SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

SBTI CORPORATE NET-ZERO STANDARD

VERSION 1.0

OCTOBER 2021

CONTENTS

Version	*Release date*	*Purpose*	*Updates on earlier version*
1.0, SBTi Corporate Net-Zero Standard	*28/10/21*	*Launch of V1*	*Note that the standard will be subject to revisions to improve readability of the document.*

Partner organizations

CDP DISCLOSURE INSIGHT ACTION

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1 BACKGROUND TO THE NET-ZERO STANDARD

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The IPCC (2018), *Special Report on Global Warming of 1.5°C* (SR15), was widely accepted as a warning that we must limit global temperature rise to 1.5°C above pre-industrial levels and reach net-zero CO_2 emissions by 2050 for the best chance of avoiding catastrophic climate breakdown. More recently, the IPCC (2021), *Sixth Assessment Report*, has confirmed that climate change is already affecting every region on Earth, its impacts increasingly visible in the form of extreme weather, worsened droughts, and heightened risk of forest fires.

Against this backdrop, companies are increasingly adopting net-zero targets. The number of businesses committing to reach net-zero emissions has grown rapidly, but not all net-zero targets are equal. Without adhering to a common definition, net-zero targets can be inconsistent, and their collective impact is strongly limited.

While the growing interest in net-zero targets represents an unparalleled opportunity to drive corporate climate action, it has also created a pressing need for a common understanding of "net-zero" in a corporate context. Business leaders need a robust, science-based framework for setting net-zero targets. Otherwise, they risk continuing to invest in business models that are inconsistent with the goals of the Paris Agreement.

Through a transparent multi-stakeholder process, the Science Based Targets initiative (SBTi) has developed the first global science-based standard for companies to set net-zero targets. The Net-Zero Standard gives business leaders confidence that their near-term and long-term targets are aligned with what is needed to contribute to a habitable planet, and it provides clarity on business climate action to a wide range of stakeholders.

Through the SBTi, companies can commit to net-zero, which includes setting validated near-term and long-term science-based targets consistent with limiting temperature rise to 1.5°C, to become distinguished as climate leaders and drive forward the global transition to net-zero.

1.1 THE SCIENCE BASED TARGETS INITIATIVE

The SBTi is a global body enabling businesses to set ambitious emissions reductions targets in line with the latest climate science. It is focused on accelerating companies across the world to halve emissions before 2030 and achieve net-zero emissions before 2050.

The initiative is a collaboration between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) and one of the We Mean Business Coalition commitments. The SBTi 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.

1.2 PURPOSE OF THE NET-ZERO STANDARD

The SBTi's Corporate Net-Zero Standard (also referred to as the Net-Zero Standard) provides guidance, criteria, and recommendations to support corporates in setting net-zero targets through the SBTi. The

main objective of this standard is to provide a standardized and robust approach for corporates to set net-zero targets that are aligned with climate science.

It is important to note that while the SBTi does provide some supplementary guidance on greenhouse gas (GHG) accounting, companies should refer to the suite of corporate Greenhouse Gas Protocol standards on this topic.

1.3 WHO SHOULD USE THE NET-ZERO STANDARD?

The intended audience for this document is corporates with more than 500 employees that wish to commit to setting net-zero targets through the SBTi.

Although not directly intended for SMEs, SMEs should use this document to understand the key elements of a science-based net-zero target and the SBTi's recommended target-setting process. The SBTi offers a simplified route for SMEs to set net-zero targets, meaning that some of the detail contained within this document will not be applicable. SMEs should refer to the SME FAQ for more information.

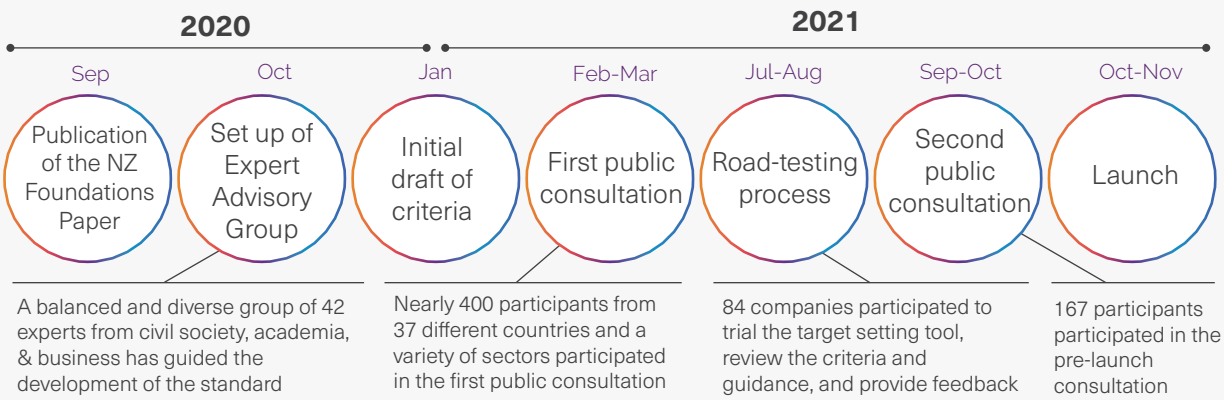
This document does not cover net-zero targets for financial institutions. The SBTi's financial sector project has a separate net-zero framework for financial institutions.

1.4 THE NET-ZERO STANDARD DEVELOPMENT PROCESS

The SBTi initiated a scoping phase of work in 2019 to develop a framework to enable companies to set robust and credible net-zero targets in line with a 1.5°C future. The standard development process formally began after the SBTi's publication of Foundations for net-zero target setting in the corporate sector in September 2020. At this point, the SBTi convened a dedicated Net-Zero Expert Advisory Group (EAG), which was to be the main consensus building body for the project.

The SBTi then began developing detailed criteria and guidance in regular consultation with the EAG, as well as the SBTi's Scientific and Technical Advisory Group. The SBTi requested feedback from stakeholders to improve the standard through two public consultations and a company road test. The standard was launched on 28 October 2021.

Figure 1 An outline of key milestones in Net-Zero Standard development process



1.5 HOW THE STANDARD RELATES TO OTHER KEY SBTI DOCUMENTS

The table below describes some of the key SBTi resources that companies may find useful when going through the target setting process. All resources, including translations, can be found at sciencebasedtargets.org/resources or sciencebasedtargets.org/net-zero.

Table 1 A mapping of key SBTi resources that companies should refer to when setting science-based net-zero targets.

TOPIC	DOCUMENT	DESCRIPTION
Target commitments	Commitment Letter	Companies wishing to set targets through the SBTi – both for near-term and net-zero commitments – should complete and submit the commitment letter.
	SME Target Setting Letter	SMEs use a streamlined process to set targets in line with climate science for both near-term and net-zero targets. SMEs can commit and select targets by completing and submitting the SME Target Setting Letter.
Setting near-term science-based targets	SBTi How-To Guide	A quick, simple, step-by-step flow chart that allows companies to understand how to set science-based targets in their specific situation.
	SME Target Setting Letter	SMEs use a streamlined process to set targets in line with climate science for both near-term and net-zero targets. SMEs can commit and select targets by completing and submitting the SME Target Setting Letter.
	SBTi Corporate Manual	Detailed step-by-step guide to the process of setting a near-term science-based target through the SBTi.
	SBTi Criteria	The criteria companies' near-term targets must meet to be approved as science-based by the SBTi.
	Target Validation Protocol	Guide to the target validation process. To be used in conjunction with other key resources, the target validation protocol explains the target setting process, how targets are assessed and sector-specific requirements.
Net-zero	Foundations for net-zero target-setting in the corporate sector	This paper lays out the conceptual foundations for credible, science-based net-zero targets for the corporate sector.
	Net-Zero Standard	This document. Provides guidance, criteria, and recommendations to support corporates in setting net-zero targets through the SBTi
	Net-Zero Standard Criteria	The criteria companies' net-zero targets must meet to be approved as science-based by the SBTi. This is a standalone version of chapter 7 of this document.
	Getting Started Guide	A quick, simple, step-by-step flow chart that allows companies to understand how to set net-zero targets in their specific situation.
	Net-Zero tool	Target-setting tool to calculate long-term SBTs in-line with the Net-Zero Standard. In a future update, the Net-Zero Tool and current SBTi target-setting tool for near-term SBTs will be combined.
	Beyond value chain mitigation FAQ	The SBTi is continuing its work on its role in incentivizing beyond value chain mitigation after launch of V1 of the Standard. This FAQ will be used to provide information and updates during this process.
	Pathways to Net -Zero	SBTi's Technical Summary that provides more information on pathways used by the SBTi.

2 THE NET-ZERO STANDARD FRAMEWORK

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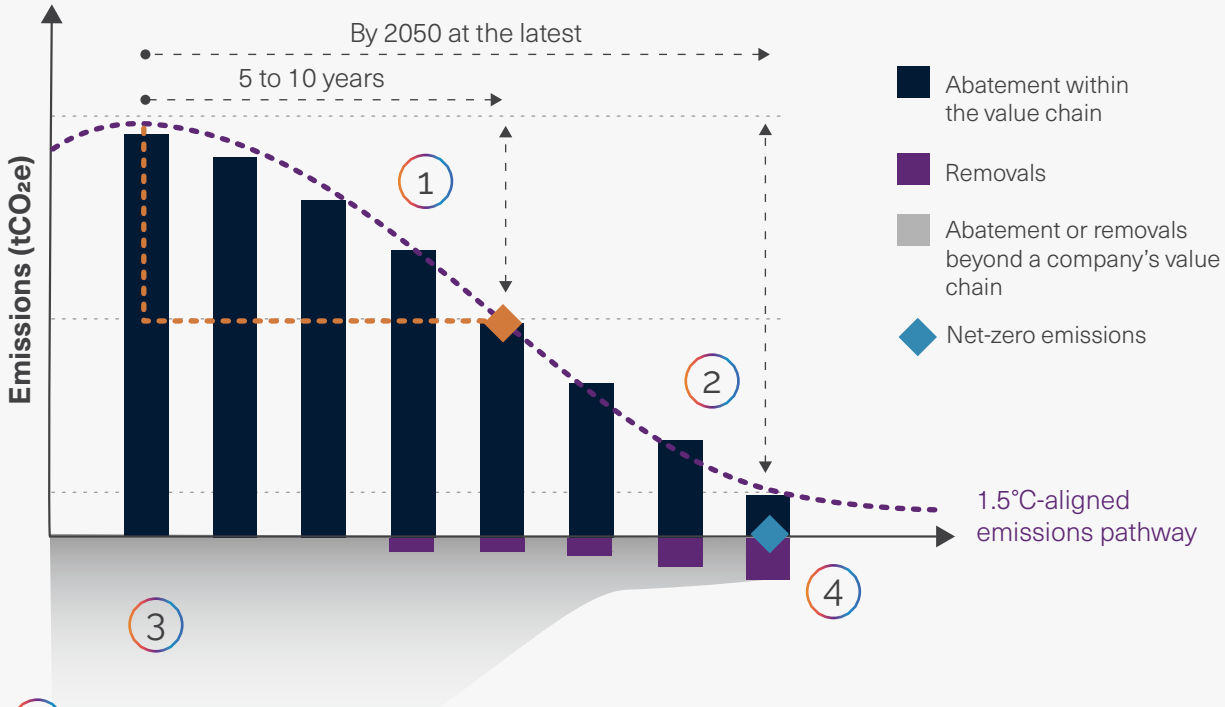
As described in more detail in *Foundations for net-zero target setting in the corporate sector*, there are many different transition pathways toward achieving a state of net-zero emissions at the global level, each with different implications for our climate, for nature, and for society. Considering these implications, the Net-Zero Standard was developed with the intention of guiding corporates towards a state of net-zero in a way that is consistent with societal climate and sustainability goals and within the biophysical limits of the planet.

To contribute to societal net-zero goals, companies must deeply reduce emissions and counterbalance the impact of any emissions that remain. The SBTi Net-Zero Standard defines corporate net-zero as:

- Reducing scope 1, 2, and 3 emissions to zero or to a residual level that is consistent with reaching net-zero emissions at the global or sector level in eligible 1.5°C-aligned pathways
- Neutralizing any residual emissions at the net-zero target year and any GHG emissions released into the atmosphere thereafter.

The Net-Zero Standard sets out four key elements that make up a corporate net-zero target as depicted in Figure 2. The first of these elements is a near-term science-based target, the second is a long-term science-based target, the third is mitigation beyond the value chain, and the final element is neutralization of any residual emissions. These four elements are described in the following sections in more detail.

Figure 2 Key elements of the Net-Zero Standard



1 **To set near-term SBTs:** 5–10 year emission reduction targets in line with 1.5°C pathways

2 **To set long-term SBTs:** Target to reduce emissions to a residual level in line with 1.5°C scenarios by no later than 2050

3 **Beyond value chain mitigation:** In the transition to net-zero, companies should take action to mitigate emissions beyond their value chains. For example, purchasing high-quality, jurisdictional REDD+ credits or investing in direct air capture (DAC) and geologic storage

4 **Neutralization of residual emissions:** GHGs released into the atmosphere when the company has achieved their long-term SBT must be counterbalanced through the permanent removal and storage of carbon from the atmosphere.

2.1 NEAR-TERM SCIENCE-BASED TARGETS

What: Previously known as "science-based targets", these are 5-10-year GHG mitigation targets in line with 1.5°C pathways. When companies reach their near-term target date, they must calculate new near-term science-based targets to serve as milestones on the path towards reaching their long-term science-based target.

Why: Near-term science-based targets galvanize the action required for significant emissions reductions to be achieved by 2030. Near-term emissions reductions are critical to not exceeding the global emissions budget and are not interchangeable with long-term targets.[1]

2.2 LONG-TERM SCIENCE-BASED TARGETS

What: These targets show companies how much they must reduce value chain emissions to align with reaching net-zero at the global or sector level in eligible 1.5°C pathways by 2050 or sooner.

1 Despite this, if a company sets a long-term science-based target to reach the level of decarbonization required to reach net-zero at the global or sector level in 1.5°C pathways within a 10-year timeframe, the near-term science-based target is not required.

Why: These targets drive economy-wide alignment and long-term business planning to reach the level of global emissions reductions needed for climate goals to be met based on science. A company cannot claim to have reached net-zero until the long-term science-based target is achieved.

2.3 NEUTRALIZATION

What: Measures that companies take to remove carbon from the atmosphere and permanently store it to counterbalance the impact of emissions that remain unabated.

Why: Although most companies will reduce emissions by at least 90% through their long-term science-based targets, some residual emissions may remain. These emissions must be neutralised to reach net-zero emissions and a state of no impact on the climate from GHG emissions.

2.4 BEYOND VALUE CHAIN MITIGATION

What: "Beyond value chain mitigation" refers to mitigation action or investments that fall outside of a company's value chain. This includes activities that avoid or reduce greenhouse gas emissions, and those that remove and store greenhouse gases from the atmosphere.

Why: The climate and ecological crises require bold and decisive action from companies. Decarbonizing a company's value chain in line with science and reaching net-zero emissions by 2050 is increasingly becoming the minimum societal expectation on companies. Businesses can play a critical role in accelerating the net-zero transition and in addressing the ecological crisis by investing in mitigations actions beyond their value chains. Additional investments like these could help increase the likelihood the global community stays within a 1.5˚C carbon budget but are not a substitute for the rapid and deep reduction of a company's own value chain emissions.

2.5 FURTHER WORK ON BEYOND VALUE CHAIN MITIGATION

The principle at the heart of the SBTi Net-Zero Standard is the "mitigation hierarchy". Under the mitigation hierarchy, companies should set science-based targets, both near- and long-term, to address value chain emissions and implement strategies to achieve these targets as a first order priority ahead of actions or investments to mitigate emissions outside their value chains (see Figure 3).

Although setting and achieving science-based targets must be the priority, companies should go further and invest in mitigation outside their value chains to contribute towards reaching societal net-zero. The SBTi recommends that companies prioritize near-term science-based targets, followed by securing and enhancing carbon sinks (terrestrial, coastal and marine, etc.) to avoid the emissions that arise from their degradation. Examples include purchasing high quality, jurisdictional REDD+ carbon credits that support countries in raising the ambition on, and in the long-term, achieving their nationally determined contributions There is also a critical need for companies to invest in nascent GHG removal technologies (e.g. direct air capture (DAC) and storage) so that the technology is available to neutralize residual emissions at the long-term science-based target date.

Figure 3 SBTi perspective on prioritization of mitigation actions

EMISSION REDUCTIONS ARE KEY TO TRANSITION TO GLOBAL NET-ZERO	BUT BEYOND VALUE CHAIN MITIGATION CAN ACCELERATE THE TRANSITION
• Complete an emission inventory following the GHG Protocol • Set near- and long-term science-based targets to reduce value chain emissions • Implement a strategy to achieve science-based targets • Disclose target progress annually	• **In the near-term**, prioritize securing and enhancing carbon sinks (terrestrial, coastal and marine, etc.) to avoid the emissions that arise from their degradation. There is also a critical need for companies to invest in nascent GHG removal technologies (e.g. direct air capture (DAC) and storage). • **In the long-term,** when the net-zero target date is reached, companies must neutralize any residentual emissions by permanently removing carbon from the atmosphere. Companies must continue to neutralize any remaining emissions.

The SBTi recognizes there is an urgent need to scale up finance in the near-term to support climate mitigation, and is undertaking research to understand what role it should play in incentivizing and enabling these investments. In the coming months, the SBTi will use the results of this work to consider various models through consultation with the Expert Advisory Group and other stakeholders and decide on a course of action in early 2022. Please see the Beyond Value Chain Mitigation FAQ on our website for more information on the topic.

3 MITIGATION PATHWAYS IN THE NET-ZERO STANDARD

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Through the Paris Agreement, parties and signatories committed to "holding the increase in global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels."

In the years since the Paris Agreement was signed, the need to limit warming to 1.5°C has become even stronger. Against the backdrop of increasingly frequent and destructive climate-related disasters, the IPCC's SR15 report delivered a harrowing scientific consensus: while impacts to human health, society, and nature associated with 1.5°C of warming are worse than previously acknowledged, the risks associated with exceeding 1.5°C are far higher. Because of these risks, SR15 highlighted pathways that limit warming to 1.5°C with no or limited overshoot (overshoot <0.1°C).

3.1 THE SCIENCE BEHIND SCIENCE-BASED NET-ZERO TARGETS

As described in SR15, scenarios that limit warming to 1.5°C with no or limited overshoot reach net-zero CO_2 emissions around 2050, accompanied by rapid reductions in non-CO_2 GHG emissions. These scenarios entail profound transitions in the global energy, industry, urban, and land systems that involve:

- Full or near-full decarbonization for energy and industrial CO_2 emissions achieving a zero-emissions energy supply system by mid-century.
- Eliminating CO_2 emissions associated with agriculture, forestry, and land-use
- Deep reductions in non-CO_2 emissions from all sectors.
- Removing CO_2 from the atmosphere to neutralize residual emissions and, potentially, sustain net negative emissions that reduce cumulative CO_2 in the atmosphere over time.

The different system transformations in 1.5°C mitigation scenarios occur simultaneously and all of them are needed for society to reach net-zero emissions and limit warming to 1.5°C. An understanding of the synergies and trade-offs between different climate change mitigation scenarios and sustainable development should also guide climate action.

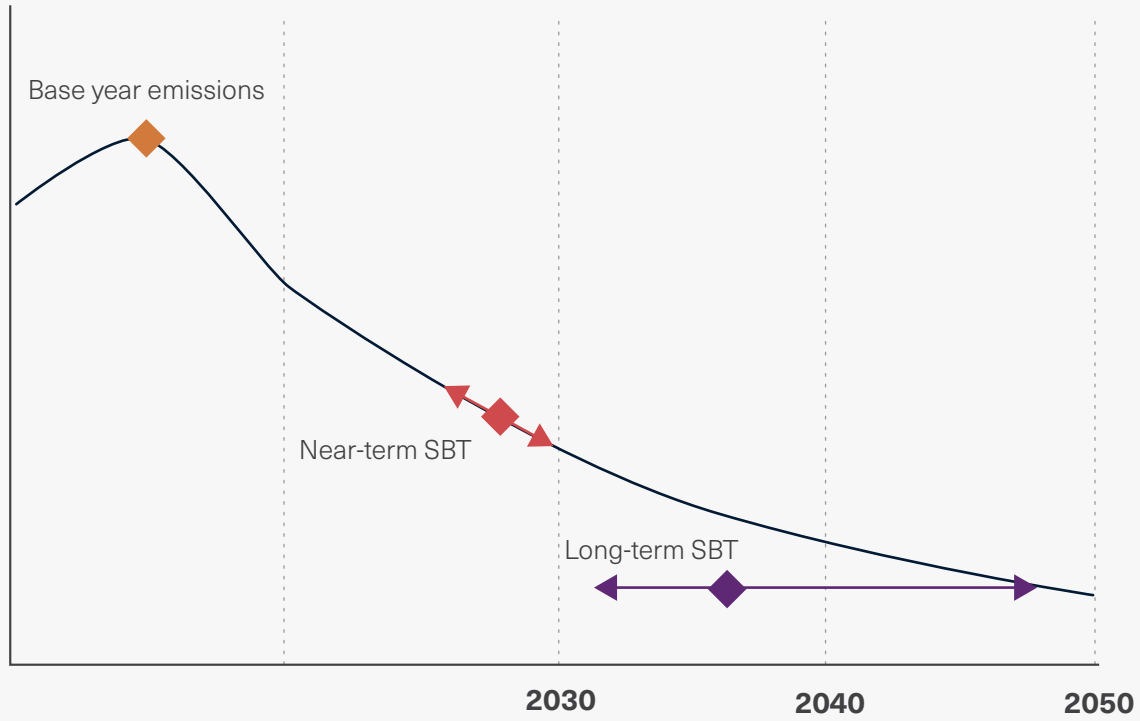
Pathways used by the SBTi aim to steer voluntary climate action and contribute to achieving the 1.5°C objective of the Paris Agreement and the Sustainable Development Goals (SDGs), reaching net-zero CO_2 emissions at the global level by 2050 and net-zero GHG emissions in 2050 or later. In aggregate, 1.5ºC-aligned pathways used by the SBTi stay within a 500 GT carbon budget under the assumption of about 20-40 GT of cumulative CO_2 removal by 2050. For a detailed overview of how the SBTi determines 1.5ºC-aligned pathways for calculating SBTs, in accordance with concepts described in the SBTi's 'Foundations of Science-based Target Setting' (2019) and principles introduced in the SBTi's 'Foundations for Science-based Net-Zero Target Setting in the Corporate Sector' (2020), please see "Pathways to Net-Zero: SBTi Technical Summary."

3.2 HOW MITIGATION PATHWAYS ARE USED TO INFORM SCIENCE-BASED TARGETS

Mitigation pathways play a key role in setting science-based targets. For near-term science-based targets, mitigation pathways inform the **rate** of emissions reductions or emissions intensity reductions that are needed. For long-term science-based targets, they inform the **overall** emissions reduction or convergence intensity that must be reached to be aligned with net-zero at the global or sector level.

Because of this, near-term science-based targets are target year-dependent, while long-term science-based targets are target year-independent. This means that a company's reduction target will differ depending on the target year for its near-term targets, but the reduction target will not differ depending on the target year for its long-term targets. This is illustrated in Figure 4 below. Because of this, companies will model long-term targets, and then set their net-zero and long-term target date depending on when the emission reductions can be achieved.

Figure 4 Schematic showing target year dependency of near-term science-based targets in comparison to the target year independency of long-term science-based targets. Companies can select a target year of 2050 or earlier for long-term targets, which depends on h how quickly it can reduce its emissions.



Box 1. How are residual emissions determined for different sectors of the economy?

Residual emissions levels are grounded in what's needed to achieve net-zero CO_2 emissions at the global level by 2050, limit warming to 1.5°C, and contribute to achieving the SDGs. In pathways used by the SBTi, residual emissions at the cross-sector level reflect the 2020-2050 emissions reduction needed. At the sector level, residual emissions reflect a sector-specific 2020-2050 emissions reduction or a 2050 convergence emissions intensity (except for the power sector which uses 2040 instead of 2050 due to an earlier net-zero year). The same pathways are used to calculate near-term SBTs and residual emissions levels for long-term SBTs. In aggregate, these pathways:

- Stay within the remaining carbon budget for a 50% likelihood of limiting warming to 1.5°C
- Reduce energy and industrial process CO_2 and CH_4 emissions by an amount roughly consistent with the IEA's Net Zero Emissions scenario
- Mitigate forestry, land-use and agriculture (FLAG) sector GHG emissions by an amount consistent with the detailed land-sector roadmap in Roe et al. (2019), 'Contribution of the land sector to a 1.5°C world'
- Reach net-zero CO_2 at the global level by 2050, assuming at least low/medium CO_2 removal (1-4 GT CO_2/year), and net-zero GHG emissions in 2050 or later, depending on CO_2 removal levels and different mitigation choices across pathways

To meet these conditions, an economy-wide emissions reduction of at least 90% by 2050 informs the level of residual emissions for most companies, as shown by the cross-sector pathway. The IEA's Net-Zero Emissions (NZE) scenario, which reduces energy and industrial process CO_2 emissions 95% between 2020 and 2050, has been an important reference for this calculation; but ultimately, our approach to developing the cross-sector pathway was holistic, building from an expansive body of literature and iterative development with the SBTi's Scientific Advisory Group. For more information on the cross-sector pathway and sector-specific pathways used by the SBTi, please see the SBTi's Technical Summary "Pathways to Net-Zero."

3.2.1 Overview of pathways and which companies should use them

The SBTi offers a cross-sector pathway and sector-specific pathways for setting science-based targets. Companies in the power generation sector and forestry, land-use, and agriculture (FLAG) sectors are required to set SBTs using sector-specific pathways (effective for FLAG sectors after the finalization of SBTi and GHG Protocol guidance). For all other companies, the cross-sector pathway is eligible and recommended for setting absolute targets.

Using the cross-sector pathway, companies can set near-term targets that reduce emissions at a linear annual rate of 4.2%; however, some sector-specific pathways vary significantly from the cross-sector pathway in the near-term. For near-term SBTs, sector-specific pathways may only be used to calculate targets using the intensity convergence (SDA) method.

In the long-term, emissions in the cross-sector pathway are reduced by at least 90% and most sector-specific pathways also reduce CO_2 emissions by 90% or more from 2020 levels. Consequently, for many companies, long-term science-based targets will be equivalent to at least a 90% absolute reduction across scopes regardless of whether the cross-sector pathway or sector-specific pathways are used. For long-term SBTs, sector-specific pathways can be used to calculate either intensity or absolute targets, in addition to the option of calculating absolute targets using the cross-sector pathway.

Sector-specific pathways are available or in development for the energy supply sector, transport sector, industry sectors including cement and steel, buildings sector, and sectors with significant FLAG emissions (Table 2).

Table 2 Summary of the status of sector-specific guidance and pathways. For sectors where sector-specific guidance is not yet complete, all dates are expected (not binding) due to each project undergoing formal SBTi review before completion. Except for power generation and FLAG, all currently eligible sectors may use the cross-sector pathway to set 1.5˚C-aligned near-term and long-term science-based targets. Currently eligible sectors where 1.5˚C sector-specific pathway(s) are planned but not yet available are strongly recommended to use the cross-sector pathway or FLAG pathway to set science-based targets. For the road & rail transport sector, well-below 2˚C-aligned sector specific pathways are available.

IPCC SECTOR	SBT SECTOR	PATHWAY		GUIDANCE *Guidance documents to support*
		NEAR-TERM	LONG-TERM	
AFOLU	Forests, land and agriculture (FLAG) pathway	March 2022		March 2022
	FLAG commodity pathways	March 2022	March 2022	March 2022
BUILDINGS	Buildings	December 2021		
INDUSTRY	Iron and steel	June 2022		April 2023
	Cement	December 2021		June 2022
	Chemicals			
TRANSPORT	Road and rail transport			
	Maritime transport	January 2022	January 2022	January 2022
	Aviation	December 2021	December 2021	
OTHER ENERGY	Oil and gas			
ELECTRICITY AND HEAT	Power generation			
OTHER SECTORS	Apparel and footwear			
	ICT			

1.5˚C sector pathway(s) available at Net-Zero Standard launch

1.5˚C sector pathway(s) planned

Sector uses cross-sector pathway

Guidance complete

Guidance release date known

Guidance planned, no timeline available

Companies in heavy-emitting sectors often use sector-specific pathways to calculate both near-term and long-term intensity targets. Other companies with scope 3 emissions allocated to the activities of a heavy-emitting sector use a mix of approaches to calculate targets. For example, a real estate development company may have significant scope 3 emissions attributed to both the steel and cement sectors. When setting targets that cover upstream scope 3 emissions, these companies may use a sector-specific pathway to set intensity targets as long as the pathway reflects both supply-side and demand-side mitigation where relevant (see sector-specific guidance for more information).

Table 3 A summary of how the cross-sector pathway and sector-specific pathways can be applied.

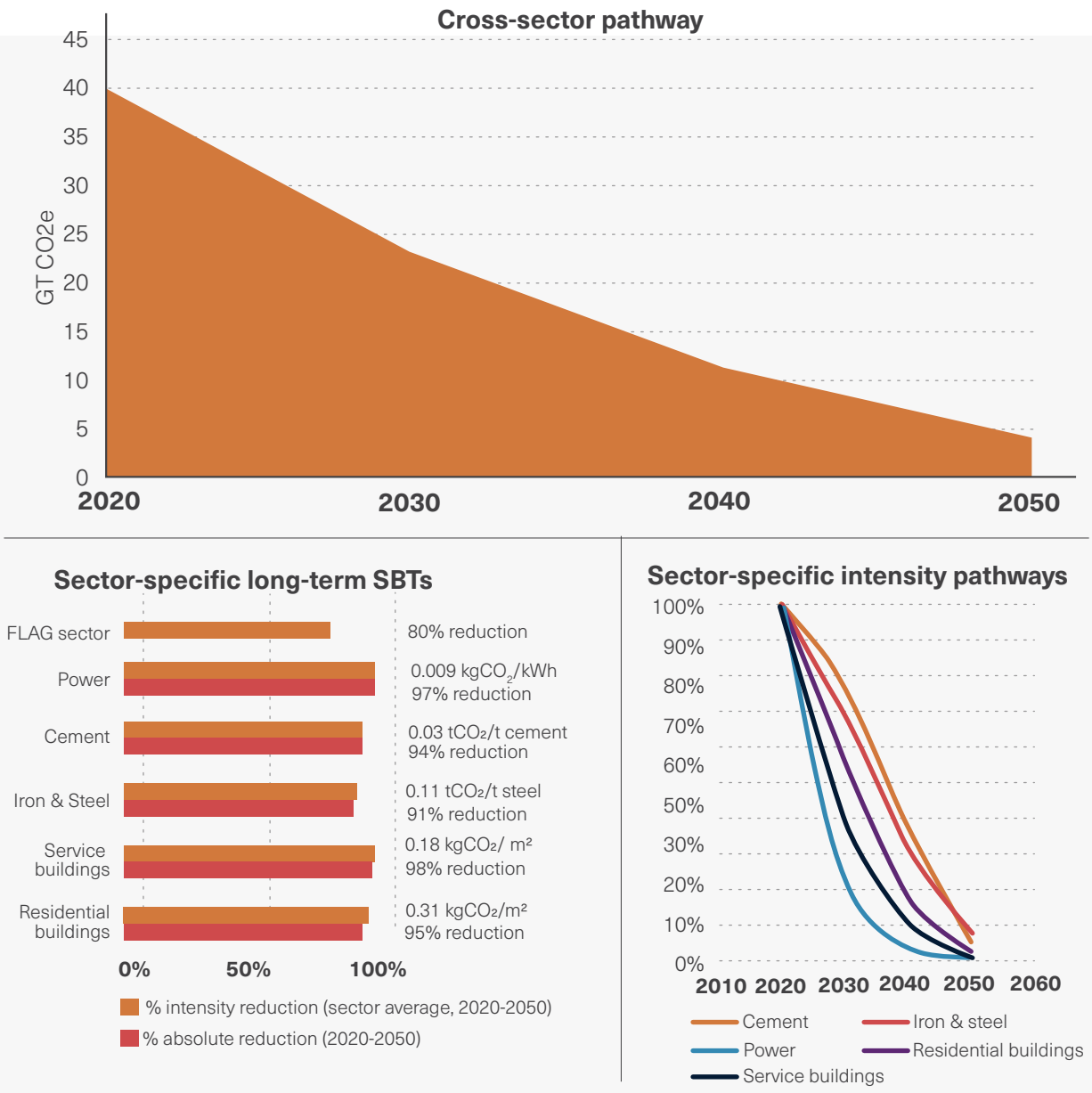
	WHICH COMPANIES CAN USE THESE PATHWAYS?		WHAT TYPES OF TARGETS CAN BE MODELLED?	
	Near-term	Long-term	Near-term	Long-term
Cross-sector pathway	All companies, except those in the power generation sector and FLAG sectors		Absolute	Absolute
Sector-specific pathways	For scope 1: typically companies in heavy-emitting sectors or a FLAG sector For scope 3: companies with scope 3 emissions dominated by one or more heavy-emitting sectors or FLAG sectors		For the FLAG sectors: Absolute or intensity For all other sectors: intensity	Absolute or intensity[2]

3.3 TRANSFORMATIVE MITIGATION IS REQUIRED FROM ALL SECTORS

Figure 5 shows the ambition of the cross-sector pathway and sector-specific pathways used to calculate near-term and long-term SBTs. Some sectors reduce emissions more than the cross-sector pathway in 2050, while other sectors reduce emissions less, but all of the pathways reflect transformative mitigation efforts. Companies in the power generation sector must use the sector-specific pathway to calculate SBTs. Some other sectors where emissions are reduced more in the sector-specific pathway can still use the cross-sector pathway for two main reasons: (1) the difference is small (<10% of base year emissions) and (2) companies are required to neutralize unabated emissions regardless, which aims to counteract the impact of any residual emissions and incentivize continued abatement once net-zero is reached.

2 Companies setting targets on upstream scope 3 emissions that arise from high-emitting sectors should review relevant sector guidance to understand when it is appropriate to set absolute or intensity targets using sector-specific pathways (i.e., a professional services firm setting intensity targets on air travel emissions should review aviation sector guidance).

Figure 5. **a**. GHG emissions in the cross-sector emissions pathway, which covers CO_2, CH_4, and N_2O from energy supply, transport, industry, and buildings. All companies except the power generation sector and FLAG sectors may set SBTs using the cross-sector pathway. b. Sector-specific long-term SBTs for sectors included in V1.0 of the Net-Zero Standard. At the company level, absolute targets are based on the sector's 2020-2050 absolute emissions reduction (red bars & data labels), except the power sector; and intensity targets are based on the 2050 convergence intensity (data labels only), except the power sector. For the power sector, long-term SBTs are calculated based on 2040 instead of 2050 due to an earlier net-zero year. Orange bars show the 2020-2050 sector average intensity reduction, which may differ from company targets. c. Sector-specific intensity pathways (2020-2050) for scope 1 only. After the completion of the cement and steel-sector projects, scope 2 emissions will be added, iron & steel will be disaggregated, and other adjustments may be incorporated. For these reasons, the cement and iron & steel sector pathways are currently eligible to calculate long-term SBTs but not near-term SBTs.



4 SETTING NEAR-TERM AND LONG-TERM SCIENCE-BASED TARGETS

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Companies can take a variety of approaches to developing near-term and long-term science-based targets; however, the SBTi recommends following the five steps described in this section.

Figure 6 The SBTi recommends a five-step approach to setting science-based targets.

4.1 SELECT A BASE YEAR

Companies need to establish a base year to track emissions performance consistently and meaningfully over the target period. The following considerations are important for selecting a base year:

- Scope 1, 2, and 3 emissions data should be accurate and verifiable.
- Base year emissions should be representative of a company's typical GHG profile[3].
- The base year should be chosen such that targets have sufficient forward-looking ambition.
- The base year must be no earlier than 2015.

Companies that have already set near-term science-based targets must use the same base year for their long-term science-based target. For more information on setting the base year, please see the SBTi Corporate Manual (v1.1; p.11).

4.2 CALCULATE YOUR COMPANY'S EMISSIONS

4.2.1 Develop a full GHG emissions inventory

Companies are required to have a thorough emissions inventory that covers at least 95% of company-wide scope 1 and 2 GHG emissions and a complete scope 3 screening. The following points are important for alignment with the GHG Protocol and SBTi Criteria.

Ensure the target boundary is aligned with the GHG Inventory boundary: A company must select a single GHG Protocol defined method (operational control, financial control, or equity share) to determine its organizational boundary. The same method should be used to calculate its GHG emissions inventory and to define its science-based target boundaries. Both the emissions inventory and target boundary

3 For companies that have been significantly impacted by COVID-19, the SBTi recommends selecting a base year such as 2019 instead of 2020 or 2021 when setting targets. Alternatively, companies may use a multi-year average base year approach, as described in Chapter 5 of the Greenhouse Gas Protocol Corporate Standard.

should cover all seven GHGs or classes of GHGs covered by the UNFCCC/Kyoto Protocol.

For more information on organizational boundary-setting, please see the SBTi Corporate Manual (v1.1; p.12) and the GHG Protocol Corporate Standard (WRI & WBCSD 2004).

Determine how to treat subsidiaries: Parent companies should set science-based targets for subsidiaries in accordance with the selected organizational boundary approach. 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 science-based targets, parent companies must include subsidiaries in their target boundary as required by the selected organizational boundary approach.

For more information on subsidiaries, please see the SBTi Corporate Manual (v1.1; p.13) and page 19 of the GHG Protocol Corporate Standard (p. 19).

Exclude the use of carbon credits: Carbon credits do not count as reductions toward meeting your science-based targets. Companies should only account for reductions that occur within their operations and value chain.

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. Avoided emissions occur outside of the product's life cycle and therefore do not count as a reduction of a company's scope 1, 2 and 3 inventory.

For more information on avoided emission, please see the SBTi Corporate Manual (v1.1; p.13) and the World Resources Institute paper on avoided emissions.

Include all mandatory scope 3 emissions: Companies must 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. This inventory can be used to directly set a target or to identify high-impact categories for which more accurate data is 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.

For more information on calculating a scope 3 emissions inventory, please see the Corporate Manual (v1.1.; p. 22) and the GHG Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting standard.

Determine how to treat indirect use-phase emissions: Indirect use-phase emissions are generated by

products that only consume energy indirectly during use over their expected lifetime. Examples of such emissions include the washing and drying of apparel for apparel manufacturers and the cooking and refrigeration of food products for food retailers.

Indirect use-phase emissions are not within the "minimum boundary" for category 11 (use of sold products) and are listed as "optional."

If companies have significant indirect use-phase emissions and have levers to address them, they are encouraged to estimate these emissions and set an optional target on these emissions. Despite this, optional scope 3 emissions are not counted towards the two-thirds boundary in near-term science-based targets and 90% boundary in long-term science-based targets.

Review any sector-specific guidance: The SBTi publishes a wide range of resources to support businesses in their target-setting journey. For some sectors, sector-specific guidance developed with industry experts lays out best practice for inventory and target boundary-setting, emissions accounting, and target calculation, in line with the GHG Protocol. A summary of available and planned sector-specific guidance resources is shown in Table 2. For more information on sector-specific guidance, visit the sector guidance page of our website.

4.2.2 Calculate emissions that are reported separately from the GHG inventory

To meet SBTi criteria, companies that use bioenergy must report direct CO_2 emissions from biomass combustion, processing, and distribution, as well as the land-use emissions and removals associated with bioenergy feedstock. These emissions are reported separately from the company's GHG inventory, in line with Greenhouse Gas Protocol guidance.

Companies that sell or distribute fossil fuels are required to report the use-phase emissions associated with those fossil fuels in scope 3 category 11 (use of sold products) and cover these emissions with a target. For companies that transport or distribute, but do not sell, fossil fuels, these emissions must be calculated and covered by a target but are typically reported outside a company's GHG inventory.

Companies are also encouraged to report GHG emissions from land-use change (except for bioenergy, where reporting these emissions is required by the SBTi), although these are not currently required to be included in emissions inventories by the Greenhouse Gas Protocol.[4]

4.3 SET TARGET BOUNDARIES

4.3.1 Near-term science-based target boundary (scopes 1, 2, and 3)

Near-term science-based targets must cover at least 95% of company-wide scope 1 and 2 emissions. For companies with scope 3 emissions that are at least 40% of total emissions (scope 1, 2, and 3 emissions), at least 67% of scope 3 emissions must also be covered. Companies in certain heavy-emitting sectors are required to include specific emissions sources or scope 3 categories in their science-based target boundary, please see the SBTi Corporate Manual (v1.1; p.17).

4 Note on forthcoming land sector GHG Protocol guidance. See "Guidance for companies with significant FLAG emissions" for more information.

4.3.2 Long-term science-based target boundary (scopes 1, 2, and 3)

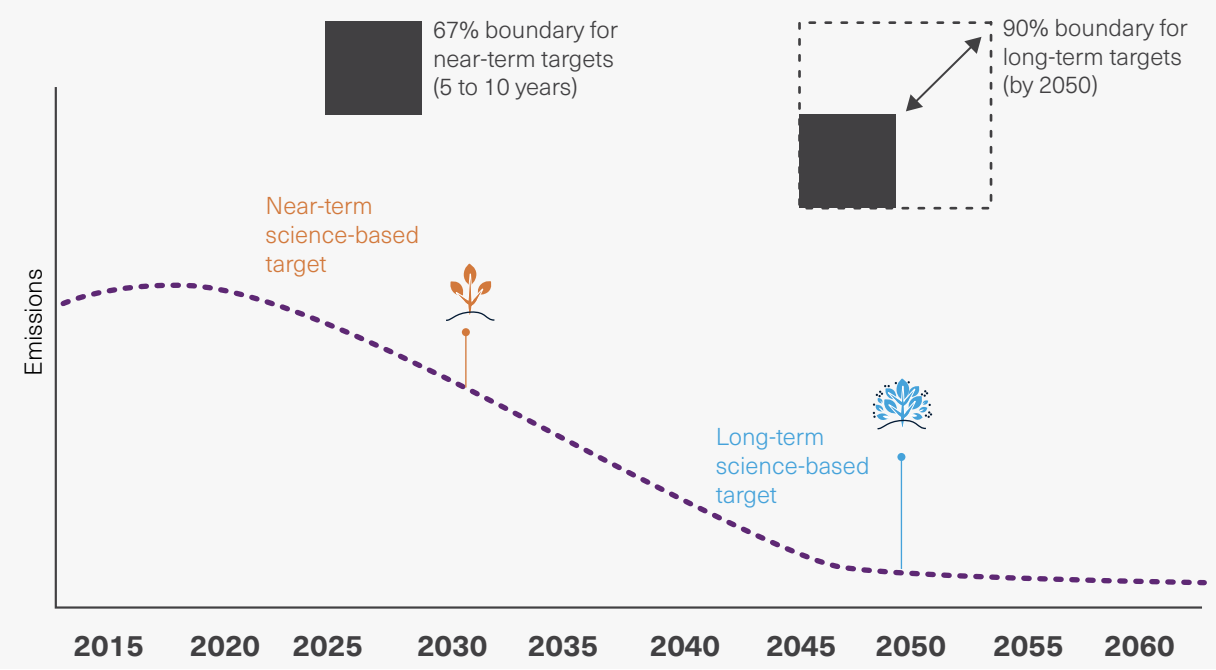
Long-term SBTs must cover at least 95% of company-wide scope 1 and 2 emissions and 90% of scope 3 emissions. See Box 2 for more information.

Box 2. The "expansive boundary" approach for scope 3

A comprehensive target boundary is necessary for companies to make credible net-zero claims at the end of their decarbonization journey. However, acknowledging the challenges that companies encounter with scope 3, the SBTi Net-Zero Standard is following an expansive boundary approach and a gradual increase in ambition.

In the near-term (5 to 10 years), a scope 3 target is needed whenever scope 3 represents more than 40% of a company's total emissions. Near-term scope 3 targets need to cover 2/3 of scope emissions and align to well-below 2°C ambition. In the long-term (by 2050 at the latest), the boundary of the target will increase to cover all material sources of emissions in the value chain (materiality threshold of 90%) aiming to achieve decarbonization in line with 1.5°C scenarios.

Figure 7 A visual explanation of the "expansive boundary" approach the Net-Zero Standard takes to scope 3 target boundaries.



Increasing the scope 3 boundary requirements from 67% for near-term SBTs to 90% for long-term SBTs will be challenging, but it will also drive major opportunities to collaborate across the value chain to support suppliers and customers to decarbonize. Through the expansive boundary scope 3 approach from the near to long-term, companies have time to work through the complexity of scope 3 and long-term scope 3 reductions, focusing now on fast reductions at scale across all scopes to tackle their most material emission sources.

The SBTi is developing plans to provide further support to companies through a specific follow-on project, as well as through a Supplier Engagement Toolkit which will be released in late 2021.

4.3.3 *Additional required science-based target coverage*

Companies that use bioenergy must include direct CO_2 emissions from biomass combustion, processing, and distribution, as well as the land-use emissions and removals associated with bioenergy feedstock, in their target boundary, even though these emissions are reported outside a company's GHG inventory. Similarly, companies that transport or distribute fossil fuels must include use-phase emissions in their target boundary, even though these emissions may not usually be reported in a company's GHG inventory.

Companies are also encouraged to include GHG emissions from land-use change in their target boundary (except for bioenergy, where including these emissions is required by the SBTi), although these emissions are not currently required to be included in GHG inventories by the Greenhouse Gas Protocol.[5]

A summary of the required coverage of near-term and long-term science-based targets is shown in Table 4, and a list of available and planned sector guidance is shown in Table 2.

Table 4 Minimum boundary coverage for near-term targets and long-term targets

MINIMUM % BOUNDARY COVERAGE BY SCOPE		
GHG inventory scope	Near-term targets	Long-term targets
Scopes 1+2	95% minimum coverage	
Scope 3	67% minimum coverage (if scope 3 emissions are at least 40% of total scope 1, 2, and 3 emissions)	90% minimum coverage (all companies)
SPECIAL BOUNDARY COVERAGE REQUIREMENTS BY EMISSIONS SOURCE		
Emissions source	Near-term targets	Long-term targets
Use-phase emissions from sold or distributed fossil fuels	Must be covered by an absolute contraction target	
Direct CO_2 emissions from biomass combustion, processing and distribution, as well as land-use emissions and carbon removals from bioenergy feedstock	Must be included in target boundary	
Sector-specific target boundary requirements	Transportation companies must set targets on a "well-to-wheel" basis Power generation companies must set an SDA target on scope 1 power generation, and all sold electricity (if scope 3 coverage is required) See Table 12 for a detailed list of sector-specific requirements	
GHG from land-use change (excluding bioenergy)	Optional to include	

5 Note on forthcoming land sector GHG Protocol guidance

4.3.4 *Meeting SBTi boundary criteria with several targets*

Companies often set several targets that collectively meet the boundary requirements described above. This is a valid approach to meeting the SBTi Criteria and Net-Zero Standard. Companies may consider setting targets that cover emissions from different sectors or that cover different scope 3 categories.

4.4 CHOOSE A TARGET YEAR

Near-term targets must have a target year 5-10 years from the date of submission to the SBTi, while long-term targets must have a target year of 2050 or sooner (2040 for companies in the power sector).

Because the ambition of long-term science-based targets is target year-independent, companies should begin by choosing any eligible target year. Based on the results of their target calculation, the company may adjust their chosen target year to be sooner or later depending on its ability to achieve its long-term target.

Target methods are used to calculate near-term and long-term targets based on a mitigation pathway and company inputs. Companies may choose from the following science-based target methods to calculate their targets:

4.5 CALCULATE TARGETS

4.5.1 *Eligible for scopes 1+2 (both near-term and long-term science-based targets)*

- **Absolute contraction:** Using this method, companies reduce absolute emissions by an amount consistent with a mitigation pathway. For near-term SBTs, the minimum reduction is calculated as a linear reduction rate (e.g., 4.2% p.a.), whereas for long-term SBTs the minimum reduction is calculated as an overall amount (e.g., 90% overall).

- **Physical intensity convergence:** Using this method, all companies in a sector converge to a shared emissions intensity in 2050 (2040 for the power sector). For near-term targets, the SDA formula is used, which adjusts a company's target based on their starting point, target year, and projected output growth. For long-term targets, the target year emissions intensity is just equal to the sector's emissions intensity in 2050 (2040 for the power sector).

- **Renewable electricity (scope 2 only):** Using this method, companies set targets to actively procure at least 80% renewable electricity by 2025 and 100% renewable electricity by 2030.

4.5.2 *Eligible for scope 3 (both near-term and long-term targets)*

- **Physical intensity contraction:** Using this method, companies define their own emissions intensity metric and set targets to reduce emissions intensity by an amount consistent with limiting warming to at least well-below 2˚C for near-term targets and 1.5˚C for long-term targets. For near-term targets, the minimum reduction is calculated as a 7% year-on-year reduction; whereas for long-term targets, the minimum reduction is calculated as an overall 97% reduction.[6]

6 In previous versions of the SBTi Criteria, the minimum ambition for scope 3 physical intensity targets was a 2% linear annual reduction with no increase in absolute emissions. It has been updated to a 7% compound reduction to align with well-below 2˚C scenarios.

- **Economic intensity:** Using this method, companies reduce economic emissions intensity (e.g., tCO_2 per unit of value added) by an amount consistent with limiting warming to at least well-below 2˚C for near-term targets and 1.5˚C for long-term targets. For near-term targets, the minimum reduction is calculated as a 7% year-on-year reduction; for long-term targets, the minimum reduction is calculated as an overall 97% reduction.

4.5.3 Eligible for near-term scope 3 targets only

- **Engagement targets (scope 3 near-term targets only):** Using this method, companies set a target for suppliers or customers representing a certain percentage of emissions to set their own science-based targets.

Using the methods listed above, companies must set near-term targets with a minimum ambition of 1.5°C for scopes 1 and 2 and a minimum ambition of well-below 2°C for scope 3. Long-term targets must have a minimum ambition of 1.5°C across scopes.

Table 5 Ambition ranges for target classification of near-term science-based targets.

LONG-TERM TEMPERATURE GOAL	ANNUAL LINEAR REDUCTION RATE OVER TARGET PERIOD
Well-below 2˚C Approx. 66% chance of limiting peak warming between present and 2100 to below 2˚C.	2.5% ≤ X < 4.2%
1.5˚C Approx. 50% chance of limiting warming in 2100 to 1.5˚C.	X ≥ 4.2%

A summary of eligible methods as described in this section is shown in Table 6 below.

Table 6 A summary of eligible methods for near-term and long-term targets .

	NEAR-TERM	LONG-TERM	ELIGIBILITY

Absolute Contraction	**Cross-sector pathway:**
	• S1+2: 4.2% p.a.
	• S3: 2.5% p.a.
		Cross-sector pathway:
		• 90% reduction
		• Sector-specific pathways:
		  • FLAG sector: 80% reduction
		  • Cement, iron & steel, residential buildings, and service buildings: >90%
		  • Other sector-specific and commodity-specific pathways to be added
			• Scopes 1-3
			• Default option

Physical intensity convergence	Sector-specific and commodity-specific pathways (using the Sectoral Decarbonization Approach)	Sector-specific and commodity-specific pathways	• Scopes 1-3 • Most commonly used by heavy-emitting sectors and the FLAG sectors
Renewable electricity	**Use of RECs or vPPAs:** • 80% by 2025 • 100% by 2030	**Use of RECs or vPPAs**: • 100% by 2030	• Scope 2
Engagement	Suppliers or customers to set SBTs at a minimum ambiton of well-below 2°C.	N/A	• Scope 3 • Only near-term
Economic intensity	At least 7% year-on-year reduction of emissions per unit value added.	97%	• Scope 3 only
Physical intensity	At least 7% year-on-year reduction for a company-defined physical emissions intensity metric	97%	• Scope 3 only

4.6 CALCULATING SCIENCE-BASED TARGETS

There are important differences in the approach to setting near-term and long-term science-based targets. The table below summarizes the key elements that vary between near and long-term targets.

Table 7 A comparison of boundary, ambition, timeframe, and methods between near and long-term targets.

		BOUNDARY	AMBITION	TIMEFRAME	METHODS
		What percentage emissions inventory coverage is required?	*What is the ambition level in terms of limiting temperature rise?*	*What is the maximum timeframe to meet targets?*	*What are the eligible methods to set targets?*
NEAR-TERM SBTS	**Scope 1 & 2**	95%	1.5°C	5-10 years	• Absolute contraction • Physical intensity convergence (SDA) • Renewable electricity
	Scope 3	If >40% of total emissions, 67% coverage	Well-below 2°C		• Absolute contraction • Physical intensity convergence (SDA) • Engagement • Economic intensity • Physical intensity
LONG-TERM SBTS	**Scope 1 & 2**	95%	1.5°C	2050 latest (2040 for the power sector)	• Absolute contraction • Physical intensity convergence • Renewable electricity
	Scope 3	90%			• Absolute contraction • Physical intensity convergence • Renewable electricity • Economic intensity • Physical intensity

4.7 CALCULATING NEAR-TERM SCIENCE-BASED TARGETS

Near-term targets covering scopes 1 and 2 can be calculated using absolute contraction or the physical intensity convergence (SDA) target setting method. Renewable electricity targets are also accepted as a substitute for targets that cover scope 2. Intensity convergence targets may use any sector-specific pathways that are available at the time of submission (Table 2) and may be subject to sector-specific criteria. For in-depth guidance on calculating near-term targets, please see the SBTi Corporate Manual.

4.7.1 Calculating long-term science-based targets

Calculating long-term targets is relatively simple because target ambition does not depend on the chosen target year and targets are less dependent on company input data. Companies must use the SBTi Tool Excel workbook to calculate long-term science-based targets.

4.7.2 Target wording

Once you have calculated your company's long-term target, you should consider how the company net-zero target, as well as the underlying target(s) can be expressed clearly and succinctly. The company net-zero date is determined by the latest long-term SBT target date. Companies can express their overarching net-zero targets as:

> COMPANY X COMMITS TO REACH NET-ZERO GREENHOUSE GAS EMISSIONS ACROSS THE VALUE CHAIN BY 2035.

Companies that have used the cross-sector pathway to set an absolute contraction target can simply express the target as:

> COMPANY X COMMITS TO REDUCE SCOPE 1+2+3 EMISSIONS 90% BY 2035 FROM A 2018 BASE YEAR.

Companies that have also set a long-term target on FLAG emissions can include a second target:

> COMPANY X ALSO COMMITS TO REDUCE EMISSIONS FROM FORESTRY, AND LAND-USE AND AGRICULTURE 80% BY 2035 FROM A 2018 BASE YEAR.

Companies that have covered their target boundary with several targets may need to include more detail in their target wording. First, companies should express their intensity target(s). For example:

> COMPANY Y COMMITS TO REDUCE THE SCOPE 1+2 EMISSIONS PER TON OF STEEL 91% BY 2040 FROM A 2018 BASE YEAR.

Next, companies should express their absolute target(s). Although the SBTi will need to review each sector-specific target to validate long-term targets, companies may have flexibility combining several absolute targets that cover the same emissions scope(s) or scope 3 category(s). For example, a company that has calculated two absolute targets for scope 3 category 3 upstream transport from maritime transport and aviation, once these pathways are available, may combine them into a single target:

> COMPANY Y ALSO COMMITS TO REDUCE SCOPE 3 EMISSIONS FROM UPSTREAM TRANSPORT BY 88%.

Companies that set an intensity target covering a subset of scope 1+2 emissions and an absolute target covering the remaining emissions may express the targets as follows:

> COMPANY Z COMMITS TO REDUCE SCOPE 1+2 EMISSIONS PER TON OF CEMENT 80% BY 2040 FROM A 2018 BASE YEAR. COMPANY Z COMMITS TO REDUCE ALL OTHER SCOPE 1+2 EMISSIONS 90% BY 2040 FROM A 2018 BASE YEAR.

Box 3. Can insetting count towards my scope 3 reduction?

There are multiple definitions for the term "insetting" (also referred to as supply chain interventions) and no standardization of the term, which makes it difficult to give a clear determination of what can and can't be included within scope 3 reductions. Insetting is used to describe interventions that are wholly contained within a scope 3 value chain boundary of a company or interventions partially within their scope 3 supply chain boundary (spanning their supply chain and other companies' supply chains). Accounting approaches for insetting also vary with the use of both project accounting and corporate accounting.

As this issue has not been settled to date in the GHG Protocol process, the SBTi recommends a conservative approach at this time. Companies should only include emission reductions or removals (removals only in the case of FLAG targets) from "insetting" projects that use a corporate accounting approach and are wholly contained within their supply chains or the portion of a "partially-included" project that is within their supply chain and linked directly to sourcing.

Further work is ongoing to standardize the definition of insetting/supply chain interventions and clear accounting methodologies. For these reasons, the SBTi will assess insetting on a case-by-case basis during the validation process and may not approve their use.

5 GUIDANCE FOR COMPANIES WITH SIGNIFICANT FLAG EMISSIONS

5 GUIDANCE FOR COMPANIES WITH SIGNIFICANT FLAG EMISSIONS

Companies in the FLAG sectors are expected to take a different approach to achieving their science-based targets – one that includes both emission reductions and removals. Several significant projects are ongoing to support companies in these sectors, and while these developments should not be used as an excuse to delay action, companies should pay particular attention to these when forming and implementing their mitigation strategies.

5.1 BACKGROUND ON FLAG EMISSIONS

The FLAG sectors, also known in the scientific community as the agriculture, forest, and other land use (AFOLU) sector, have been historically difficult to evaluate through GHG accounting and target setting approaches. However, AFOLU represents about 25% of anthropogenic GHG emissions (10–12 $GtCO_2e$ per year) with about half from agriculture and half from land use, land-use change, and forestry (LULUCF).[7] GHG emissions from the FLAG sector need to be halved by 2050, and at the same time agricultural production is expected to increase 50%.[8]

The AFOLU sector has the potential to deliver up to 20% of needed mitigation actions from now through 2050, including removals (Griscom et al 2017). Because of this, mitigation in the land sector also requires accounting for GHG removals (enhancing sinks) due to the potential for forests and soils to store carbon. GHG removals include restoring natural ecosystems, improving forest management practices, and enhancing soil carbon sequestration (Roe et al., 2019).

Aligning the AFOLU sector with 1.5°C pathways through both reductions and removals is feasible through reduced land-use change, enhanced carbon sinks, reduced agricultural emissions, and reduced overall production through demand shifts.

5.2 LAND SECTOR GUIDANCE IS EVOLVING

Many companies with land-intensive operations have committed or set targets through the SBTi, and many are also reporting their emissions publicly. Despite this, few companies account for AFOLU emissions or removals in their targets or disclosures.

A key barrier is the lack of available standards, methods, and data availability. However, land sector emissions ("biogenic carbon") accounting and target setting are being standardized through two key projects led by SBTi partner organizations, and as a result many companies will be addressing these emissions for the first time.

7 Roe, S., Streck, C., Obersteiner, M. et al. Contribution of the land sector to a 1.5 °C world. Nat. Clim. Chang. 9, 817–828 (2019). https://doi.org/10.1038/s41558-019-0591-9

8 https://research.wri.org/sites/default/files/2019-07/WRR_Food_Full_Report_0.pdf

5.2.1 SBTi FLAG Project

WWF is developing specific mitigation pathways for companies with land sector emissions through the SBTi Forest, Land and Agriculture (SBTi FLAG) project, which is due to complete by March 2022. The outputs of this project will allow companies to set science-based targets that fully incorporate deforestation and land-related emissions.

This guidance is aimed at companies in land-intensive sectors, which includes sectors such as food, agriculture, and forestry. These new pathways will include not only emissions reduction, but also removals ***within*** the land sector. It includes an overall AFOLU sector mitigation pathway as well as 10 specific mitigation pathways for major commodities: beef, chicken, dairy, corn, palm oil, pork, rice, soy, wheat, and wood fiber. All FLAG pathways include CO_2 and non-CO_2 gases, and include emissions related to agriculture and forestry 'to farm gate', excluding later processing emissions, which are covered under other SBTi pathways.

5.2.2 Greenhouse Gas Protocol Guidance on Carbon Removals and Land Use

In parallel and in coordination, The Greenhouse Gas Protocol is undertaking a process to develop new guidance on carbon removals and land use. This project is due for completion at the end of 2022. The GHG Protocol guidance will provide information to companies on how to account for and report the following activities in their greenhouse gas inventories:

- Land use/management and land use change
- Carbon removals and storage
- Bioenergy and other biogenic products
- Related topics

While the GHG Protocol guidance for land sector emissions is under development, we recommend companies refer to the documents in Table 9 below.

Table 9 Additional guidance documents for calculating FLAG emissions

PUBLISHER	DOCUMENT
GHG Protocol	• Corporate Standard • GHG Protocol Scope 3 Standard • Product Standard • Agriculture Guidance • LULUCF project guidelines • Brazil forestry tool
IPCC	• Guidelines for National GHG Inventories • 2006 Guidelines, Good Practice Guidance for LULUCF • 2019 Refinement
ISO	• ISO 14064 1:2018
Quantis	• Accounting for Natural Climate Solutions Guidance
Gold Standard	• Value Change Initiative

5.3 WHICH COMPANIES WILL BE REQUIRED TO SET FLAG TARGETS?

FLAG target-setting will eventually become a requirement for companies with significant land sector emissions after the GHG Protocol Land Sector and Removals Guidance is published. Although FLAG target setting guidance has not been finalized, the SBTi expects that companies that meet either of the following two conditions will be required to set a FLAG-specific target, separate from its target(s) for non-FLAG emissions:

- Any company from the following SBTi-designated sectors will required to set a FLAG target:
    - Timber, pulp and paper, rubber, wood or paper secondary processing, food production from agricultural and/or animal sources, food and beverage processing, food services, and food and staples retailing.
- Any company with significant FLAG-related emissions (threshold will be defined through the FLAG project). Land intensive activities are likely to be relevant in the GHG inventories (especially in scope 3, category 1) of companies from the following sectors:
    - Retailing; tobacco; hotels, leisure, and tourism activities; textiles; cosmetics; and any other sector or company with significant FLAG-related emissions.

It is important to note that FLAG science-based targets are separate from science-based targets that cover emissions from energy and industrial processes; consequently, FLAG mitigation cannot be used to meet non-FLAG targets (e.g., a company cannot bring forests into its value chain to meet another SBT).

5.4 WHAT CAN COMPANIES WITH FLAG EMISSIONS DO RIGHT NOW?

If your company has already calculated emissions from FLAG activities, these should be included within the target boundary of both near- and long-term science-based targets.

The SBTi FLAG project, which will provide tools and guidance for companies to set near-term SBTs, is expected to conclude in March 2022. Before then, companies that wish to set near-term science-based targets on FLAG emissions may opt to use the absolute contraction approach for all emissions (including FLAG emissions).

6 UPDATING AND COMMUNICATING TARGETS

6 UPDATING AND COMMUNICATING TARGETS

The number of businesses committing to reach net-zero emissions has grown rapidly over the last few years, and the SBTi understands that many companies have already made commitments to net-zero in advance of the launch of the Net-Zero Standard.[9] The below guidance is designed to help align existing commitments with the Net-Zero Standard and communicate these changes with stakeholders.

6.1 HOW CAN COMPANIES ENSURE NEAR-TERM TARGETS ALIGN WITH THE NET-ZERO STANDARD?

In response to the urgency and scale of the climate emergency, the SBTi is ratcheting up its expectations for businesses by ensuring all targets align with a 1.5°C future. The new strategy is being rolled out in response to increasing urgency for climate action and the success of science-based targets to date.

From 15 July 2022 onwards, the SBTi will only validate targets aligned with a minimum level of ambition of 1.5°C for scope 1 and 2 and well-below 2°C for scope 3. In addition to this, the SBTi is reducing the maximum timeframe for near-term targets from 15 to 10 years.

Please review the new requirements for near-term science-based targets in Table 10 below. If setting new near-term science-based targets, your company's targets must meet these criteria to be eligible for net-zero validation. If your company already has a validated SBT that does not fulfil the ambition criteria for scope 1 and 2 or scope 3, it must be updated, however, companies will not be required to update targets to meet the new timeframe requirement.[10]

For companies with emission reduction targets that do not already align with the changes to near-term SBTi criteria, we invite you upgrade or submit your science-based target. Companies may also follow a simplified voluntary ambition update process to if they meet certain conditions. More information can be found on our website and in the Target Validation Protocol document.

Table 10 Summary of changes to near-term SBTi criteria

CRITERION	UPDATES TO CRITERIA
Timeframe	Under the previous versions of the SBTi criteria, near-term science-based targets could have a target year 5-15 years from the date of submission. Under V5 of the SBTi criteria, target years must be 5-10 years from the date of submission.
Scope 1 & 2 ambition	The minimum scope 1 and 2 ambition of near-term science-based targets has increased from well-below 2°C to 1.5°C
Scope 3 ambition	The minimum scope 3 ambition of near-term science-based targets has increased from 2°C to well-below 2°C. Supplier engagement targets will remain eligible.

9 Analysis by Climate Action Tracker tells us that 73% of global emissions are covered by net-zero targets, and the ECIU and Oxford's March 2021 report showed that, of the 2,000 publicly-traded companies included in the Forbes Global 2000 list, 21% of these companies had net-zero targets.

10 Companies that committed to the Business Ambition for 1.5˚C via Option 2 may still gain validation for their net-zero targets if their targets are aligned to well-below 2˚C, however these targets must be eventually upgraded. Please see the BA1.5˚C campaign FAQ for more details.

6.2 HOW CAN COMPANIES ENSURE LONG-TERM TARGETS ALIGN WITH THE NET-ZERO STANDARD?

An essential component of a corporate net-zero strategy is a long-term science-based target. While companies may reach a balance between emissions and removals before they reach the depth of decarbonization required to limit warming to 1.5ºC, this is a transient state on the journey to net-zero emissions. Companies must reduce emissions to this level before claiming to have reached net-zero. In other words, a company's net-zero target date may not come before its long-term science-based target date.

For companies that have not set long-term emission reduction targets, we encourage you to model long-term science-based targets and validate them through the SBTi to demonstrate commitment to aligning with science as part of your net-zero ambition.

For companies that have set long-term emission reduction targets to reach net-zero that are not as ambitious as long-term science-based targets, we recommend that you model long-term science-based targets, revisit your implementation strategy, and consider the possibility of increasing the ambition of your current long-term targets to align with science.

For companies that have set net-zero target dates but feel they will be unable to reach the level of emission reductions required by their long-term science-based target in that timeframe, we advise that you review your implementation strategies to explore additional opportunities to reduce emissions as a first step. If you expect you will not be able to meet the required level of emission reductions by that date, the next option is to consider moving the net-zero target date further into the future.

6.3 HOW TO COMMUNICATE WITH STAKEHOLDERS WHEN NET-ZERO TARGETS DO NOT MEET THE NET-ZERO STANDARD REQUIREMENTS

We understand that when companies have already set net-zero targets, navigating communication with stakeholders can be challenging if current targets do not comply with the Net-Zero Standard. In this section, we provide advice and guidance on how to communicate with stakeholders in this situation.

We have developed some messages to support companies with this process below. Please note that these are only suggestions and companies may adapt these points to suit their needs.

- To be confident that our actions are in line with climate science and mitigate the risk of following a pathway that may not be consistent with addressing the climate crisis, we have reviewed our net-zero targets against the SBTi's Net-Zero Standard.
- As part of this process, we have identified clear next steps to adjust our current commitment and/or target(s) to align with this first global science-based Net-Zero Standard. We believe this will help ensure the robustness and impact of our targets.
- Responding to the urgency and scale of the climate emergency, the SBTi is ratcheting up its expectations for businesses. To support this, we must listen to the science and enhance the ambition of our net-zero commitment.
- We are committed to following a science-based net-zero pathway, and as part of this, we are reviewing our climate mitigation strategy to understand opportunities to enhance our ambition.

7 THE NET-ZERO STANDARD CRITERIA

7 THE NET-ZERO STANDARD CRITERIA

7.1 BACKGROUND TO THE NET-ZERO STANDARD CRITERIA

The Net-Zero Standard Criteria were developed through extensive stakeholder consultation, in collaboration with the Net-Zero Expert Advisory Group. The Net-Zero Standard Criteria include all criteria that must be met for net-zero target(s) to be validated by the SBTi. This document also includes recommendations which are important for transparency and best practice but are not required.

Although this document contains all criteria for setting near-term science-based targets, companies should refer to the SBTi Criteria as their primary reference when setting near-term science-based targets. The SBTi Criteria document also includes additional recommendations for near-term targets that are not included in this document. It is important to note that near-term criteria and recommendations are subject to SBTi's annual update of corporate criteria.

These criteria apply only to companies that are not classified as financial institutions and Small and Medium Enterprises (SMEs). Financial institutions can set targets using the SBTi guidance and criteria for financial institutions. SMEs should use the streamlined process to set targets in line with climate science.

In addition, companies must follow the GHG Protocol Corporate Standard, Scope 2 Guidance, and Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

The Target Validation Protocol describes the underlying principles, process, and criteria followed to assess targets and to determine conformance with Criteria[11]. The SBTi strongly recommends that companies review Table 7 in the Target Validation Protocol that further details SBTi criteria compliance and non-compliance before developing targets.

7.2 DISCLAIMER

While every effort is made to keep companies informed of the latest criteria and recommendations, the initiative reserves the right to make adjustments as needed to reflect the most recent emissions scenarios, partner organization policies, and greenhouse gas accounting practices.

The initiative also reserves the right to withdraw the validation of an approved target if it becomes apparent that incorrect information was communicated during the target validation process that results in any of the criteria existing during the assessment not being met, or if requirements following the approval of the target are not respected (i.e., target progress reporting and recalculations).

Unless otherwise noted (including specific sections), all criteria apply to scopes 1, 2, and 3.

7.3 TERMINOLOGY

This document explains the criteria, which are requirements that companies must follow, and recommendations, which companies should follow, to align with the Net-Zero Standard. This document

11 The TVP currently only applies to near-term SBT criteria but is expected to be updated to include net-zero targets in the coming months.

uses precise language to indicate requirements, recommendations, and allowable options that companies may choose to follow.

- The terms “shall” or “must” are used throughout this document to indicate what is required for targets to be in conformance with the Net-Zero Standard.
- The term “should” is used to indicate a recommendation, but not a requirement.
- The term “may” is used to indicate an option that is permissible or allowable.

The terms “required” or “must” are used in the guidance to refer to requirements. “Can” and “is encouraged” may be used to provide recommendations on implementing a requirement or “cannot” may be used to indicate when an action is not possible.

7.4 GENERAL CRITERIA

7.4.1 Target boundary

7.4.1.1 Organizational boundary

C1 — Organizational boundary: It is recommended that companies submit targets only at the parent- or group level, not the subsidiary level. Parent companies must include the emissions of all subsidiaries in their target submission, in accordance with the boundary criteria above. In cases where both parent companies and subsidiaries submit targets, the parent company’s target must also include the emissions of the subsidiary if it falls within the parent company’s emissions boundary given the chosen inventory consolidation approach[12].

R1 – Setting organizational boundaries: The SBTi strongly recommends that a company’s organizational boundary, as defined by the GHG Protocol Corporate Standard, is consistent with the organizational boundary used in the company’s financial accounting and reporting procedures.

7.4.1.2 GHG coverage

C2 — Greenhouse gases: The targets must cover all relevant GHGs as required per the GHG Protocol Corporate Standard.

7.4.1.3 Scope coverage

C3 — Scope 1 and Scope 2: The targets must cover company-wide scope 1 and scope 2 emissions, as defined by the GHG Protocol Corporate Standard

C4 — Scope 3: If a company’s relevant scope 3 emissions are 40% or more of total scope 1, 2, and 3 emissions, scope 3 must be included in the near-term science-based targets. All companies involved in the sale or distribution of natural gas and/or other fossil fuels shall set scope 3 targets for the use of sold products, irrespective of the share of these emissions compared to the total scope 1, 2, and 3 emissions of the company. All companies shall include emissions from all relevant scope 3 categories in long-term science-based targets.

12 This criterion applies only to subsidiaries. Brands, licensees, and/or specific regions or business divisions of a company will not be accepted as separate targets unless they fall outside of a parent company’s chosen consolidation approach

7.4.1.4 Emissions coverage

C5 — Scope 1 and 2 significance thresholds: Companies may exclude up to 5% of scope 1 and scope 2 emissions combined in the boundary of the inventory and target[13].

C6 — Scope 3 emissions coverage for near-term targets: Companies must set one or more emission reduction targets and/or supplier or customer engagement targets that collectively cover(s) at least two-thirds (67%) of total scope 3 emissions considering the minimum boundary of each category in conformance with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

C7 — Scope 3 emissions coverage for long-term targets: The boundary of long-term science-based targets shall cover at least 90% of total scope 3 emissions. Exclusions in the GHG Inventory and target boundary must not exceed 10% of total scope 3 emissions.

R2 — Targets covering optional scope 3 emissions: Targets to reduce scope 3 emissions that fall outside the minimum boundary of scope 3 categories are not required but are encouraged when these emissions are significant. Companies may cover these emissions with a scope 3 target, but such targets cannot count towards the thresholds defined in C6 and C7 for scope 3 emissions (i.e., these targets are above and beyond the company's scope 3 targets). For reference, consult page 48 in the GHG Protocol Scope 3 Standard and the Target Validation Protocol for a list of products that generate direct and indirect use-phase emissions.

7.4.2 Method validity (near and long-term targets)

C8 — Method validity: Targets must be modelled using the latest version of methods and tools approved by the initiative. Targets modelled using previous versions of the tools or methods may only be submitted to the SBTi for validation within 6 months of the publication of the revised method or the publication of relevant sector-specific tools.

7.4.3 Emissions accounting requirements

C9 — Scope 2 accounting approach: Companies shall disclose whether they are using a location- or market-based accounting approach as per the GHG Protocol Scope 2 Guidance to calculate base year emissions and to track performance against a science-based target. GHG Protocol requires measuring and reporting scope 2 emissions using both approaches. However, a single and consistent approach shall be used for setting and tracking progress toward a SBT (e.g., using location-based approach for both target setting and progress tracking).

C10 – Scope 3 screening: Companies must complete a scope 3 inventory covering gross scope 3 emissions for all its emissions sources as set out as the minimum boundary of each scope 3 category per the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard[14].

C11 — Bioenergy accounting: CO_2 emissions from the combustion, processing and distribution phase of bioenergy and the land use emissions and removals[15] associated with bioenergy feedstocks, shall

13 Where a company's scope 1 or 2 emissions are deemed immaterial (i.e., under 5% of total combined scope 1 and 2 emissions), companies may set their SBT solely on the scope (either scope 1 or scope 2) that covers more than 95% of the total scope 1 and 2 emissions. The company must continue to report on both scopes and adjust their targets as needed, in accordance with the GHG Protocol's principle of completeness and as per C32 and C33.

14 For a definition of the minimum boundaries of scope 3 categories and emissions sources that fall outside the minimum boundaries, see Table 5.4 (page 35) of the Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

15 The positive impact of exceeding zero emissions due to biogenic removals shall not be accounted for in a company's target formulation or as progress towards SBTs. In addition, removals that are not directly associated with bioenergy feedstock production are not accepted to count as progress towards SBTs or to net emissions in a company's GHG inventory.

be reported alongside a company's GHG inventory. Furthermore, CO_2 emissions from the combustion, processing and distribution phase of bioenergy and the land use emissions and removals associated with bioenergy feedstocks shall be included in the target boundary when setting a science-based target (in scopes 1, 2, and/or 3, as relevant) and when reporting progress against that target.

Land-related emissions accounting shall include CO_2 emissions from direct land use change (LUC) and non-LUC emissions, inclusive of N_2O and CH_4 emissions from land use management. Including emissions associated with indirect LUC is optional.

Companies are expected to adhere to any additional GHG Protocol Guidance on bioenergy accounting when released in order to maintain compliance with C11.

C12 — Carbon credits: The use of carbon credits must not be counted as emission reductions toward the progress of companies' near-term or long-term science-based targets. Carbon credits may only be considered to be an option for neutralizing residual emissions (see C28) or to finance additional climate mitigation beyond their science-based emission reduction targets (see R10).

C13 — Avoided emissions: Avoided emissions fall under a separate accounting system from corporate inventories and do not count toward near term or long-term science-based emission reduction targets.

R4 – Biofuel certification: The SBTi recommends that companies using or producing biofuel(s) for transport should support their bioenergy GHG accounting with recognized biofuel certification(s) to disclose that the data on land-related emissions and removals represents the relevant biofuel feedstock production.

R5 — Bioenergy data reporting: The SBTi recommends that companies report direct biogenic CO_2 emissions and removals from bioenergy separately. Emissions and removals of CO_2 associated with bioenergy shall be reported as net emissions according to C11, at a minimum, but companies are encouraged to also report gross emissions and gross removals from bioenergy feedstocks.

7.5 NET-ZERO TARGET FORMULATION

7.5.1 Net-zero definition

C14 — State of net-zero emissions: Companies shall set one or more targets to reach a state of net-zero emissions, which involves: (a) reducing their scope 1, 2 and 3 emissions to zero or to a residual level that is consistent with reaching net-zero emissions at the global or sector level in eligible 1.5°C scenarios or sector pathways and; (b) neutralizing any residual emissions at the net-zero target date and any GHG emissions released into the atmosphere thereafter.

7.5.2 Structure

C15 — Net-zero target structure: Companies that aim to reach a state of net-zero emissions in a timeframe that exceeds 10 years, shall set both, near-term and long-term science-based emission reduction targets according to the requirements and recommendations described in this standard. If a company's near-term target meets the ambition requirements of a long-term target, then a long-term target is not required.

7.5.3 Timeframe

C16 — Base year: The company shall use the same base year for its long-term science-based targets as its near-term SBTs. The base year must be no earlier than 2015.

C17 — Target year(s): Near-term targets must cover a minimum of 5 years and a maximum of 10 years from the date the target is submitted to the SBTi for official validation. Long-term targets shall have a target year no later than 2050. For companies in sectors that reach net-zero before 2050 (e.g., power generation), long-term SBTs covering relevant activities must have a target year no later than the sector's year of net-zero in eligible 1.5˚C pathways

C18 — Progress to date: The minimum forward-looking ambition of near-term targets is consistent with reaching net-zero by 2050 at the latest, assuming a linear absolute reduction, linear intensity reduction, or intensity convergence between the most recent year and 2050 (not increasing absolute emissions or intensity)[16].

R6 — Consistency: It is recommended that companies use the same base years for all near-term targets

7.5.4 Ambition

7.5.4.1 Scope 1 and 2 near- and long-term targets

C19 —Level of ambition for scope 1 and 2 targets: At a minimum, scope 1 and scope 2 targets must be consistent with the level of decarbonization required to keep global temperature increase to 1.5°C compared to pre-industrial temperatures. This applies to both near-term and long-term targets

C20 — Absolute targets: Absolute targets for scope 1 and scope 2 are eligible when they are at least as ambitious as the minimum of the approved range of emissions scenarios consistent with the 1.5°C goal or aligned with the relevant 1.5°C sector-specific absolute pathway (long-term targets only).

C21 — Intensity targets: Intensity targets for scope 1 and scope 2 emissions are eligible when they are modelled using an approved sector pathway applicable to companies' business activities.

7.5.4.2 Scope 3 near- and long-term targets

C22 — Level of ambition for scope 3 emissions reductions targets: At a minimum, near-term scope 3 targets (covering the entire value chain or individual scope 3 categories) must be aligned with methods consistent with the level of decarbonization required to keep global temperature increase well-below 2°C compared to pre-industrial temperatures. For long-term scope 3 targets, this minimum ambition is increased to 1.5°C.

C23 – Supplier or customer engagement targets: Near-term targets to drive the adoption of science-based emission reduction targets by their suppliers and/or customers are in conformance with SBTi criteria when the following conditions are met:

- **Boundary:** Companies may set engagement targets around relevant and credible upstream or downstream categories.
- **Formulation:** Companies shall provide information in the target language on what percentage of emissions from relevant upstream and/or downstream categories is covered by the engagement

16 For targets submitted for validation in 2022, the most recent inventory data submitted must be for 2019 at the earliest. Historically, the SBTi has only allowed two years prior as valid most recent year inventories, however, due to the COVID-19 pandemic, the SBTi will accept 2019 inventories in 2022

target or, if that information is not available, what percentage of annual procurement spend is covered by the target.

- **Timeframe:** Companies' engagement targets must be fulfilled within a maximum of 5 years from the date the company's target is submitted to the SBTi for an official validation[17].
- **Level of ambition:** The company's suppliers/customers shall have science-based emission reduction targets in line with SBTi resources.

C24 – Absolute targets (scope 3): Absolute targets for scope 3 are eligible when they are at least as ambitious as the minimum of the approved range of emissions scenarios consistent with the well-below 2°C goal (near-term targets), the 1.5°C goal (long-term targets), or aligned with the relevant 1.5°C sector-specific absolute pathway (long-term targets only).

C25 – Intensity targets (scope 3): Intensity targets for scope 3 are eligible when they are modelled using an approved sector-specific physical intensity pathway where applicable to companies' business activities or using eligible physical intensity or economic intensity approaches. This applies to both, near-term and long-term targets. Intensity targets on upstream scope 3 categories must reflect both supply-side and demand-side mitigation levers, where specified by sector-specific guidance.

R7 – Supplier engagement: Companies should recommend that their suppliers use the SBTi guidance and tools available to set science-based targets. SBTi validation of supplier science-based targets is recommended but not required. It is recommended that suppliers classified as SMEs, submit targets through the SME streamlined route.

7.5.4.3 Combined targets (near and long-term targets)

C26 — Combined scope targets: Targets that combine scopes (e.g., 1+2, 1+2+3) are permitted if the SBTi can review the ambition of the individual components of the target and confirm that each individual component meets the relevant ambition criteria.

7.5.4.4 Renewable electricity targets (near and long-term targets)

C27 — Renewable electricity: Targets to actively source renewable electricity at a rate that is consistent with 1.5°C scenarios are an acceptable alternative to scope 2 emission reduction targets. The SBTi has identified 80% renewable electricity procurement by 2025 and 100% by 2030 as thresholds (portion of renewable electricity over total electricity use) for this approach in line with the recommendations of RE100. Companies that already source electricity at or above these thresholds shall maintain or increase their use of renewable electricity to qualify.

R8 — Purchased heat and steam: For science-based target modeling purposes using the SDA, it is recommended that companies model purchased heat and steam related emissions as if they were part of their direct (i.e., scope 1) emissions.

R9 — Efficiency considerations for target modeling: If companies are using a method that does not already embed efficiency gains for the specific sector, market, and the decarbonization projected for the power sector based on 1.5°C scenario, it is recommended that these factors be considered when modeling electricity-related scope 2 targets.

17 For targets submitted for an official validation in the first half of 2022, the valid target years are up to 2026 inclusive. For those submitted in the second half of 2022, valid target years are up to 2027 inclusive.

7.5.5 Beyond value chain mitigation

R10 — Beyond value chain climate mitigation: Companies should take action or make investments outside their own value chains to mitigate GHG emissions in addition to their near-term and long-term science-based targets. For example, a company could provide annual support to projects, programs and solutions that provide quantifiable benefits to climate, especially those that generate additional co-benefits for people and nature. Companies should report annually on the nature and scale of those actions pending further guidance.

7.5.6 Neutralization

C28 — Neutralization of unabated emissions to reach net-zero: Companies shall remove carbon from the atmosphere and permanently store it to counterbalance the impact of any unabated emissions that remain once companies have achieved their long-term science-based target, and thereafter.

R11 — Neutralization milestones: Companies should disclose information such as planned milestones and near-term investments that demonstrate the integrity of commitments to neutralise unabated emissions at net-zero.

7.5.7 Target formulation

C29 - Target formulation: Companies shall publicly set a net-zero target, that clearly and transparently communicates each of the relevant components of the target, including: (a) net-zero target year; (b) magnitude of emissions reductions that will be achieved for near-term and long-term SBTs; (c) base year.

7.6 REPORTING, RECALCULATION AND TARGET VALIDITY

7.6.1 Reporting

C30 —Frequency: The company shall publicly report its company-wide GHG emissions inventory and progress against published targets on an annual basis.

C31 — Reporting completeness: Companies shall publicly report information pertaining to progress against validated targets, including separately reporting emissions and removals in the annual GHG Inventory, as specified by current SBTi Criteria.

R12 — Where to disclose: There are no specific requirements regarding where the inventory and progress against published targets should be disclosed, as long as it is publicly available. The SBTi recommends disclosure through standardized, comparable data platforms such as CDP's climate change annual questionnaire, though annual reports, sustainability reports and the company's website are acceptable.

7.6.2 Recalculation and target validity

C32 — Mandatory target recalculation: To ensure consistency with the most recent climate science and most current SBTi criteria, targets must be reviewed, and if necessary, recalculated and revalidated, at a minimum every 5 years. For companies with targets approved in 2020 or earlier, targets must be reviewed and revalidated, if necessary, by 2025. Companies with an approved target that requires recalculation must follow the most recent applicable criteria at the time of resubmission.

C33 — Triggered target recalculation: Targets shall be recalculated, as needed, to reflect significant changes that could compromise relevance and consistency of the existing target. The following changes shall trigger a target recalculation:

- Scope 3 emissions become 40% or more of aggregated scope 1, 2 and 3 emissions (this criterion only applies to near-term SBTs)
- Emissions of exclusions in the inventory or target boundary change significantly
- Significant changes in company structure and activities (e.g., acquisitions, divestitures, mergers, insourcing or outsourcing, shifts in goods or service offerings)
- Significant adjustments to the base year inventory or changes in data to set targets such as growth projections (e.g., discovery of significant errors or several cumulative errors that are collectively significant)

Other significant changes to projections/assumptions used in setting the science-based targets.

C34— Target validity: Companies with approved targets must announce their target publicly on the SBTi website within 6 months of the approval date. Targets unannounced after 6 months must go through the approval process again unless a different publication time frame has been agreed in writing with the SBTi.

R13 — Validity of target projections: The SBTi recommends that companies check the validity of target-related projections on an annual basis. The company should notify the SBTi of any significant changes and report these major changes publicly, as relevant.

7.7 SECTOR-SPECIFIC GUIDANCE

C35 — Requirements from sector-specific guidance: Companies must follow requirements for target setting and minimum ambition levels as indicated in relevant sector-specific methods and guidance at the latest, 6 months after the sector guidance publication. A list of the sector-specific guidance and requirements is available below, in the Target Validation Protocol, and the SBTi Corporate Manual.

7.7.1 Fossil fuel sales, distribution, and other business

C36 – Companies in the fossil fuel production business or with significant revenue from fossil fuel business lines: Companies involved in exploration, extraction, mining and/or production of oil, natural gas, coal as well as other fossil fuels cannot get their targets validated at this stage, irrespective of percentage revenue generated by these activities. Companies which derive 50% or more of their revenue from fossil fuels cannot have their targets validated at this time and must follow the respective sector methodology once published.

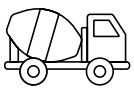
C37 — Sale, transmission, distribution of oil, natural gas, coal as well as other fossil fuels: Companies that sell, transmit, or distribute natural gas or other fossil fuel products shall set emission reduction scope 3 targets for the "Use of sold products" category that are at a minimum consistent with the level of decarbonization required to keep global temperature increase to 1.5°C compared to pre-industrial temperatures. Customer engagement targets as described in C23 are not applicable for this criterion. More guidance is detailed in C36 on the 50% revenue threshold for companies with fossil fuel activities.

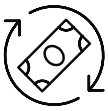
8 SECTOR GUIDANCE FOR LONG-TERM SCIENCE-BASED TARGETS

8 SECTOR GUIDANCE FOR LONG-TERM SCIENCE-BASED TARGETS

Sector-specific guidance and methods are currently available for many sectors. All new sector-specific guidance that becomes available will be uploaded to the sector development page on the SBTi website. The SBTi has sector-specific requirements related to the use of target-setting methodologies and minimum ambition levels.

Table 12 Sector-specific guidance for long-term SBTs.

SECTOR	ELIGIBLE METHODS	GUIDANCE/NOTES
APPAREL AND FOOTWEAR 	See “All other sectors”	Optional guidance is available for companies in the Apparel and Footwear sector.
BUILDINGS 	When setting long-term SBTs, companies in these sectors are recommended to set absolute or intensity targets using the residential buildings pathway, service buildings pathway, or cross-sector pathway (absolute targets only).	Real Estate Investment Trusts (REITs) wishing to set targets must specify if they are a mortgage-based REIT or equity-based REIT. Equity REITs must pursue the regular target validation route for companies. Mortgage REITs must instead utilize the Financial Institutions guidance for setting SBTs. The SBTi is in the scoping phase of developing guidance for companies and sectors of the built environment.
CEMENT 	When setting long-term SBTs, companies are recommended to set absolute or intensity targets using the cement pathway, or cross-sector pathway (absolute targets only).	The SBTi is in the scoping phase of developing guidance for companies in the cement sector.
CHEMICALS 	See “All other sectors”	The SBTi is in the scoping phase of developing guidance for companies in the chemicals sector.

FINANCIAL INSTITUTIONS 	The SBTi is developing a Net-Zero Standard for financial institutions and cannot validate targets for this sector before the guidance is completed.	The initiative defines a financial institution as one that engages in investment activities as part of its core functions. These include, but are not limited to, the following: 1. Asset management/asset owners 2. Retail and commercial banking activities 3. Insurance companies (when functioning asset managers) 4. Mortgage real estate investment trusts (REITs) In addition, if at least 5% of a company's revenue comes from activities such as those described above, they would be considered a financial institution.
FOREST, LAND-USE & AGRICULTURE (FLAG) 	Some companies will be required to set FLAG targets that are separate from their SBTs covering all other emissions. FLAG targets must use the FLAG-sector pathway (absolute targets) or a commodity pathway (intensity targets). Commodity pathways will be available for beef, dairy, pork, chicken, roundwood, rice, soy, palm oil, maize, and wheat. Forestry and timber companies will be required to use the intensity convergence method for roundwood.	The FLAG sector guidance is expected to be finalized in March 2022.
FOSSIL FUEL SALE/ TRANSMISSION/ DISTRIBUTION[18] 	In addition to guidance for the primary sector, scope 3 targets must be set on scope 3 category 11 "use of sold products" emissions using absolute contraction.	Companies must set targets for scope 3 category 11, irrespective of the share of these emissions compared to the total S1+S2+S3 emissions of the company. Separate scope 3 targets may need to be set in this case.

18 This information is only applicable to companies that receive less than 50% of their revenue from fossil fuel sale, transmission, or distribution. For companies that receive 50% or more of their revenue from these activities, please refer to the Oil & Gas section above

INFORMATION AND COMMUNICATION TECHNOLOGY PROVIDERS 	See “All other sectors”	Optional guidance is available for companies in the ICT sector.
IRON AND STEEL 	When setting long-term SBTs, companies in these sectors are recommended to set absolute or intensity targets using the iron and steel pathway, or cross-sector pathway (absolute targets only).	The SBTi is in the scoping phase of developing guidance for companies in the steel sector.
OIL & GAS 	The SBTi is developing target-setting methods for oil & gas companies and cannot validate targets for this sector before the guidance is completed.	For target validation by the SBTi, “Oil & Gas” includes, but is not limited to, integrated Oil & Gas companies, Integrated Gas companies, Exploration & Production companies, Refining and Marketing companies, Oil Products Distributors, Gas Distribution and Gas Retailers. The SBTi will assess companies on a case-by-case basis to determine whether companies will be classified as Oil & Gas companies for SBTi validation, and if so, reserve the right to not move forward with their validation until after the SBTi Oil & Gas sector development has been completed.
POWER GENERATION 	The intensity convergence method must be used by power generation companies, as specified in the Guidance for Electric Utilities.	Companies in the power sector with scope 3 emissions that represent 40% or more of overall emissions must set an intensity target covering all sold electricity (including purchased and resold electricity in scope 3 category 3), in addition to a target covering power generation in scope 1. Companies in this sector must set targets to reach net-zero no later than 2040.

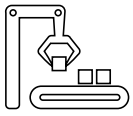
<table>
<tr><td>TRANSPORT SERVICES (AVIATION/ SHIPPING/ TRUCKS/ CARS)
  </td><td rowspan="2">When setting long-term SBTs, companies in these sectors are recommended to set absolute or intensity targets using the aviation pathway, maritime transport pathway, or cross-sector pathway (absolute targets only). The target boundary must cover well-to-wheel emissions (WTW), as specified in the SBTi transport resources.

Companies may not set intensity targets covering scope 3 category 6 (business travel) using the aviation sector pathway</td><td>Refer to the SBTi Transport guidance for a description of all transport sub-sectors covered by the SDA Transport tool and to learn about best practices in target-setting for transport activities.

Well-to-wheel boundary (transport services and OEMs):

Companies setting targets for transport-related emissions should cover well-to-wheel emissions (WTW) in their target boundary to accurately capture emissions shifts between the tank-to-wheel (TTW) and the well-to-tank (WTT), for example, due to changes in power train technologies.

Tested vs. Real emissions (OEMs):

Original equipment manufacturers must convert their base year emissions figures for the use-phase of their products into real emissions with the use of global standards when available (e.g., Worldwide Harmonized Light Vehicle Test Procedure -WLTP). In the absence of a normalized test procedure for certain vehicle types, companies are invited to present and justify their own estimates/simulations based on fuel consumption-specific duty cycles to the SBTi.</td></tr>
<tr><td>TRANSPORT (ORIGINAL EQUIPMENT MANUFACTURERS/ AUTOMAKERS)
  </td></tr>
<tr><td>ALL OTHER SECTORS
  </td><td>When setting long-term SBTs, companies in all other sectors are recommended to set absolute targets using the cross-sector pathway. Sector-specific absolute or intensity targets may be used instead for emissions allocated to a relevant sector.</td><td>Companies should allocate emissions to relevant activities as per the Greenhouse Gas Protocol, where guidance is available. Emissions in scopes 1, 2, or 3 allocated to activities with a sector-specific pathway (e.g., steel production) may be covered by a sector-specific absolute or intensity target, except for upstream scope 3 categories where supply-side mitigation is important and not reflected by the pathway.</td></tr>
</table>

9 ACRONYMS

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AFOLU	Agriculture, Forest and Other Land Use
BVCM	Beyond value chain mitigation
CDR	Carbon Dioxide Removal
COP	Conference of the Parties
DAC	Direct Air Capture
EAG	SBTi Net-Zero Expert Advisory Group
FLAG	Forests, Land and Agriculture
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
LUC	Land-use change
LULUCF	Land-use, Land-use change and Forestry
NBS	Nature-based solutions
PPA	Power purchase agreement
REC	Renewable energy certificate
REDD	Reducing Emissions from Deforestation and Degradation
REIT	Real Estate Investment Trusts
SR15	IPCC Special Report on 1.5˚C
SAG	SBTi Scientific Advisory Group
SBT	Science-based target
SBTi	Science Based Targets initiative
SDA	Sectoral Decarbonization Approach
SME	Small & medium sized enterprises
TAG	SBTi Technical Advisory Group
UNEP	The United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
vPPA	Virtual power purchase agreement

10 GLOSSARY

10 GLOSSARY

Term	Definition	Comments
Abatement	Measures that companies take to prevent, reduce or eliminate sources of GHG emissions within their value chain. Examples include reducing energy use, switching to renewable energy and retiring high-emitting assets.	**Also see:** Decarbonization
Absolute contraction	Method used to calculate absolute emissions reduction targets that requires organizations to reduce annual emissions by an amount consistent with underlying mitigation pathways.	**Also see:** Science-based target methods
Beyond value chain mitigation (BVCM)	Mitigation action or investments that fall outside a company's value chain. This includes activities outside of a company's value chain that avoid or reduce greenhouse gas emissions, or that remove and store greenhouse gases from the atmosphere.	**Examples of BVCM include, but are not limited to:** Forestry, e.g., Jurisdictional REDD+ Conservation projects, e.g., peatland or mangrove Energy efficiency, e.g., cookstove projects Methane destruction, e.g., landfill gas projects Renewable energy, e.g., solar/ wind/biogas Industrial gases, e.g., N2O destruction at nitric acid facilities Scale-up of CDR technologies, e.g., Direct Air Capture (DAC) and Storage
Bioenergy	Energy generated from the combustion of biomass. In certain cases, bioenergy is considered "carbon neutral" because combustion-related CO_2 emissions are balanced by CO_2 that is sequestered during the growth of bioenergy feedstock.	
Biomass emissions	Organic material both aboveground and belowground, and both living and dead, e.g., trees, crops, grasses, tree litter, roots etc. Biomass includes the pool definition for above - and below - ground biomass.	

Carbon Dioxide Removal (CDR)	According to the Intergovernmental Panel on Climate Change (IPCC), "anthropogenic activities removing CO_2 from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products". The removals are either nature-based, geological or a hybrid.	
Climate change mitigation	According to the Intergovernmental Panel on Climate Change (IPCC), "a human intervention to reduce emissions or enhance the sinks of greenhouse gases."	**Also see:** Corporate Climate Mitigation Blueprint Mitigation strategy
Compensation (legacy terminology used in earlier versions of the SBTi Net-Zero Standard)	Actions that companies take to help society avoid or reduce emissions outside of their value chain.	SBTi is eliminating the term from use within its documentation. **Also see:** GHG emissions Offsetting Value chain emissions
Corporate climate targets	Goals set by a corporation to reduce the corporation's impact on the climate. Targets may include a variety of climate forcers across different corporate activities (i.e., operations, value chain, or products) and may use emissions abatement, compensation, or neutralisation	**Also see:** Abatement Compensation Neutralisation
Cross-sector pathway	One-size-fits all pathway for companies to calculate near-term and long-term absolute contraction SBTs, eligible for all companies except those in the power sector or FLAG sectors	Also see: Sector-specific pathway
Decarbonization	The process by which CO_2 emissions associated with electricity, industry, and transport are reduced or eliminated.	**Also see:** Abatement
Emissions (or GHG) inventories	According to the GHG Protocol, a "quantified list of an organization's GHG emissions and sources." Emissions inventories typically include emissions in scopes 1, 2, and 3.	**Also see:** Scope 1 inventory Scope 2 inventory Scope 3 inventory
Forests, land and agriculture (FLAG) emissions	GHG emissions from Forestry, Land use and Agriculture. Examples of key sources of FLAG emissions include deforestation, forest & grassland fires enteric fermentation, fertilizers, manure management and rice cultivation Reducing FLAG emissions, as well as enhancing land-related carbon sinks through activities such as reforestation, is an important climate change mitigation opportunity.	Other similar related terms are Agriculture, Forestry and Other Land uses (AFOLU) and Land-use, Land-use change and Forestry (LULUCF; AFOLU + agriculture GHGs)

Global emissions budget	A cumulative emissions threshold that must not be exceeded to limit global temperature rise by a specified amount and probability. Emissions budgets can be determined for CO_2 only or all greenhouse gases (GHGs).	**Also see:** Greenhouse gases Paris Agreement
Greenhouse gases (GHGs)	Gases which absorb and re-emit infrared radiation, thereby trapping it in Earth's atmosphere. Includes carbon dioxide (CO_2), water vapor, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).	
Greenhouse Gas (GHG) emission reduction targets	Goals set by an organization to reduce direct or indirect emissions by a specified amount	**Also see:** Greenhouse Gas emissions
Insetting	Insetting is used to describe projects that are wholly contained within a Scope 3 supply chain boundary of a company, a project partially within their Scope 3 supply chain boundary (spanning their supply chain and other companies' supply chains) and a project adjacent to a supply chain boundary.	There are multiple definitions for the term "insetting" in use and no standardization of the term.
Intensity convergence	Method used to calculate emissions intensity targets based on the principle of converging to a sector-wide physical emissions intensity in a future year of a mitigation pathway.	**Also see:** Science-based target methods Physical emissions intensity
Intergovernmental Panel on Climate Change (IPCC)	United Nations body for assessing the science related to climate change	**Also see:** IPCC Special Report on 1.5°C (SR15)
IPCC Special Report on 1.5˚C (SR15)	A Special Report requested by the United Nations on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. The report includes over 6,000 scientific references and was prepared by 91 authors from 40 countries	**Also see:** Paris Agreement Pre-industrial levels
Long-term science-based target	GHG reduction targets that are in line with what the latest climate science deems is necessary to reach net-zero at the global or sector level in 1.5°C pathways before 2050.	
Mitigation	A human intervention to reduce emissions or enhance the sinks of greenhouse gases (IPCC).	

Mitigation strategy	A set of measures planned by a company to mitigate GHG emissions that may include abatement, insetting, compensation and neutralisation.	**Also see:** Mitigation Abatement Insetting Compensation Neutralisation
Nature-based Solutions (NBS)	The WWF defines NBS as "Ecosystem conservation, management and/or restoration interventions intentionally planned to deliver measurable positive climate adaptation and /or mitigation benefits that have human development and biodiversity co-benefits managing anticipated climate risks to nature that can undermine their long-term effectiveness."	**Also see:** Carbon-dioxide removal Neutralisation Insetting
Near-term science-based target	GHG reduction targets that are in line with what the latest climate science deems necessary to limit warming to 1.5°C above pre-industrial levels and are achieved within a 5–10-year timeframe from the date of submission.	
Net-zero	Setting corporate net-zero targets aligned with meeting societal climate goals means (1) achieving a scale of value chain emissions reductions consistent with the depth of abatement at the point of reaching global net-zero in 1.5˚C pathways and (2) neutralizing the impact of any residual emissions by permanently removing an equivalent volume of CO_2.	**Also see:** Residual emissions
Neutralization	Measures that companies take to remove carbon from the atmosphere and permanently store it to counterbalance the impact of emissions that remain unabated.	**Also see:** Nature-based Solutions Carbon credits Carbon dioxide removal (CDR)
Residual emissions	Emissions sources that remain unabated in a specific year of a mitigation scenario. Long-term SBTs are consistent with the level of residual emissions in the year of global or sector net-zero in 1.5°C-aligned mitigation pathways with low or no overshoot.	**Also see:** Paris Agreement
Science-based targets (SBTs)	Targets that 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	**Also see:** Near-term science-based targets Paris Agreement Pre-industrial levels
Science-based target methods	Methods used to calculate science-based targets from a mitigation pathway, company input variables, and an allocation formula.	**Also see:** Absolute contraction Intensity convergence

SBTi Net-Zero Expert Advisory Group (EAG)	Advisory body to the SBTi consisting of representatives from civil society organizations, corporate climate action initiatives, research agencies, and other stakeholders that contribute specifically to the development of the Net-Zero Standard.	
SBTi Scientific Advisory Group (SAG)	Advisory body to the SBTi consisting of recognized experts in climate change mitigation, integrated assessment modelling, energy system and land-use dynamics, and other topics that contribute to developing the SBTi's scientific foundations.	
SBTi Technical Advisory Group (TAG)	Advisory body to the SBTi consisting of practitioners and experts in topics such as corporate sustainability, greenhouse gas accounting, and target-setting that provide invited feedback on SBTi methods, criteria changes, and guidance.	
Sector-specific pathways	Absolute emissions or emissions intensity pathways for a specific sector that may be used for calculating near-term and long-term intensity targets, as well as long-term absolute targets, in most cases.	**See also:** Mixed sector pathway
Removals	Measures that companies take to remove carbon from the atmosphere and permanently store it within or beyond the value chain.	**Examples include, but are not limited to:** Direct Air Capture (DAC) and storage Bioenergy with carbon capture and storage (BECCS) Improved soil management Improved forest management Land restoration, e.g., of peatland, terrestrial forests or mangroves Within the value chain, companies in the Forest, Land and Agriculture (FLAG) sectors are expected to deliver biogenic carbon removals as part of their science-based targets in addition to reductions (versus neutralizing unabated emissions that remain when a science-based target is met). **Also see:** Carbon dioxide removal (CDR) Neutralization

Scope 1 emissions	Defined by the GHG Protocol accounting standard as "A reporting organization's direct GHG emissions"	**Also see:** GHG emissions
Scope 2 emissions	Defined by the GHG Protocol accounting standard as "A reporting organization's (indirect) emissions associated with the generation of electricity, heating/ cooling, or steam purchased for own consumption"	**Also see:** GHG emissions
Scope 3 emissions	Defined by the GHG Protocol accounting standard as "A reporting organization's indirect emissions other than those covered in scope 2"	**Also see** GHG emissions Scope 2 inventory
The Paris Agreement	Stated by the UNFCCC, the Paris agreement is a "legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels"	**Also see:** Pre-industrial levels
Physical emissions intensity	A metric describing the emissions per physical unit of an activity (e.g., cement production). The intensity convergence method is based on the principle that all companies in a sector will converge to the same physical emissions intensity in a future year of mitigation pathways.	**Also see:** Decarbonization Pre-industrial levels Paris Agreement
United Nations Climate Change Conference (2021: COP26)	The annual Conference of the Parties brings together the 197 countries (Conference of the Parties, COP) that have ratified the United Nations Framework Convention on Climate Change (UNFCCC). As the twenty-sixth such gathering, it is known as COP26 and will take place in Glasgow in November 2021. The United Nations Environment Program (UNEP) states that "Under the Convention, nations have reached two key agreements on reducing greenhouse gas emissions: the Kyoto Protocol adopted in 1997, and the Paris Agreement adopted in 2015. The Paris accord is built around so-called "nationally determined contributions" as a means of achieving the goal of limiting the global temperature increase, and to step up those contributions over time"."	**Also see:** Paris Agreement
Value chain emissions	A company's scope 1, 2, and 3 emissions as defined by the GHG Protocol accounting standard	**Also see:** Scope 1 inventory Scope 2 inventory Scope 3 inventory

11 ACKNOWLEDGEMENTS

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SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

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