives, and state-owned enterprises. The SBTi is especially keen to welcome companies in the highest-emitting sectors, who play a crucial role in ensuring the transition to a net-zero economy. The exception is oil and gas companies. Companies in this sector can make a commitment to setting science-based targets, but their targets cannot yet be officially approved. The SBTi is currently developing a methodology for target-setting in this sector.

The SBTi does not currently assess targets for cities, local governments, public sector institutions, educational institutions, or non-profit organizations. However, we encourage these stakeholders to consider science-based target setting methods when developing targets independently. Cities can register their interest in setting targets through the [Science Based Targets Network \(SBTN\)](#).

## Overview of the SBTi process

Figure 1 outlines the different steps in the SBTi process, from initial commitment to announcing approved science-based targets.<sup>2</sup>

Figure 1. Steps in the SBTi process



<sup>2</sup> Please note that Figure 1 does not apply to the target validation route specifically for small and medium-sized enterprises. For more information, please see the relevant information starting on page 8 of this document.

## Step 1: Commit to set a science-based target

### How to commit

Companies that wish to commit to set a science-based target should submit either our [standard commitment letter](#) or the [Business Ambition for 1.5°C commitment letter](#). We encourage companies to choose the latter option and commit to the highest level of ambition possible. Signing the commitment letter indicates that the company will work towards setting a science-based emission reduction target. If the company already has an emissions reduction target, the letter confirms its interest in having its existing targets verified against a set of criteria developed by the SBTi or developing new targets that will align with these criteria. The SBTi strongly encourages companies to commit before submitting targets to the initiative for validation. However, companies may choose to move straight to developing and submitting targets for validation.

Companies are urged to aim for the highest level of ambition in their target setting. The [Business Ambition for 1.5°C campaign](#) is an urgent call-to-action campaign led by the SBTi, UN Global Compact, and We Mean Business calling for companies to set emissions reduction targets in line with limiting global warming to 1.5°C. The SBTi encourages companies to join the Business Ambition for 1.5°C call to action by signing the [Business Ambition for 1.5°C commitment letter](#) that indicates your intention to align your emissions reduction targets to 1.5°C. For companies not currently committed to the SBTi, the Business Ambition for 1.5°C Commitment Letter constitutes your commitment to develop and submit emissions reduction targets aligned with the SBTi criteria.

The list of committed companies is updated every week. Companies that have committed will receive a “[Communications Welcome Pack](#)” with more information on how to communicate their commitment. The SBTi reserves the right to perform due diligence before accepting new commitments.

The SBTi encourages companies to start the target development process and submit targets for validation as early as possible. Companies that fail to have their science-based target(s) validated and published within a 24-month period after commitment will be removed from the [SBTi Companies Taking Action page](#) and from all other partners’ websites. There will be no public announcement or media statements about any companies being removed in our external materials, nor any penalties applied. Under special circumstances, the SBTi may grant companies additional time to publish their targets. Please refer to the [Expired Commitments Protocol](#) for more information.

### Small and medium-sized enterprises

In recognition of the important role small and medium-sized enterprises (SMEs) must play in global climate action as well as the limited resources available to companies of this size, the SBTi has established a separate expedited route for these companies.



An SME, as defined by the SBTi, is a non-subsiary, independent company which employs fewer than 500 employees. SMEs are not required to sign the standard commitment letter but they should use the [Target-Setting Letter](#) specifically designed and solely designated for SMEs.

This pathway enables SMEs to bypass the initial stages of committing to set a science-based target and the standard target validation process. SMEs can immediately set a science-based target for their scope 1 and 2 emissions by choosing from one of two predefined target options. Unlike larger companies, the SBTi does not require SMEs to set targets for their scope 3 emissions; however, SMEs must commit to measure and reduce their scope 3 emissions.

The SBTi introduced this expedited option for SMEs because smaller companies often lack the resources and capabilities needed to set scope 3 targets and monitor progress against them. The SBTi's speedy and simplified approach for SMEs balances the need for them to take account of emissions across their value chains without imposing too great a burden.

Like larger companies using our standard target validation route, SMEs are required to complete a recent, comprehensive greenhouse gas emissions inventory following the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard and Scope 2 Guidance. They are required to publicly report their company-wide scope 1 and 2 GHG emissions inventory and progress against published targets on an annual basis.

In order to join the SBTi, SMEs shall complete the following steps:

1. Complete the company information details in the [Target-Setting Letter](#).
2. Select one of the target options in the Letter.
3. Fill-out the emissions profile section.
4. Complete the contact details, sign the letter, and pay the USD 1,000 fee.
5. Send a digital copy of the letter in PDF format to [targets@sciencebasedtargets.org](mailto:targets@sciencebasedtargets.org).

After submitting a target-setting letter to [targets@sciencebasedtargets.org](mailto:targets@sciencebasedtargets.org) and paying the fee, a company will be recognized as having approved science-based targets at our [Companies Taking Action webpage](#) as well as on our partners' websites at [We Mean Business](#) and [CDP](#) (pending due diligence review). Companies who are engaging in the UN Global Compact will also be recognized on their [website](#). Approved SMEs will be sent a communications welcome pack and will be able to use the SBTi logo on their website and in company communications.

## Step 2: Develop a target

Once a company has signed the commitment letter, it will have up to **24 months** to: (i) develop a science-based target aligned with the SBTi criteria, (ii) submit the target to the SBTi for an official validation, and (iii) after approval, have the SBTi publish the targets on the relevant websites.

The targets must be in line with the [criteria](#) that the SBTi considers critical for qualifying a target as “science-based.” The SBTi has developed a suite of [tools and guidance](#) to help companies understand how to meet these criteria.

### Review the latest target-setting resources

This section provides an overview of science-based target setting methods and steps to formulate a science-based target, including key considerations for target setting for (i) all scopes, (ii) scope 1 and 2 emissions, and (iii) scope 3 emissions. Before developing a target, companies are encouraged to review their scope 1, 2, and 3 GHG inventories and ensure they are aligned with the GHG Protocol and the SBTi GHG emissions inventory requirements. For example, the SBTi criteria indicate that companies may exclude up to 5% of scope 1 and scope 2 emissions combined in the boundary of the inventory and target. Therefore, if a company has not yet finalized a complete scope 1 and 2 inventory covering all GHG emissions from all relevant sources within its organization's boundary, this will need to be completed ahead of submission, as it is required by the SBTi for target approval.

Companies developing targets should carefully consult relevant SBTi resources to ensure they have the latest information on recommendations and requirements. To stay up to date on our latest resources, events, and other developments, companies are also encouraged to join our newsletter by clicking ‘sign up for updates’ on our [website](#), and/or visit our website regularly. The SBTi also encourages companies to explore the [FAQ page](#) for answers to commonly asked questions.

### SBTi criteria and recommendations

Targets must meet all the SBTi criteria to be approved. The criteria and recommendations were developed using the GHG accounting and mitigation expertise of the SBTi’s partner organizations, with support from the SBTi’s [Technical Advisory Group](#). The SBTi criteria are updated on an annual basis, generally with a grace period in which the previous version of the criteria may be used. The SBTi has determined that the minor updates to the SBTi criteria for version 4.2, published in 2021, do not constitute major changes and will therefore be required effective immediately. The SBTi will align the next major criteria update with ongoing net-zero developments and plans to release this update in 2022. Any substantive changes to criteria will be accompanied by a grace period for companies to digest changes before the updated criteria become mandatory for target-setting purposes.

## Set a science-based target: Key considerations for all emission scopes

### Choose a base year

The meaningful and consistent tracking of emissions performance over the target period requires companies to establish a base year.

Three considerations are important for selecting a base year. First, verifiable data on scope 1, 2, and 3 emissions should exist for the base year. It is recommended that companies choose the most recent year for which data are available as the base year.

Second, the base year should be representative of a company's typical GHG profile. Companies can assess representativeness by comparing inventories and business activity levels over time. If it is difficult to identify a single year that is representative, companies should instead average GHG data over multiple consecutive years to form a more representative base period that smooths out unusual fluctuations in emissions. For example, atypical weather conditions might distort the emissions in a given year (say, 2017) for an agricultural producer. In response, the company could average emissions over 2016, 2017, and 2018. Its target could then be phrased as: "Company X commits to reduce absolute scope 1 and 2 GHG emissions 40% by 2025 from a 2016-2018 base period."

Third, the base year should be chosen such that the target has sufficient forward-looking ambition. While companies deserve credit for past progress, the initiative's objective is to promote action that has not yet been accomplished and to push companies that have already achieved progress to go beyond current ambition. The SBTi uses the year the target is submitted to the initiative (or the most recent completed GHG inventory) to assess forward-looking ambition.

Finally, various factors may necessitate recalculations of the base year inventory (and of the science-based target itself) to ensure continued relevance and alignment to GHG accounting best practices. See the section entitled "Describe progress toward the target" for further guidance on this topic.

### Choose a target year

Companies must set a target that covers a minimum of 5 years and a maximum of 15 years from the date the target is submitted for approval. Mid-term targets can be instrumental for identifying inefficiencies and opportunities for emission reductions.

It is also recommended to set long-term targets beyond this interval and set interim milestones at five-year intervals. Setting long-term SBTs (e.g., with target years of 2040 or 2050) encourages planning to manage the long-term risks and opportunities connected with climate change. These may include the creation of new services and markets and the need for large capital investments that offer GHG benefits. However, long-term targets alone do not match the decision horizons of many companies and might encourage later phase-outs of less efficient equipment. All targets, including interim targets and long-term targets, must be

consistent with the level of decarbonization required to keep global temperature increase to 1.5°C or, at minimum, well-below 2°C compared to pre-industrial temperatures.

If more than one target is set, companies should use the same base year and target year for all targets within the mid-term timeframe and all targets within the long-term timeframe.<sup>3</sup> A common target period will simplify data tracking and communication around the target. Where value chain data are difficult to obtain, however, it is acceptable if scope 1 and 2 targets use a different base year from scope 3 targets.

#### Example: Framing and communicating short- and long-term targets

Kenyan mobile network operator Safaricom PLC commits to reduce absolute scope 1 and 2 GHG emissions 43% by 2030 and 74% by 2050 from a 2017 base year. Safaricom PLC commits to reduce absolute scope 3 GHG emissions 41% by 2030 and 72% by 2050 from a 2017 base year.

### Ensure the target boundary is aligned with the GHG inventory boundary

The GHG Protocol defines three different approaches for determining the organizational boundaries of corporate GHG inventories:

- Operational control: a company accounts for 100 percent of the emissions from operations at which it has the full authority to introduce and implement operating policies. It does not account for any of the emissions from operations in which it owns an interest but does not have operational control.
- Financial control: a company accounts for 100 percent of the emissions from operations at which it can direct financial and operating activities with a view to gaining economic benefits from those activities.
- Equity share: a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation.

Companies must align the boundaries of its SBT with those of its GHG inventory. To do so, it must select a single approach based on a range of company-specific considerations and apply that approach consistently across its corporate structure, for both the corporate inventory and the SBT. The [GHG Protocol Corporate Standard](#) provides further guidance.

Companies must also ensure that the SBT and corporate inventory cover all relevant emissions of the seven different GHGs or classes of GHGs covered by the UNFCCC/Kyoto

<sup>3</sup> This best practice is most applicable to emission reduction targets, i.e., absolute and intensity targets. Companies' renewable electricity, supplier engagement, and customer engagement targets may and sometimes must have different target years than emission reduction targets.

Protocol. These are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>).

### Determine how to treat subsidiaries

Complex business relationships (subsidiaries, joint ventures, etc.) can complicate how the GHG inventory and thus the target boundary are drawn. Parent companies must set SBTs for subsidiaries in accordance with the selected organizational boundary approach. For more information, please consult page 19 of the GHG Protocol Corporate Standard. When required by the organizational boundary approach, parent companies must include emissions from subsidiary operations in their GHG inventory. The SBTi does allow subsidiaries to submit targets. However, regardless of whether the subsidiary has approved SBTs, parent companies must include subsidiaries in their target boundary as required by the selected organizational boundary approach.

### Exclude the use of offsets

Offsets are discrete GHG reductions used to compensate for GHG emissions elsewhere. They are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the mitigation project generating the offsets.

Offsets shall not be counted as reductions toward meeting an SBT. Instead, companies must account for reductions resulting from direct action within their operations or value chains. Offsets may be useful, however, as an option for companies wishing to finance additional emission reductions beyond the SBT.

### Exclude avoided emissions

A company's product avoids emissions if it has lower life cycle GHG emissions relative to some other company's product that provides an equivalent function. The avoided emissions occur outside of the product's life cycle inventory and therefore also outside of the company's scope 1, 2, and 3 inventory. For example, the company might manufacture appliances that are more energy efficient than comparable models available on the marketplace; in this case, the product avoids emissions during its use phase, but this benefit is not captured within its life cycle inventory.

Because different methods are used to calculate a company's GHG inventory and avoided emissions, avoided emissions must be reported separately from scope 1, 2, and 3 emissions, and must not be counted toward SBTs, including any scope 3 target.<sup>4</sup>

### Determine how to treat optional scope 3 emissions

The SBTi requires that companies account for all relevant scope 3 emissions categories in their inventory, as per the GHG Value Chain Protocol. Within each relevant category for the company, the minimum boundary of emissions must be accounted for. Companies may

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<sup>4</sup> Please see <https://www.wri.org/publication/estimating-and-reporting-comparative-emissions-impacts-products> for a paper on avoided emissions.

include emissions that are beyond the minimum boundary within a given category. However, these additional emissions will not count towards the emissions coverage for scope 3 targets. As per the SBTi criteria, two thirds of scope 3 emissions must be covered by a target(s).

For example, it is common for some companies to address indirect use-phase emissions, especially if they are significant. Indirect use phase emissions are not within the “minimum boundary” for category 11 (use of sold products) and are listed as “optional.” They are generated by products that only consume energy indirectly during use over their expected lifetime. Examples of such emissions include the washing and dyeing of apparel and the cooking and refrigeration of food products.<sup>5</sup>

If companies have significant optional emissions and have levers to address them, they are encouraged to estimate these emissions and set an optional target on these emissions. However, optional scope 3 emissions will not be counted towards the two thirds boundary. Hence, the reduction of optional emissions will not be counted as progress towards targets on mandatory scope 3 emissions, i.e., emissions within the “minimum boundary.”

### Sector-specific considerations

Companies must also align their science-based targets with the requirements established through sector development work approved by the SBTi and are encouraged to consider additional recommendations. Please visit the [Sector Development](#) section of the SBTi website and Section 9 in the [Target Validation Protocol](#) for information on the sector-specific existing resources.

### Selecting the most ambitious target

In some cases, variation will exist in the minimum target ambition output by different methods for a given company. This is due to the differences in target formulation, as well as variation among the acceptable reduction pathways themselves; for example, different scenarios in the 1.5°C scenario envelope determined by the SBTi vary in linear reduction rate (2020-2035) from 4.2%-6%. Additionally, the minimum ambition required for a sector by the SDA may be more or less ambitious than the absolute contraction rate for a well-below 2°C target.

To help ensure adherence to the carbon budget, companies should use the most ambitious decarbonization scenarios and methods that lead to the earliest reductions and the least cumulative emissions. A company should screen several of the methods and choose the method and target that best drives emissions reductions to demonstrate sector leadership. Method selection may also be influenced by practical considerations, such as the availability of input data for the base year and target year.

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<sup>5</sup> Please see page 38 of the Corporate Value Chain (Scope 3) Accounting and Reporting Standard for more information.

## Set a science-based target: Scope 1 and 2 emissions

### Set target boundaries

SBTs must cover at least 95% of company-wide scope 1 and 2 emissions. Biomass-related emissions are significant for many companies. While the direct emissions of CO<sub>2</sub> from biomass combustion and biodegradation, as well as the GHG removals associated with bioenergy feedstocks, are reported outside of the scopes in a corporate GHG inventory, they shall be included in the target boundary, both when setting a science-based target and when reporting progress against that target.<sup>6</sup> The CH<sub>4</sub> and N<sub>2</sub>O emissions associated with biofuels and biomass combustion shall be reported under relevant scopes.

Similarly, the CO<sub>2</sub> emissions from land use change are reported outside of the scopes and companies are encouraged to include these emissions in their target boundary if they are relevant, when possible. Because methods to calculate land use change as well as bioenergy-related emissions or removals vary widely, companies shall disclose the method used and recalculate these emissions when consensus methods become available.

### Account for scope 2 emissions

Setting and tracking performance against scope 2 targets entails some unique considerations.

#### Using renewable energy to meet SBTs

The [GHG Protocol Scope 2 Guidance](#) (WRI & WBCSD, 2015) defines two approaches for calculating the scope 2 emissions from purchases of renewable energy and other forms of energy:

- The “location-based” approach is designed to reflect the average emissions intensity of grids on which energy consumption occurs and mostly uses grid-average emission factors.
- In contrast, the “market-based” approach is intended to help companies reflect the emissions impacts of differentiated electricity products that companies have purposefully chosen (e.g., supplier-specific emissions rates and power purchasing agreements).

For the purposes of setting SBTs, companies shall choose the results of only one approach for base year emissions reporting and tracking performance. Also, if a company chooses to use the market-based approach, it shall assess all contractual instruments for conformance with the Scope 2 Quality Criteria.<sup>7</sup>

As an alternative to setting percentage-reduction targets on scope 2 emissions, companies may instead set targets on the procurement of renewable electricity. Such procurement

<sup>6</sup> Companies shall also report non-bioenergy related biogenic emissions alongside the inventory.

<sup>7</sup> These criteria are explained in Chapter 7 of the GHG Protocol Scope 2 Guidance.

targets are acceptable if they are in line with procuring 80% of electricity from renewable sources by 2025 and 100% by 2030. Companies that already source electricity at or above these thresholds shall maintain or increase their share of renewable electricity.

### Accounting for purchased heat and steam

The emissions from purchased heat and steam fall under scope 2 in a corporate inventory. However, for the purposes of setting an SBT using the SDA method, companies should model heat- and steam-related emissions as if they were part of their direct (i.e., scope 1) emissions. This is because IEA ETP pathways underlying the SDA methods do not take purchased heat and steam into account under scope 2 emissions.

### Available scope 1 and 2 target-setting methods

Currently, there are two main, publicly available science-based target-setting methods for scope 1 and 2 emissions: the Absolute Contraction Approach and the Sectoral Decarbonization Approach (SDA).<sup>8</sup> This section provides an overview of these two available methods. Please refer to the [Foundations of Science-based Target Setting](#) paper for an in-depth, technical discussion of these topics. A [science-based target setting tool](#) is available for users to model targets using these two methods. This section also describes data inputs and outputs for each method. Because the methods are sensitive to the inputs used, and because errors can propagate throughout the methods, company data should be as accurate as possible.

In general, an SBT method comprises three components:

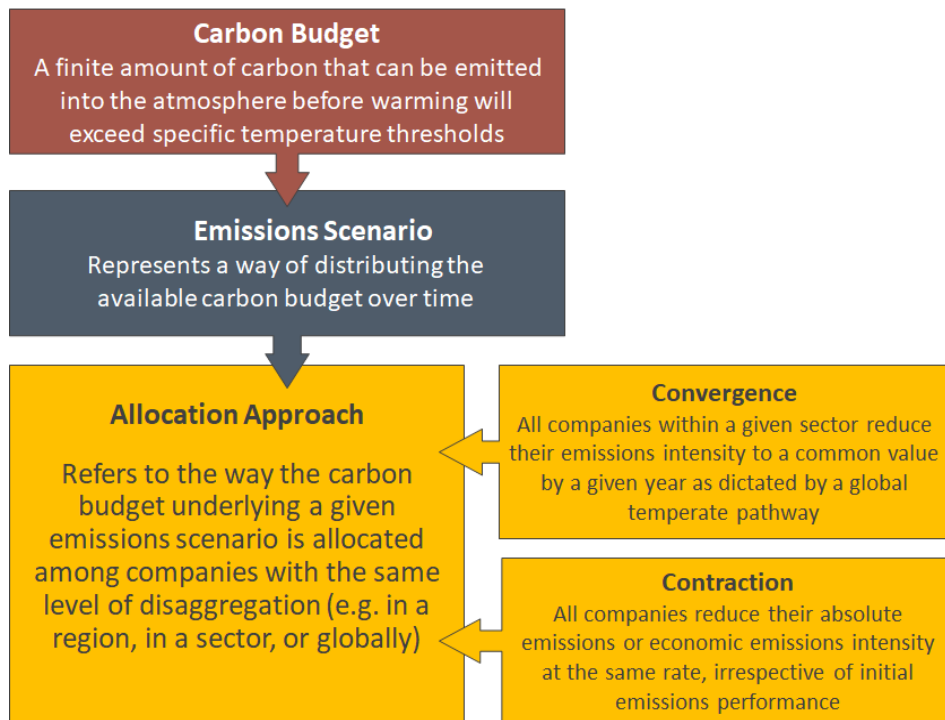
1. A carbon budget;
2. an emissions scenario; and
3. an allocation approach (convergence or contraction).

Methods can vary in terms of each of these components. Figure 2 further describes the three main elements of an SBT method.

<sup>8</sup> Beyond currently available methods, it is expected that new scenarios and methods will be developed for a range of specific sectors. Information on this is posted to the SBTi's website as the methods are made publicly available and/or validated by the initiative.



Figure 2. Main Elements of Methods for Setting SBTs



### Absolute Contraction

Absolute Contraction is a method for setting absolute targets that uses contraction of absolute emissions. Through this approach, all companies reduce their absolute emissions at the same rate, irrespective of initial emissions performance. Consequently, an absolute emissions reduction target is defined in terms of an overall reduction in the amount of GHGs emitted to the atmosphere in the target year, relative to the base year (e.g., reduce annual GHG emissions 35% by 2025, from 2018 levels).

The minimum reduction required for targets in line with well-below 2°C scenarios is 2.5% in annual linear terms. Companies, particularly those in developed countries, are strongly encouraged to adopt targets with a 4.2% annual linear reduction to be aligned with limiting warming to 1.5°C.

This method is a simple, straightforward approach to set and track progress toward targets that is applicable to most sectors. Table 2 summarizes the inputs and outputs of the method.

*Table 2. Characteristics of the Absolute Contraction Approach*

Method	Company Input	Method Output
Absolute emissions contraction	<ul style="list-style-type: none"> <li>• Base year</li> <li>• Target year</li> <li>• Base year emissions, disaggregated by scope</li> </ul>	Overall reduction in the amount of absolute GHGs emitted to the atmosphere by the target year, relative to the base year

#### Examples of absolute targets

Ford Motor Company commits to reduce absolute scope 1 and scope 2 GHG emissions 76% by 2035 from a 2017 base- year.

Trane Technologies commits to reduce absolute scope 1 and 2 GHG emissions 50% by 2030 from a 2019 base year.

### Expressing Absolute Contraction targets in intensity terms

Depending on reporting and communication preferences, a company can choose to translate the absolute reduction of its target into intensity terms (e.g., use base year and projected target year production data to convert an absolute target into an intensity target per unit of production). For instance, companies in sectors where sector-specific pathways are not yet available can set an intensity target based on their main product output. Companies can use an economic or physical metric most representative of the companies' profiles to formulate targets. With such target formulation, companies need to ensure that the absolute emissions reduction is in line with the Absolute Contraction Approach. This applies to targets formulated using the GEVA method, described in the section entitled "Economic intensity contraction."

#### Example: Targets set using other formulations

Frasers Property Australia commits to reduce scope 1 and 2 GHG emissions 50% per square meter by 2028 from a 2017 base year. Frasers Property Australia also commits to reduce scope 3 GHG emissions 25% per square meter by 2028 from a 2017 base year.

### Sectoral Decarbonization Approach (SDA)

The SDA is a method for setting physical intensity targets that uses convergence of emissions intensity. An intensity target is defined by a reduction in emissions relative to a specific business metric, such as production output of the company (e.g., tonnes CO<sub>2e</sub> per tonne product produced). The SDA assumes global convergence of key sectors' emissions intensity by 2050. For example, the emissions intensity of steel production in China, the U.S.,

and Brazil is assumed to reach the same level by 2050, regardless of its current diversity.<sup>9</sup> Regional pathways have not been incorporated into this method.

The SDA uses the B2DS scenario from the International Energy Agency (IEA) report “Energy Technology Perspectives (ETP) 2017,” which comprises emissions and activity projections used to compute sectoral pathways aligned with limiting warming to well-below 2°C (IEA, 2017). Due to the lack of 1.5°C scenario data from IEA, SBTi currently does not provide an SDA option for 1.5°C targets, except in the case of the power generation sector. The [SBTi's](#) 1.5°C pathway for the power generation sector is based on an envelope of IPCC scenarios where the Low Energy Demand scenario (LED), referred to as P1 in IPCC SR15, is used as an upper limit.

Currently, the SDA method provides sector-specific pathways for the following homogenous and energy-intensive sectors:<sup>10</sup>

Available in the [Science-Based Target Setting Tool](#):

- Power Generation
- Iron & Steel
- Aluminum
- Cement
- Pulp & Paper
- Services/Commercial Buildings

Available in the [SDA Transport Tool](#):

- Passenger and Freight Road Transport
- Road Vehicle Manufacturers

The minimum target ambition modelled by both tools, expressed in intensity terms, varies by company base year emissions intensity, projected activity growth, and sectoral budgets. Companies can use the relevant SDA pathways to calculate an intensity target in the selected target year. In addition to a reduction in emissions intensity of the company (e.g., tonnes CO<sub>2</sub>e per MWh), the tools also provide absolute reduction targets as an output, as outlined the summary in Table 3.<sup>11</sup> The SDA has limited applicability to other scope 3 categories (see Box 2. Applicability of the SDA in setting scope 3 targets).

<sup>9</sup> Each sectoral budget is maintained, to the extent the sum of sectoral activity does not go beyond that projected for the scenario (for homogeneous sectors) and that no new businesses are created.

<sup>10</sup> The SDA sectors are drawn from the IEA. An appendix in the SDA user guidance maps the IEA sectors against common industrial classification systems: <http://sciencebasedtargets.org/wp-content/uploads/2015/05/Sectoral-Decarbonization-Approach-Report.pdf>.

<sup>11</sup> A previous target setting tool specific to SDA calculated SBTs for a general “Other Industry” category that covers sectors other than the ones listed above, including construction industry and manufacturing sectors (e.g., food and beverage, electronics, machinery). Please note that the “Other Industry” pathway has been disabled in

Table 3. Characteristics of the Sectoral Decarbonization Approach

Method	Company Input	Method Output
Sectoral Decarbonization Approach	<ul style="list-style-type: none"> <li>• Base year</li> <li>• Target year</li> <li>• Base year emissions, disaggregated by scope</li> <li>• Activity level in the base year (e.g., building floor area, distance travelled, etc.)</li> <li>• Projected change in activity by target year</li> </ul>	A reduction in emissions relative to a specific production output of the company (e.g., tonnes CO <sub>2</sub> e per MWh) and its translation to absolute emissions reductions

Example: Physical intensity targets set using SDA

Taiwan cement manufacturer Taiwan Cement Corp. (TCC) commits to reduce scope 1 GHG emissions 11% per ton of cementitious materials by 2025 from a 2016 base year. Taiwan Cement also commits to reduce scope 2 GHG emissions 32% per ton of cementitious materials within the same timeframe.

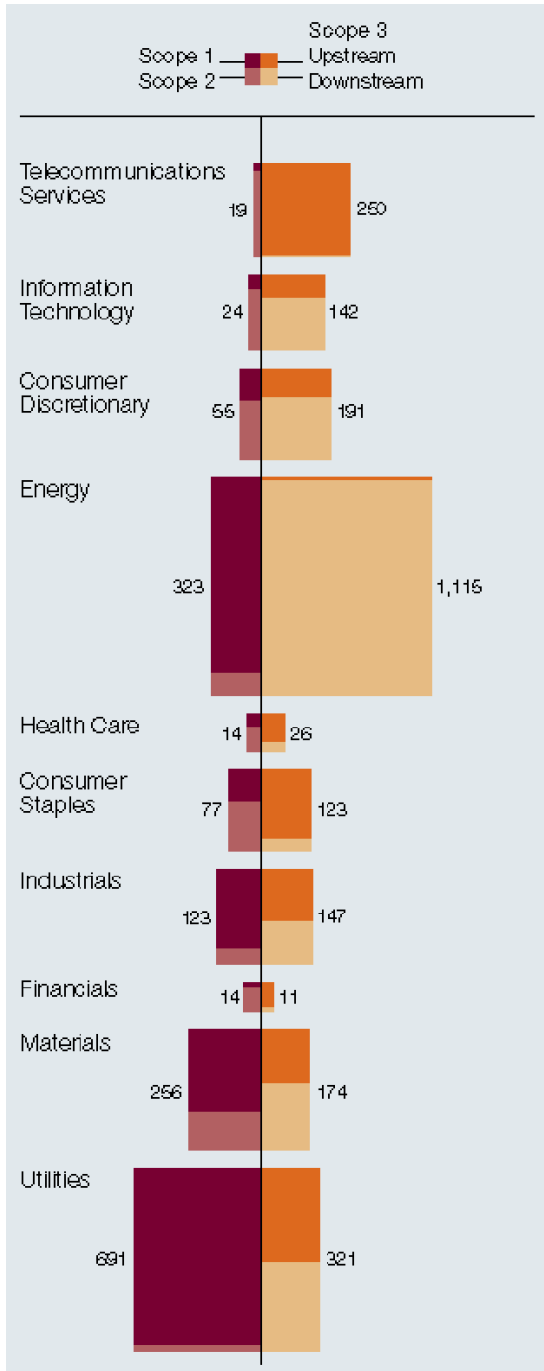
## Set a science-based target: scope 3 sources

When companies set targets, they initially focus on scope 1 and 2 emissions because they are generally more able to influence these emissions. However, a company’s scope 3 emissions are often much greater than its scope 1 and 2 emissions (Figure 3), and ambitious scope 3 targets can play an integral part in a company’s GHG reduction strategy, allowing it to demonstrate performance and leadership, manage supply chain risks and opportunities, and address the needs of stakeholders. Scope 3 targets also help companies to better understand whether current business models are compatible with a low-carbon future.

While scope 3 emissions are important, they are often the most challenging component of a company’s emissions to address. Key steps in setting scope 3 targets as part of an SBT strategy include constructing a scope 3 inventory to assess whether an ambitious scope 3 target should be set and, if so, which scope 3 emissions categories should be targeted. Subsequent steps include identifying the appropriate type(s) of target and level of ambition for these categories.

the new Science-Based Target Setting Tool. Companies in these sectors should use the absolute emissions contraction approach to set targets.

Figure 3. The relative magnitude of scope 1, 2, and 3 emissions, by sector



Notes: Graph based on CDP data for S&P 500 firms.

Source: CDP 2013.

## Conduct a scope 3 inventory

Companies shall develop a complete scope 3 inventory, which is critical for identifying emissions hotspots, reduction opportunities, and areas of risk up and down the value chain. The [GHG Protocol Corporate Value Chain \(Scope 3\) Accounting and Reporting Standard](#) (WRI & WBCSD, 2011), together with the [Scope 3 Calculation Guidance](#), provide detailed guidance on how to complete a scope 3 inventory. The Scope 3 Standard defines 15 distinct categories of upstream and downstream emissions sources and requires companies to include all relevant categories in an inventory, based on such criteria as the magnitude of emissions or the level of influence exerted over the categories. See Chapter 7 of the Scope 3 Standard for further details.

A useful approach to calculating scope 3 emissions is to first calculate a high-level screening inventory. Such an inventory can be used to directly set a target or to identify high-impact categories for which more accurate data are needed. Over time, companies should strive to develop complete inventories and improve data quality for high-impact categories (e.g., collect primary data) to better track progress against targets.

Box 1 describes the Scope 3 Evaluator, a tool useful in constructing screening inventories.

### *Box 1. The Scope 3 Evaluator Tool*

The GHG Protocol worked with Quantis, a consultancy, to develop a free scope 3 screening tool. This tool provides users with a simple interface to make a first, rough approximation of their full scope 3 inventory, regardless of their organization type and size. The tool leads users through a series of questions about their organizational structure and their activities, such as the purchase of goods and services, use of fuels, transportation of materials, and more.

Linking these inputs to a combination of economic input-output and process life cycle inventory data, the tool provides the user with a scope 3 inventory which can be used as an initial basis for identifying reduction areas, public reporting, and informing future efforts to produce a more accurate emissions inventory. Companies should work to collect primary data for categories shown to be a significant percent of their total Scope 3 inventory. For more information, see <https://ghgprotocol.org/scope-3-evaluator>.

## Scope 3 data quality

Companies are likely to face challenges in collecting data and ensuring data quality for scope 3 sources because these sources are not under the reporting company's ownership or control. These challenges include:

- Reliance on value chain partners to provide data (e.g., for calculating the emissions from purchased goods and services)

- Lesser degree of influence over data collection and management practices
- Lesser degree of knowledge about data types, data sources, and data quality
- Broader need for secondary data (i.e., data that are not specific to a company's value chain)
- Broader need for assumptions and modeling (e.g., for calculating the emissions from the use of sold products)

In general, companies should select data that are the most complete, most reliable, and most representative in terms of technology, time, and geography. Companies should collect high-quality ("primary") data from suppliers and other value chain partners for scope 3 activities deemed most relevant and targeted for GHG reductions. Companies' own marketing and sales departments may also be able to provide primary data on product use phase and end-of-life activities. Secondary data are acceptable but do limit a company's ability to track performance. Secondary data are therefore better suited for scope 3 categories that are not significant. Chapter 7 of the [Scope 3 Standard](#) provides further guidance on data quality issues.

If scope 3 emissions compose over 40% of total scope 1, 2, and 3 emissions, companies shall develop ambitious scope 3 targets that collectively cover at least two-thirds scope 3 emissions.

### Identify which scope 3 categories should be included in the target boundary

Using a scope 3 inventory, companies can identify which categories should be included in the boundary of a scope 3 target(s) to meet the two-thirds threshold. Across sectors, category 1 (purchased goods and services) and category 11 (use of sold products) account for the majority of scope 3 emissions (CDP 2016). These categories will therefore be integral to many companies' targets. However, the relative importance of different scope 3 categories will vary by sector. Scope 3 categories likely to be important (in terms of emissions magnitude) for companies in specific sectors include:

- Automotive: Use of sold products
- Chemicals: End of life treatment of sold products
- Consumer Packaged Goods: Purchased goods and services
- Electronics: Use of sold products
- Food Processing: Purchased good and services
- Gas Distribution and Retail: Use of sold products
- Logistics: Upstream transportation and distribution
- Oil & Gas: Use of sold products

### Available scope 3 target-setting methods

Scope 3 targets can be framed as absolute targets, emission intensity targets, or supplier or customer engagement targets, as described in the SBTi Criteria and Target Validation

Protocol. This section provides an overview of options available for companies to formulate their scope 3 targets.

### Absolute Contraction and SDA

Companies can use the Absolute Contraction Approach and SDA to set targets on one or more of their scope 3 categories. The mechanics of these two methods are described in detail in the section entitled “Available scope 1 and 2 target-setting methods.” The use of SDA may be limited for setting scope 3 targets, as described in Box 2.

Considering the challenging nature of reducing scope 3 emissions, the minimum ambition for scope 3 targets set using these two approaches is a 2°C (minimum 1.23% annual linear reduction under Absolute Contraction and 2°C alignment option for SDA pathways).<sup>12</sup> While 2°C is the minimum level of ambition for scope 3 targets, companies are encouraged to pursue greater efforts toward a well-below 2°C or a 1.5°C trajectory (minimum 4.2% annual linear reduction).

#### *Box 2. Applicability of the SDA in setting scope 3 targets*

Companies should be aware of two limitations in using the SDA to set absolute or emissions intensity scope 3 targets. Please note that the content in this box does not apply to the SDA transport method, which is specifically applicable to several scope 3 categories. One limitation is that it can only be used for scope 3 targets when the GHG emissions of tier 1 suppliers are significant, relative to those of suppliers further removed from the company, and when scope 1 and 2 data can be obtained from the tier 1 suppliers. In practice, this means the SDA is most appropriate for buildings (leased assets and franchises) and upstream or downstream transportation and distribution.

The second limitation is that the SDA can limit options for tracking reductions in certain scope 3 categories, depending on how comprehensive a company’s overall scope 3 target is. For example, a construction company could set an intensity target for purchased steel using the iron and steel pathway in the SDA. Because this pathway does not support material switching to less GHG-intensive steel substitutes, the company could only meet this target by reducing the GHG-intensity of purchased steel. This problem can be circumvented by setting a target (or targets) for all purchased goods and services.

### 2% annual linear physical reduction

Companies can also drive physical intensity reduction to cap absolute emissions at a base year level and achieve a physical intensity reduction at a minimum rate of 2% in annual linear

<sup>12</sup> Exceptions include scope 3 targets for new vehicle manufacturers and targets covering emissions from fossil fuels that are sold, transmitted, or distributed by the company. The minimum ambition in these cases is well-below 2°C.



terms. For example, if a company commits to reduce GHG emissions per pair of shoes 30% by 2030 from a 2017 base year, this is a  $30 \div 13 = 2.31\%$  intensity reduction in annual linear terms and meets the minimum physical intensity improvement requirement.

### Economic intensity contraction

Greenhouse Gas Emissions per Value Added (GEVA) is a method for setting economic intensity targets using the contraction of economic intensity. Targets set using the GEVA method are formulated by an intensity reduction of tCO<sub>2</sub>e/\$ value added.<sup>13</sup> Under the GEVA method, companies are required to reduce their GEVA by 7% per year (compounded). The 7% year-on-year reduction rate is based on an absolute emissions reduction of about 75% by 2050 from 2010 levels. Based on recent economic projections and estimates of historic emissions, the 7% rate is broadly compatible with high-confidence IPCC (RCP2.6) pathways, and its ambition is intermediate between the IEA 2DS and B2DS pathways under idealized conditions that are expounded below (ETP, 2017; SBTi, 2019).

The 7% year on year reduction rate must be applied on the companies' Value Added in the base year, which can be calculated using one of the formulas below:

- Value added = sales revenue - the cost of goods and services purchased from external suppliers
- Value added = gross profit (in U.S. accounting, often available in the annual financial statement)
- Value added = operating profit = earnings before interest and depreciation (EBITDA) + all personnel costs<sup>14</sup>

Unlike the Absolute Contraction and SDA methods, GEVA only maintains a global emissions budget to the extent that the growth in value added of individual companies is equal to or smaller than the underlying economic projection. The differentiated growth of companies and sectors is not balanced by GEVA (and other economic intensity target-setting methods); thus, the currently accepted GEVA value depends on idealized conditions where all companies are growing at the same rate, equal to that of GDP, and GDP growth is precisely known. For these reasons, and due to the volatility of economic metrics, economic intensity target-setting methods are considered less robust than absolute and physical intensity methods. GEVA is therefore only applicable for scope 3 target-setting. See Table 4 for a summary of the method.

<sup>13</sup> Please note that value added is the only economic metric allowed for the application of GEVA.

<sup>14</sup> Personnel costs should include payment to management and board members (Randers 2012).

Table 4. Characteristics of the GEVA approach

Method	Company Input	Method Output
GHG Emissions per Value Added	<ul style="list-style-type: none"> <li>• Base year</li> <li>• Target year</li> <li>• Base year emissions, disaggregated by scope</li> <li>• Value added in the base year</li> <li>• Projected change in value added by target year</li> </ul>	A reduction in emissions relative to financial performance of the company (e.g., tonne CO <sub>2</sub> e per value added).

Example: Economic intensity target set using GEVA

Technical athletic apparel company lululemon also commits to reduce scope 3 GHG emissions from purchased goods & services and upstream transportation & distribution 60% per unit of value added by 2030 from a 2018 base year.

**Supplier or customer engagement targets**

Supplier or customer engagement targets may be valuable if a company has yet to identify levers for more specific reduction opportunities amongst its value chain partners and/or if it has mostly indirect spend and therefore does not spend enough on individual suppliers to support collaborative reduction efforts. Supplier engagement targets may help to drive reduction behaviors that benefit other customers of the same supplier.

Engagement targets may be set around any relevant upstream or downstream scope 3 category where engagement efforts could lead to reduction in emissions. Companies can identify which suppliers and customers to include under the target based on spend and/or emissions impact. Engagement targets may alternately focus on “critical suppliers” or “strategic suppliers” that the company has already identified based on a variety of factors, such as operational risk. Spend data and critical supplier lists are advantageous when they can reliably serve as a proxy for leverage over suppliers. However, the biggest suppliers by spend are not always the biggest GHG emitters, so companies should make sure that, together with any additional scope 3 targets, the engagement target covers at least two-thirds of total scope 3 emissions.

Example: Supplier engagement target

Fisher & Paykel Healthcare Corporation Limited also commits that 87% of suppliers by spend covering purchased goods and services and the use of sold products will have science-based targets by FY2024.

Various other considerations are important when setting engagement targets. Importantly, engagement targets should result in timely emissions reductions at suppliers and customers. To this end, targets shall be fulfilled within a maximum of five years from the date on which the target is submitted to the initiative for validation. Also, suppliers and customers shall set SBTs for their scope 1 and 2 emissions, at a minimum, where emissions data tend to be more available. Over time, scope 3 targets should also be set if suppliers' scope 3 emissions are significant and as data become more available. Suppliers should also report progress on an annual basis.

Finally, supplier engagement targets are not recommended when the majority of category 1 emissions come from tier 2 suppliers or suppliers even further removed from the reporting company, whom companies may not be capable of exerting influence upon.

### Determine whether to set a single target or multiple targets

Companies can choose to set multiple, category-specific targets or a single target covering all relevant scope 3 categories. They may also choose to set a single target covering total scope 1, 2, and 3 emissions. Each type of target boundary has advantages and disadvantages (see Table 5).

Table 5. Advantages and disadvantages of different target boundaries covering scope 3 emissions

Target Boundary	Examples	Advantages	Disadvantages
A single target for total scope 1, 2, and 3 emissions	Latin American wine producer Viña Concha y Toro commits to reduce absolute scope 1, 2 and 3 GHG emissions 55% by 2030.	<ul style="list-style-type: none"> <li>Ensures more comprehensive management of emissions across the entire value chain</li> <li>Simple to communicate to stakeholders</li> <li>Does not require base year recalculation for shifting activities between scopes (e.g., outsourcing)</li> </ul>	<ul style="list-style-type: none"> <li>May provide less transparency for each scope 3 category</li> <li>Requires the same base year for the different scopes, which may be difficult if scope 1 and 2 base years have already been established</li> </ul>
A single target for total scope 3 emissions	Siemens AG also commits to reduce absolute scope 3 GHG emissions 15% by 2030 from a 2019 base year.	<ul style="list-style-type: none"> <li>Ensures more comprehensive GHG management and greater flexibility on how to achieve GHG reductions across all scope 3 categories (compared to separate targets for selected scope 3 categories)</li> <li>Relatively simple to communicate to stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>May provide less transparency for each scope 3 category</li> <li>May require base year recalculation for shifting activities between scopes (e.g., outsourcing)</li> </ul>
Separate targets for individual scope 3 categories	Best Buy also commits to reduce absolute scope 3 GHG emissions from use of Sold Products 20% by	<ul style="list-style-type: none"> <li>Allows customization of targets for different scope 3 categories based on different circumstances</li> <li>Provides more transparency for each scope 3 category</li> </ul>	<ul style="list-style-type: none"> <li>More complicated to communicate to stakeholders</li> <li>May require base year recalculation for outsourcing or insourcing</li> </ul>



WORLD  
RESOURCES  
INSTITUTE



Target Boundary	Examples	Advantages	Disadvantages
	<p>2030 from a 2017 base year.</p> <p>Eneco commits to reduce absolute scope 3 emissions from use of sold products 15% by 2025 from a 2015 base year.</p>	<ul style="list-style-type: none"> <li>• Provides additional metrics to track progress</li> <li>• Does not require base year recalculations for adding additional scope 3 categories to the inventory</li> <li>• Easier to track performance of specific activities</li> </ul>	<ul style="list-style-type: none"> <li>• May allow increases in absolute emissions and/or emissions intensity from other categories, unless those categories also have their own targets</li> </ul>

## Combining multiple target-setting approaches

Companies may also use various target setting approaches and aggregate the modelled target results into one single target, expressed in a single unit. For instance, a company may wish to set one single scope 3 target covering multiple categories for the ease of communication. The company may use SDA for scope 3 categories where sector pathways are available. For instance, it may use the SDA transport tool for category 4 (upstream transportation and distribution). For the rest of the categories, the company may use the Absolute Contraction Approach.

To combine the results into one single target, the company should use the absolute emissions reduction output in the SDA tool. The company should sum up the target year emissions in category 4 as an output of the SDA tool and the target year emissions of all other categories modelled under the Absolute Contraction Approach. It should then proceed to calculate the percentage reduction in absolute emissions from base year to target year of all categories. Together with base year, target year, scope, and optionally category information, the percentage reduction figure is used to define the combined target.

## Types of targets that are unsuitable to be part of an SBT

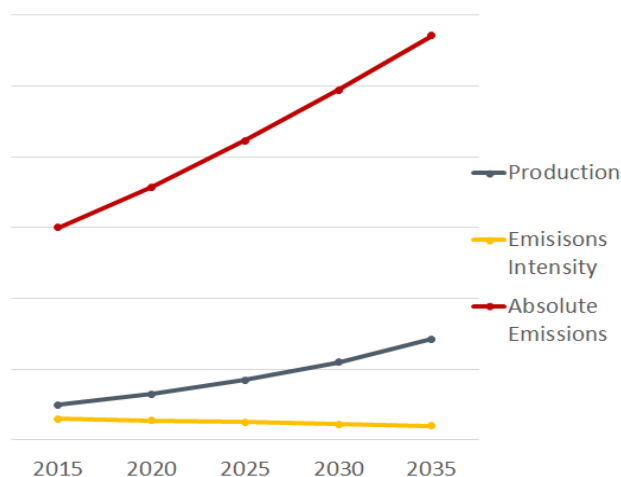
Certain other types of targets shall not be set because of the difficulty in establishing whether these targets lead to the reductions expected of an absolute, intensity or engagement target. In particular, companies shall not set targets to reduce emissions by a specified mass of GHGs (for example, “to reduce emissions by 5 million tonnes by 2030”) or targets that benchmark performance against sector average values. This is because such targets are not transparent about changes in emissions performance. Also, sector-benchmarked targets may also change over time with changes in sector performance, reducing the ability to track long-term changes in performance.

## Benefits and drawbacks of different types of targets

### Comparing absolute targets and intensity targets

Absolute and intensity targets each have advantages and disadvantages. Intensity targets do not necessarily lead to reductions in absolute emissions. This is because increases in business output can cause absolute emissions to rise even if efficiency improves on a per unit basis (please see Figure 4 for an illustration of this point).

Figure 4. Intensity reduction targets can lead to absolute emissions increases when production levels increase



Absolute targets also have some shortcomings. They do not allow comparisons of GHG intensity amongst peers, and they do not necessarily track with efficiency improvements, as reported reductions can result from declines in production output, rather than improvements in performance.

Example: Combination of absolute and intensity targets

H&M group commits to reduce absolute scope 1 and 2 GHG emissions 40% by 2030 from a 2017 base-year. H&M group also commits to reduce scope 3 GHG emissions from purchased raw materials, fabric and garments 59% per piece by 2030 from a 2017 base-year.

**Comparing physical intensity targets and economic intensity targets**

Physical intensity targets and economic intensity targets also have their own strengths and limits. Physical intensity metrics (e.g., tonnes GHG per tonne product or MWh generated) are best suited for use within sectors that create a uniform product (e.g., steel or cement sectors) and may be less suitable for companies that generate a diverse product mix.

In general, economic intensity metrics (e.g., tonnes GHG per unit value added) can be used to normalize emissions for sectors whose products vary a lot and are difficult to directly compare against each other (e.g., retail or chemical sectors).

Economic intensity targets may only be appropriate for sectors with limited fluctuations in product prices over time, where growth in emissions is often tied to economic growth of the

company. In other words, if a company sells more products, more emissions are produced to make those products.

However, economic intensity indicators are subject to a number of variables that can lead to apparent changes in a company's carbon intensity that are not linked to its environmental performance, but rather with extrinsic factors. Examples of this include the fluctuation of commodity prices, inflation, or changes in the relative contribution of different business activities to a company's bottom line. Economic metrics may not be useful for tracking emissions performance. Companies should use absolute emissions contraction or develop intensity targets in line with absolute emissions contraction.

Over time, the SBTi's analysis of and experience assessing targets using economic allocation and intensity methods revealed that they can often lead to high absolute increases in emissions when used by fast-growing companies and therefore don't support the goals of the initiative. For example, a company with a compound annual growth rate of 10%, would be allowed to *increase* their absolute emissions by 48% between 2015 and 2030 when modelling their 1.5°C aligned targets using one of the economic-intensity target-setting methods discontinued by the SBTi. For comparison, a company using the Absolute Contraction method would be expected to *reduce* its absolute emissions by 63% over the same timeframe. SBTi therefore does not recommend that companies set economic intensity targets for their operational emissions (scope 1 and 2) where they have direct influence over emissions reduction. Considering the difficulty of measuring and reducing scope 3 emissions, economic intensity targets are accepted for scope 3.<sup>15</sup>

Examples of sectors with volatile pricing:

- A pharmaceutical company's prices for certain drugs may fluctuate based on demand, patents, or regulatory factors.
- The value added (or gross profit) of a luxury brand company can be related to marketing and consumer willingness to pay for a premium product, introducing variability into pricing.
- The price of many commodities (e.g., metals and agricultural commodities) is set by trades placed on commodity exchanges.

In addition to absolute or intensity emissions reduction targets, supplier or customer engagement targets can enable early actions from companies with limited data or information on what reduction levers are most suitable. However, as companies tend to focus on their suppliers' or customers' scope 1 and 2 emissions as the most straightforward starting point,

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<sup>15</sup> Economic intensity targets are only allowed for scope 1 and 2 when they translate to sufficient absolute emissions reductions in line with the Absolute Contraction approach. For more information, see section "**Expressing Absolute Contraction targets in intensity terms**".



the scope of such targets can be limited at least in the early engagement phase. For more information, see section “Supplier or customer engagement targets”.

Table 6 summarizes the main advantages and disadvantages of these four types of targets.

Table 6. The main advantages and disadvantages of absolute, physical intensity, economic intensity, and engagement targets.

	Absolute Target	Physical Intensity Target	Economic Intensity Target - Recommended for Scope 3 only	Supplier or Customer Engagement target - Scope 3 only
Advantages	<ul style="list-style-type: none"> <li>Relatively low data requirement</li> <li>Designed to reduce the quantity of GHGs emitted to the atmosphere by a specific amount.</li> <li>Demonstrates strong ambition for target communications.</li> <li>Environmentally robust and more credible to stakeholders as it entails a commitment to reduce total GHGs by a specified amount, thus also making the contribution to global emissions reductions efforts predictable and transparent.</li> </ul>	<ul style="list-style-type: none"> <li>Reflects GHG performance and efficiency improvements independent of business growth or decline.</li> <li>Can be more in line with emissions reduction strategies and internal progress tracking.</li> <li>May increase the comparability of GHG performance amongst companies (assuming that inventory consolidation approaches used are the same and product mixes are highly similar).</li> </ul>	<ul style="list-style-type: none"> <li>For companies that generate diverse products and services, economic units can be used as the denominator to formulate intensity targets</li> <li>Provides more flexibility for companies that are prioritizing growth.</li> </ul>	<ul style="list-style-type: none"> <li>Relatively low data requirement</li> <li>Can enable early actions from companies with limited data or information on suitable reduction levers</li> <li>Given the global nature of companies' value chains, engagement targets can scale up adoption of science based emissions reduction targets globally</li> </ul>

Disadvantages	<ul style="list-style-type: none"> <li>• Does not allow comparisons of GHG intensity/efficiency to that of peers.</li> <li>• Reported reductions can result from declines in production/output, rather than improvements in performance.</li> <li>• Target may be more challenging to achieve if the company grows and growth is linked to GHG emissions.</li> </ul>	<ul style="list-style-type: none"> <li>• Higher data requirement given that physical activity data may not always be readily available</li> <li>• Risk of being seen as less credible to stakeholders because absolute emissions may rise even if intensity decreases (e.g., because output increases more than GHG intensity decreases).</li> <li>• Companies with diverse operations may find it difficult to define a single physical intensity common business metric.</li> </ul>	<ul style="list-style-type: none"> <li>• Challenging to track progress if companies experience financial losses in certain years</li> <li>• Economic intensity indicators are subject to extrinsic factors that can lead to apparent changes in a company's carbon intensity that are not linked to its environmental performance (e.g., fluctuation of commodity prices, inflation, and etc.)</li> <li>• May not correlate with emissions tied to physical production processes, especially for sectors with high price fluctuations.</li> <li>• Can be less environmentally robust due to the volatility of economic metrics and method reliance on "idealized" conditions (e.g. GEVA targets).</li> </ul>	<ul style="list-style-type: none"> <li>• The scope of such targets can be limited if companies focus on scope 1 and 2 emissions of their value chain partners</li> <li>• As the target metric is percentage of suppliers or customers engaged, the amount of emissions reduction is less clear than emissions-based targets</li> <li>• Available strategies to achieve targets are limited given that the target focuses on engagement</li> </ul>
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	Absolute Target	Physical Intensity Target	Economic Intensity Target - <i>Recommended for Scope 3 only</i>	Supplier or Customer Engagement target - <i>Scope 3 only</i>
			<ul style="list-style-type: none"> <li>For economic intensity targets that lead to sufficient absolute emissions reduction given the growth projection provided at the validation stage, the actual emissions reduction impact is unclear if growth trajectory is not in line with projected growth in reality.</li> </ul>	

## Step 3: Submit your target for validation

Official validation of a company's target ensures that it meets a set of rigorous criteria defined by the SBTi. It is the company's responsibility to make the case that the target is science-based and clearly provide appropriate information. The section below provides an overview of the validation process.

### Submit the target for validation

#### Target submission form

Companies that wish to submit targets to be evaluated should download the latest [Target Submission Form and Guidance](#) and fill it out as clearly, completely, and accurately as possible. It is highly recommended that companies consult the guidance available to complete the form, including the target language guidance, before filling out the form. Additional documents should be attached only if they are directly related to the information requested. Companies should reference the specific page numbers, figures, or text that is being referred to in accompanying documents. Missing, unclear, or erroneous information will result in the validation process being delayed.

It is the company's responsibility to ensure the integrity of the information provided. Once the form is completed, companies should send the submission form together with any supporting documents in one email to [targets@sciencebasedtargets.org](mailto:targets@sciencebasedtargets.org). The submission form should be submitted in **Word format**.

#### How company information is treated

The SBTi safeguards the confidentiality of all information provided by the company to assess its targets. This means that information provided will be used in accordance with the target validation service contract that companies are asked to sign before target assessments commence.

### The target validation service

Preliminary validations, offered as a separate service before July 2020, have been combined with our official validation process to create a single validation option. Feedback can be delivered for certain specific scopes or for all scopes, and companies can indicate that their submission is a partial submission when completing the [Target Submission Form](#). For example, if a company would like to receive feedback on their proposed scope 1 and 2 target while they internally develop their scope 3 inventory, there is an option to select a validation of "scopes 1 and 2 only." Please note that if a company does not select "All Scopes (complete submission)," its submitted targets will not be officially approved but specific feedback on the portion that was submitted will be provided. Table 7 outlines various aspects of the validation process.

The target validation service costs USD 4950 (+ applicable VAT), which includes up to two target assessments. Subsequent resubmissions cost USD 2490 (+ applicable VAT) per submission. The results of the validation will be ready within 30 business days from the date the contract has been fully executed by both parties and provided that any queries for further information or clarification sent by the validation team are resolved within 2 business days.

Please note that resubmissions only include one target assessment. The resubmission price is available to companies that 1) have submitted at least once using the paid target validation service, or 2) already have approved targets but need to update them.

Companies headquartered in developing countries and emerging economies<sup>16</sup> are eligible for a fee exemption on request. The service offering is summarized in Table 7 below.

*Table 7. Target validation service summary*

Item	Target validation service
Who can be assessed	Any company that passes the initial screening. Note that the cost for companies headquartered in developing countries and economies in transition can be waived
Scope	Evaluation of a company's target(s) against all SBTi criteria
Target Submission Form	Submission form must be completed as required per the validation requested, indicating if the company is using the full service or the resubmission option
Reviewed by	SBTi Target Validation Team; escalation to Technical Working Group or Steering Committee for special cases
Level of feedback provided	Detailed feedback is provided for each round of assessment through: <ul style="list-style-type: none"> <li>• A comprehensive target validation report including recommendations to address non-compliances, if applicable</li> <li>• An official decision letter</li> <li>• Up to 60 minutes of feedback conversations with a technical expert from the SBTi, upon request and prioritized for companies who are not approved</li> </ul>
Turnaround times	Official decision letter and target validation report within 30 working days from the full execution of the validation service terms & conditions
Validity of decision	Approved targets modelled with an old version of tool(s)/method(s) will be accepted in a target submission only within six months after the issuance date of the most recent tool(s)/method(s). After that period, the targets must be recalculated using the new tool/method for submission.
Communications	Companies are assigned an opt-out publication date for the SBTi website one month from their approval date (when deliverables were sent). This is

<sup>16</sup> As defined by the Department of Economic and Social Affairs of the United Nations Secretariat in the World Economic Situation and Prospects 2018. See [FAQs](#) for more information.

Item	Target validation service
	communicated in their approval email. However, should this date not be agreed upon, companies must announce approved targets publicly within six months of the approval date.

## Validation process

### Process overview

After the target is submitted, the target validation process follows a multi-step process as described in Section 3.2 of the Target Validation Protocol and outlined in Figure 5 below.

Figure 5. Overview of the target validation process



For processes and timelines regarding validations for CDP scoring, companies can refer to CDP’s [Technical Note](#) on SBTs. Targets need to be submitted by May 15<sup>th</sup>, 2021 in order to count for CDP leadership points should the target be approved.

## Step 4: Announce the target

When the official approval decision is sent, the SBTi will suggest a target publication date roughly a month from receipt of the approval. If companies would like to request a different publication date, they are welcome to do so, but the target must be announced within six months of approval to remain valid. A “Welcome Pack” will also be sent to the company, which outlines how the target can be showcased/ communicated, how the SBTi logo may be used, and how the SBTi approval may be referenced. Once the targets are published, the company will be listed as a company with an “approved target” on our [Companies Taking Action webpage](#) as well as on our partners’ websites at [We Mean Business](#) and [CDP](#). Companies who are engaging in the UN Global Compact will also be recognized on this [website](#). The SBTi website is updated with new commitments and targets on a weekly basis.



## Step 5: Disclose your progress

Following approval, companies should disclose emissions and progress against targets annually.

### Decide where to disclose

Setting an SBT can set apart a company as a leader and so it is in the company's interest to disclose their target in a place that is easy to find, such as on the company's sustainability webpage. Company reports (e.g., sustainability reports, Corporate Social Responsibility reports, annual reports, and strategic plans) are also good platforms upon which to periodically report on progress and integrate this information with the other activities of the company.

The Global Reporting Initiative (GRI)<sup>17</sup> provides a widely used framework for reporting environmental, social, and economic performance and impacts. SBTs and reduction efforts can be included in GRI reports although they may not be highlighted to the same degree that a separate webpage or company report would afford.

CDP's Climate Change Questionnaire<sup>18</sup> is also a well-known public resource for reaching large external audiences. CDP provides a platform to disclose climate leadership to investors, purchasers, and governments. CDP also communicates SBTs to the NAZCA platform,<sup>19</sup> which tracks significant commitments made by "non-state actors," including companies, as part of the UNFCCC's Action Agenda.

### Follow guiding reporting principles

It is essential to disclose all pertinent aspects of the target so that the audience can fully understand its context, implications, and nuances. The [GHG Protocol Corporate Standard](#) defines five overarching principles that should guide the development of corporate GHG inventories. These same principles should also be used to describe the target and report on progress.

- **Relevance:** Ensure the target appropriately reflects the GHG emissions of the company and serves the decision-making needs of the users – both internal and external to the company.
- **Completeness:** Account for and report on all GHG emission sources and activities within the chosen target boundary. Disclose and justify any specific exclusions.

<sup>17</sup> For the GRI standards on sustainability reporting, see <https://www.globalreporting.org/standards/>.

<sup>18</sup> In addition to collecting emissions data, the CDP Climate Change Questionnaire collects information on corporate risks and opportunities connected to climate change. <https://www.cdp.net/en/climate>.

<sup>19</sup> The NAZCA platform currently reports the commitments of at least two thousand companies. <http://climateaction.unfccc.int/>.

- **Consistency:** Use consistent methodologies to allow for meaningful comparisons of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series.
- **Transparency:** Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.
- **Accuracy:** Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

Specific recommendations for describing the target and reporting on progress are given below. Dependent on the audience and the intended communication emphasis, a company should tailor their communications to focus on one or a combination of these specific recommendations.

## Describe the target

A description of the SBT should include technical information on the boundary and ambition of the target, as well as the assumptions and methods used to set the target. Companies may choose to also include qualitative, contextual information on the target.

### Technical information on the SBT

At a minimum, a company should provide the following information:

- Base year and target year;
- The emissions scopes that are and are not included in the target (e.g., whether scope 3 emissions are excluded because they do not account for a significant portion of total emissions) and any future plans to include them;
- Percentage of the company's total emissions covered by the target;
- For intensity targets, an explanation of the metric (note that it is best to express intensity targets on both an absolute AND an intensity basis);
- Percent reductions, for both final and intermediate targets;
- Emissions scenario, allocation approach and method(s) used to set target;
- Whether a location- or market-based approach is used to calculate scope 2 emissions in the base year and track performance against an SBT;
- Any other information required by the method (assuming data are not commercially sensitive); and
- A link to the company's annual GHG inventory that follows the GHG Protocol Corporate Standard's reporting requirements.

Companies are also encouraged to specify the actual target emissions level (in tonnes CO<sub>2</sub>e) in addition to the percentage reduction.

### Scope 3 targets

The recommendations above also apply to scope 3 targets, although some recommendations may not be relevant, depending on how the scope 3 target has been formulated. For instance, it would not be necessary to disclose an emissions scenario if an SBT method had not been used.

In addition, companies should communicate the following when describing scope 3 targets:

- Describe which scope 3 categories are covered by the target as well as any categories that are specifically excluded.
- Contextualize the significance of the target by, for example, describing the percentage of scope 3 emissions covered by the target or the size of the scope 3 target relative to that of the company's scope 1 and 2 emissions.

As with scope 1 and 2 target disclosures, it is important to understand the audience and present the target in a way that is meaningful and relevant to them. It is also important to recognize that achieving a scope 3 target depends on collaboration and cooperation from suppliers, customers, and other external stakeholders, so it must be communicated in terms that encourage them to be motivated and inspired to contribute.

### Qualitative and contextual information

Explaining the context for a target has two important benefits. First, stakeholders will better understand the significance of the target, thereby recognizing the company's leadership on climate change. Second, the company will contribute its voice to a larger narrative on how corporate climate action is both feasible and business smart. Contextual information can include:

- **Motivation:** Why did the company commit to such significant emissions reductions? Why is following climate science important to corporate leadership? The answers to these questions are illuminating for stakeholders, journalists, and others who are interested in business management trends and/or climate change. They might provide an incentive to others to contribute to the target or follow suit by setting an SBT at their own organization.
- **Relationship with broader company objectives:** Many companies will explore radically different business models, technologies, operational procedures, suppliers, and other business practices in order to become a low-carbon business. Stakeholders may require a full understanding of the company's current standing and vision for the future when considering an SBT. Therefore, the company may wish to connect the target to its strategic, financial, and operational plans.

- **How the company will cut emissions:** While most companies will not have a fully engineered plan for meeting their SBT at the outset, they may be able to provide near-term examples of the steps they will take to reduce emissions. Tangible examples that are easy to visualize are helpful; for example, a company may state, “We plan to put solar panels on 20% of our facilities next year.”
- **The case for following climate science:** SBTs are notable because they support the global effort to prevent the most dangerous consequences of climate change. It is important for stakeholders to understand that climate science can and should guide decisions on emissions reductions.
- Links to awards, press coverage, and other notable communications materials.

## Describe progress toward the target

On an annual basis, companies should report on progress toward their target(s) and their corporate-wide GHG emissions inventory. Such information is important to help stakeholders better understand a company’s progress and efforts before reaching the target year. The following information should be included by a company in communications about its progress:

- A description of the target itself, following the recommendations in this section.
- Emissions changes from the base year to the current year (yearly breakdowns are preferable). Variability between years is expected, so it is important to show trends over multiple years.
- When a company has sub-targets for a specific scope or scope 3 category, a company should demonstrate progress against each sub-target.
- Reasons for substantial emissions variations (e.g., emissions reduction activities, significant increases or decreases in growth, or changes in product lines).
- If progress is not on track or deviates away from the target pathway: explain why and the strategy for addressing these deficits in the future.
- Whether the target has been revised, and if so, what changes were made and why (e.g., due to a recalculation of the base year inventory or an update to the emissions scenario).
- Information on successful projects that have helped to reduce emissions.
- Novel or innovative efforts or partnerships that have been put into place and can differentiate a company and highlight it as a leader.
- Investments or changes that have been made that may not yet have delivered significant results but that are expected to do so in the coming years or that enable the necessary transformation towards the long-term goal.

In addition, to ensure consistent tracking of performance over time, a company should recalculate its SBT, as needed, to reflect significant changes that would otherwise compromise the target’s relevance as described by recommendation 12 (triggered

recalculation) of the SBTi criteria.<sup>20</sup> Recalculation should not be triggered by organic growth and decline, which is defined as “increases or decreases in production output, changes in product mix, and closures and openings of operating units that are owned or controlled by the company” (WRI & WBCSD 2011, 106).

Starting from Version 4 of the SBTi criteria, companies are required to review, and if necessary revalidate, their targets every five years from the date of the original target approval (C23). Long-term targets in particular may require recalculation to update the company growth assumptions used to project the target and to reflect the latest climate science. For example, targets could be recalculated to align with the latest emissions scenarios available from the IPCC or other scientific bodies, as these scenarios are published.

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<sup>20</sup> To ensure targets remain aligned with the most recent climate science, the latest version of the SBTi criteria requires that companies review, and if necessary revalidate, their targets every five years from the date of the original target approval.

## Glossary

**Appointed approver (AA):** A technical expert, directly employed by one of the SBTi partners, who performs target validations and reviews assessments made by LRs. Within a Validation Team for a specific target, the AA is from a different organization than the LR.

**Initial screening:** A review for completeness of the Target Submission Form, to ensure the company has provided all information required to assess the target and if the target meets certain criteria that are assessed at this stage (e.g., boundary, timeframe).

**Lead reviewer (LR):** A technical expert directly employed by one of the SBTi partners, who performs target validations including the following activities: reviews submission forms, assesses targets against SBTi criteria, liaises with companies, and submits assessments and recommendations.

**Query log:** A record of questions or requests for further information sent to the company and the company's response.

**Resubmission:** When the company sends a new or improved target back to the SBTi for evaluation after a previous official validation determined that the target did not meet one or more of the criteria.

**Round of Assessment:** Process from when the company sending a completed submission form to when the SBTi issues a decision on proposed targets and the related deliverables after the targets have been assessed against the SBTi criteria.

**Science Based Targets initiative partners (SBTi partners):** SBTi is a joint initiative by CDP, UNGC, WRI and WWF, commonly referred to as the partner organizations.

**Steering Committee:** The decision-making body of the SBTi initiative composed of one representative from each of the four SBTi partner organizations. One of its functions is to provide the final sign-off on target validation decisions that are particularly complex.

**Target Submission Form:** The form the company fills out with its inventory and target information. The SBTi uses the information in the form to determine if the targets meet its criteria during target validation.

**Target validation:** Evaluation process that a target must pass in order for the SBTi to endorse it as science based. Only positive results are communicated publicly. The target validation is not a negotiation of a company's target(s), rather an assessment of the target(s) against the SBTi criteria.

**Target validation service:** A paid service for the target validation process that aims to provide a faster process and additional feedback to companies.

**Target Validation Team (TVT):** The technical arm of the SBTi that conducts target validations. Lead Reviewers are typically members of the TVT, but they might be supported

by the TWG to act as AA and/or external consultants hired to assist with the desk review portion of the target validation process.

**Technical Working Group (TWG):** The technical arm of the SBTi that develops tools and sector-specific developments. The TWG might also support the TVT as Appointed Approvers.

## Document history

Version	Change/update description	Date finalized	Effective date
1.0	Combined the Science-based Target Setting Manual and the SBTi Call-to-Action Guidelines, to provide comprehensive step-by-step guidance for companies that would like to commit to SBTi, develop and submit targets, and track progress against targets.	April 15 <sup>th</sup> , 2021	April 15 <sup>th</sup> , 2021
1.1	Updated the “benefits and drawbacks of different types of targets” section to reflect current best practices and to be inclusive of all acceptable target types, including supplier/customer engagement targets.	June 10 <sup>th</sup> , 2021	June 10 <sup>th</sup> , 2021