SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

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Science-Based Target Setting Manual

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DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

PARTNER ORGANIZATIONS

CDP DISCLOSURE INSIGHT ACTION

UN GLOBAL COMPACT

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Executive summary

Key findings

- Companies can play their part in combating climate change by setting greenhouse gas (GHG) emissions reduction targets that are aligned with reduction pathways for limiting global temperature rise to 1.5°C or well-below 2°C compared to pre-industrial temperatures. These targets are termed science-based targets (SBTs).
- SBTs offer a plethora of advantages over incremental GHG reduction targets and boost companies' competitive advantage in the transition to the low-carbon economy.
- Multiple science-based target setting methods are available, which may be used to calculate targets that vary in terms of metric and ambition.
- To ensure rigor and credibility, SBTs should meet a range of criteria related to target duration, ambition, and coverage of internal and value chain sources.
- Getting internal stakeholders on board through all stages of the target-setting process requires careful planning.
- Once an SBT has been set, communicating it fully, simply and clearly is important to accurately inform stakeholders and build credibility.

Context

In the Paris Agreement, national governments committed to limit temperature rise to well-below 2 degrees Celsius (°C) and pursue efforts to limit temperature rise to 1.5°C. Beyond 1.5°C, the world will increasingly experience dangerous climate impacts and humanitarian crises linked to drought, sea level rise, flooding, extreme heat and ecosystem collapse.

Despite the efforts of governments and other actors, total anthropogenic GHG emissions continue to increase. Under current trajectories, global mean temperatures are projected to increase by 2.2°C to 4.4°C by the end of this century. Even under existing country-level commitments, global emissions in 2030 will be about 90 percent higher than they should be under 1.5°C scenarios (Climate Action Tracker 2018).

Companies have a pivotal role in ensuring that the global temperature goals are met, but most existing company targets are not ambitious enough. The majority of global GHG emissions are directly or indirectly influenced by the corporate sector. Many companies, recognizing the risk climate change poses to their business and the opportunity it creates for leadership and innovation, have set GHG emissions reduction targets. Yet, to date, most companies' targets do not match the ambition and timelines consistent with a 1.5°C future.

SBTs represent a more robust approach for companies to manage their emissions over the long haul. SBTs are grounded in an objective scientific evaluation of what is needed for global GHG emissions reduction determined by relevant carbon budgets, rather than what is achievable by any one company. They offer a firm foundation for companies' long-term climate change strategies, boosting their competitive advantage in the transition to the low-carbon economy.

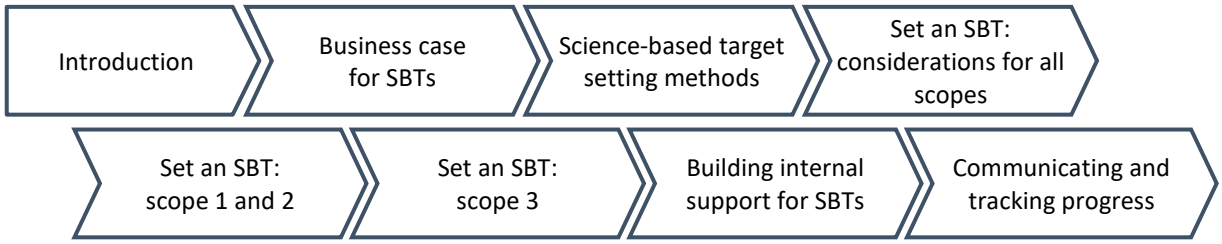
Companies are increasingly adopting SBTs as part of a resilient business plan that drives ambitious climate action. As of April 2020, more than 350 companies have set an SBT and more than 500 have committed to set one in the near future through the Science Based Targets initiative (see below). Many of these companies cite strengthened stakeholder confidence, reduced regulatory risk, greater

profitability and competitiveness, and increased innovation as motivators. Despite growth in the initiative, key high-emitting sectors are underrepresented. Driving adoption in these sectors, alongside the development of actionable, sector-specific guidance, is a high priority.

About this report

This manual provides stepwise guidance and recommendations for setting SBTs. It covers the main phases in setting an SBT, from understanding the business benefits of setting SBTs to communicating progress against established SBTs (Figure ES-1).

Figure ES-1: Chapters in the Manual



Note: The paper Foundations of Science-based Target Setting provides supplementary technical information to Chapter 3 on how science-based target setting methods have been developed in accordance with the best available climate science.

This manual is a product of the Science Based Targets initiative (SBTi), which identifies and promotes innovative approaches to setting ambitious and meaningful corporate GHG reduction targets. The content of this manual draws on interviews with more than 20 companies with experience in setting SBTs. It also draws upon recommendations and criteria developed by the SBTi for the validation of SBTs as part of its Call to Action campaign (see Box 1-1).[1] A technical advisory group comprising experts from industry and non-governmental organizations (NGOs) provided input on multiple drafts of the manual.

Companies are the primary intended audience, although the manual may be useful for other stakeholders interested in SBTs. Companies (and supporting consultants) should consult this manual when considering or developing GHG emissions reduction targets. Companies may also use this manual to establish whether existing targets are aligned with the latest science. Above all, companies should use this manual (and SBTs more specifically) as a framework for their overarching GHG management strategy. Other stakeholders, including investors, environmental groups, policy makers, and academics, can use this manual to learn about best practices for setting SBTs.

This manual represents a snapshot of existing best practices in setting SBTs. Over time, the expectation of what constitutes an SBT may change to reflect advances in scientific modelling, climate science and global emissions reduction efforts, and to reflect lessons learned from setting SBTs. New data, resources and tools that support setting SBTs based on sectoral or geographic considerations may become available in the future. While this manual concentrates on currently available tools, it outlines general recommendations that should guide future science-based target setting practices as the underlying science evolves.

[1] Please see this page for a detailed guideline to the SBTi Call to Action.

This manual does not provide guidance on implementing GHG reduction measures. Successful strategies for achieving SBTs will most likely include a mix of measures depending on a company's goals, starting position, the cost of various alternatives and external market conditions. Deciding which strategy is most appropriate for any one company is beyond the scope of this manual.

Key issues in setting SBTs

Companies have sought guidance on a range of issues connected to setting SBTs. Some of the most pressing include:

What are the business benefits of setting an SBT? SBTs often require internal investment to develop and execute, so they should be associated with clear strategic advantages.

What method should be adopted to set an SBT? Various methods are available, which differ in terms of whether they calculate targets as a percentage reduction in absolute emissions or emissions intensity based on a physical or economic metric. The methods also vary in sectoral specificity and may be based on different scientific datasets and emissions projections.

What does a credible SBT look like? Key considerations include the lifespan of a target and coverage of emissions from internal operations ("scope 1 and 2 emissions") and value chains ("scope 3 emissions").

What are effective communication strategies to gain internal buy-in and build credibility? The effective communication of an SBT guides internal management decisions, increases buy-in from employees and enhances corporate reputation.

Conclusions and recommendations

SBTs offer a number of strategic advantages
SBTs are more effective than incremental emissions reduction targets at:

- Building business resilience and increasing competitiveness.
- Driving innovation and transforming business practices.
- Building credibility and reputation.
- Influencing and preparing for shifts in public policy.

SBT-setting methods are complex and should be considered in the context of each company's operations and value chains

- Generally, science-based target setting methods have three components: a carbon budget (defining the overall amount of GHGs that can be emitted to limit warming to 1.5°C or well-below 2°C), an emissions scenario (defining the magnitude and timing of emissions reductions) and an allocation approach (defining how the carbon budget is allocated to individual companies).
- Three methods are currently available that are applicable to multiple sectors.
- Companies should choose the method and target that drives the greatest emissions reductions to demonstrate sector leadership.
- To calculate SBTs, companies should use a method that is based either on sector-specific decarbonization pathways (i.e. the Sectoral Decarbonization Approach) or on a percentage reduction in absolute emissions.

- Intensity targets may be set for scope 1 and 2 sources. However, an intensity target should only be set if it leads to absolute reductions in line with climate science or is modeled using a sector-specific decarbonization pathway that assures emissions reductions for the sector.

To ensure their rigor and credibility, SBTs should meet a range of criteria

Most importantly:

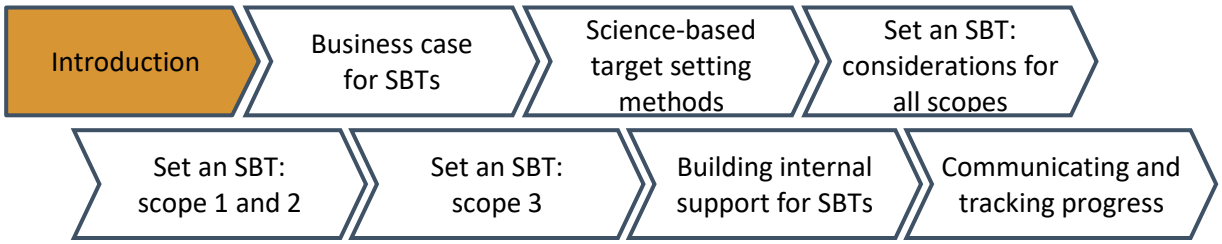
- An SBT should cover a minimum of 5 years and a maximum of 15 years from the date the target is publicly announced. Companies are also encouraged to develop long-term targets (e.g., up to 2050).
- The boundaries of a company's SBT should align with those of its GHG inventory.
- The emissions reductions from scope 1 and 2 sources should be aligned with well-below 2°C or 1.5°C decarbonization pathways.
- SBTs should cover at least 95 percent of company-wide scope 1 and 2 emissions.
- Companies should use a single, specified scope 2 accounting approach ("location-based" or "market-based") for setting and tracking progress toward an SBT.
- If a company has significant scope 3 emissions (over 40% of total scope 1, 2 and 3 emissions), it should set a scope 3 target.
- Scope 3 targets generally need not be science-based, but should be ambitious, measurable and clearly demonstrate how a company is addressing the main sources of value chain GHG emissions in line with current best practice.
- The scope 3 target boundary should include the majority of value chain emissions, for example, the top three emissions source categories or two-thirds of total scope 3 emissions.[2]
- The nature of a scope 3 target will vary depending on the emissions source category concerned, the influence a company has over its value chain partners and the quality of data available from those partners.
- SBTs should be periodically updated to reflect significant changes that would otherwise compromise their relevance and consistency.
- Offsets and avoided emissions should not count toward SBTs.

Getting internal stakeholders on board through all stages of the target-setting process requires careful planning

- Staff responsible for setting an SBT should partner closely with all levels of the company during the target-setting process to socialize goals, assess feasibility and co-create practical implementation plans.
- Staff should anticipate the issues that commonly create internal push-back and formulate ready-made responses.
- For scope 3 targets, companies should work closely with and support suppliers during the target-setting process to increase buy-in and enable implementation.

[2] Per SBTi target validation criteria, scope 3 targets must cover at least 2/3 of total mandatory scope 3 emissions as defined in Table 5.4 of the GHGP Scope 3 standard.

1. Introduction



By How Much Must Global Emissions Be Cut?

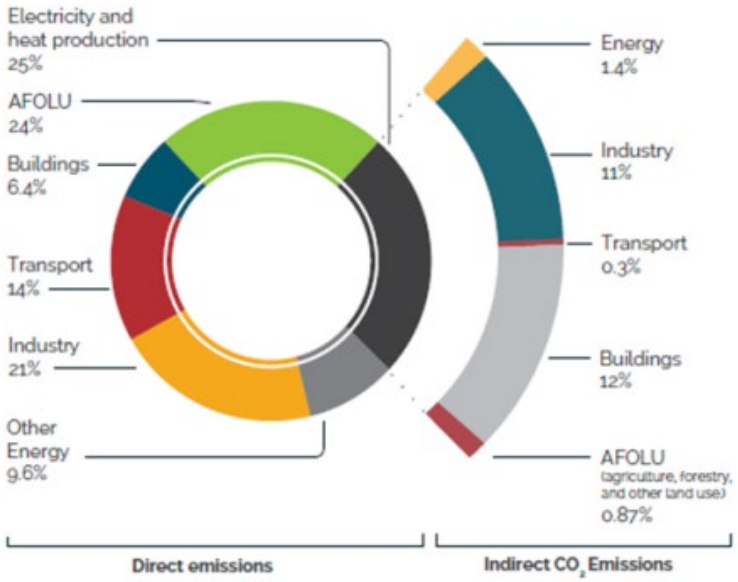
Nearly 200 countries participated in the twenty-first United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties and signed the Paris Agreement to hold "the increase in the global average temperature to well-below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C" (UNFCCC, 2015). They committed to a variety of steps, including a significant reduction in GHG emissions, but a substantial shortfall exists — even the best efforts under existing commitments would lead to warming of 2.4°C - 3.8°C by 2100 (Carbon Action Tracker, 2018). While government pledges clearly signal that the transition to a low-carbon economy is underway and inevitable in the long run, business has a critical role to play in bridging the gap between the level of effort countries have pledged and what is required to avoid the worst impacts of climate change.

With the release of the *Special Report on 1.5°C* in 2018, which was requested of the IPCC by the text of the Paris Agreement and which sends a strong message that limiting global warming to 1.5°C would significantly lower climate-related risks for human society and natural systems relative to 2°C, it is more urgent than ever to step up ambition. Many governments of vulnerable countries have supported the lower 1.5°C threshold, and while limiting warming to 1.5°C implies far fewer emissions and requires a faster rate of decarbonization, it offers hope for a world less disrupted by potentially devastating impacts on natural systems, water resources, agricultural productivity, and ultimately on economic, political, and social stability.

What Role Can Business Play?

Global emissions result mainly from the activities of major economic sectors, including electricity and heat production; agriculture, forestry and other land use (AFOLU); commercial buildings; transport and industry (Figure 1.1).

Figure 1.1. Share of Total Anthropogenic GHG Emissions ($GtCO_2e$ per year) From Major Economic Sectors, 2010 Data



Note: Other Energy covers sources other than public electricity and heat production, such as fuel combustion in coke ovens and blast furnaces.

Source: Adapted from IPCC, 2014.

Companies operating within these economic sectors, as well as companies that rely on the services they provide, such as electricity, have a vital role to play in facilitating the transition to a low-carbon future. Many companies now recognize the risk climate change poses to their business and the opportunity it creates for leadership and innovation. Many have committed to change by setting emission reductions targets, and by tracking and publicly reporting GHG emissions. Science-based targets represent best practice in setting targets and form the backbone of comprehensive corporate climate change strategies.

Business Opportunity in Filling the Emissions Gap
The Low Carbon Technology Partnerships Initiative (LCPTi)[3] created low-carbon technology deployment action plans for nine business sectors. PwC estimated that if its ambitions were realized, the LCPTi could contribute 65 percent of the emission reductions necessary by 2030 to keep global temperature rise under 2°C. PwC also estimated that the action plans could help "channel $5-10 trillion of investment toward low carbon sectors of the economy and support 20-45 million person-years of employment." (PWC, 2015)

[3] The LCPTi is a collaboration between World Business Council for Sustainable Development (WBCSD) , Sustainable Development Solutions Network (SDSN) and International Energy Agency (IEA) that presents a series of concrete action plans on nine sectors for the large-scale development and deployment of low-carbon technologies. https://www.wbcsd.org/Programs/Climate-and-Energy/Climate/Low-Carbon-Technology-Partnerships-initiative

Decarbonization of the Power Sector
Electricity generation contributes approximately one third of global GHG emissions (Figure 1.1). Therefore, ambitious action by power companies will be vital to keep global warming within the well-below 2°C limit. The power sector is expected to decarbonize through a shift in electricity generation from centralized to decentralized production and from fossil fuels to renewables. Besides the measures taken by the power sector itself, companies in other sectors can influence the use of low-carbon energy by investing in options, such as wind, solar, and geothermal energy sources. Decoupling emissions from economic growth is possible and will be a critical component of a future low-carbon economy. For example, the largest 100 electric power generators in the United States (US), achieved a 12 percent reduction in carbon dioxide equivalent (CO_2e) emissions from 2008 to 2013, even as the total amount of generation increased (CERES 2015). For such decoupling to be achieved, companies will have to avoid investments in carbon intensive infrastructure to prevent locking themselves into a high-carbon growth path and/or having stranded assets on their balance sheets that would have to be retired early in order to meet the well-below 2°C limit.

What Is a Science-based Target?

In this manual, GHG emissions reduction targets are considered "science-based" if they are in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement—to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C.

Why Should My Company Care?

Smart companies understand the risks posed by climate change and demonstrate leadership by setting SBTs. Companies that set SBTs, build long-term business value and safeguard their future profitability by:

- Building business resilience and increasing competitiveness.
- Driving innovation and transforming business practices.
- Building credibility and reputation.
- Influencing and preparing for shifts in public policy.

See Chapter 2 for further discussion on this topic. Because of such benefits, and through such initiatives as the SBTi (Box 1-1), the number of companies with SBTs is increasing rapidly. As of April 2020, more than 850 companies have committed to set an SBT through the initiative. 350 of these companies have already set an approved SBT.

Box 1-1. The Science Based Targets initiative (SBTi)

The Science Based Targets initiative champions science-based target setting as a powerful way of future-proofing companies' growth in the transition to the low-carbon economy.

It is a collaboration between CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact (UNGC).

The initiative:

- Showcases companies that have set SBTs through case studies, events and media to highlight the increased innovation, reduced regulatory uncertainty, strengthened investor confidence and improved profitability and competitiveness generated by setting SBTs.
- Defines and promotes best practice in setting SBTs with the support of a Technical Advisory Group and a Scientific Advisory Group.
- Offers resources, workshops, and guidance to reduce barriers to adoption.
- Independently assesses and approves companies' targets through a Call to Action campaign that calls on companies to demonstrate their leadership on climate action by publicly committing to set SBTs. Companies then have two years to get their targets approved and published through the SBTi.

The initiative's overall aim is for science-based target setting to become standard business practice and for companies to play a major role in driving down global GHG emissions. Embedding SBTs as a fundamental component of sustainability management practices is crucial in achieving this. For more information, see http://sciencebasedtargets.org/

Purpose of the Manual

This manual is a guide to developing SBTs. It incorporates best practices and lessons learned from the SBTi's work. In particular, it incorporates the criteria and recommendations from the SBTi's Call to Action campaign as best practice.

Who Should Use This Manual?

This manual should be used by companies looking to develop a new GHG emissions reduction target that is aligned with climate science. Companies may also use this manual to establish whether existing targets are aligned with science and as a framework for their GHG management strategy. In 2020, a streamlined process will also be introduced to encourage Small and Medium Enterprises' participation in SBTi. Please see the SME Target Setting Letter for more information.

Additionally, investors, environmental groups, policy makers, and academics can use this manual to learn about best practices for setting SBTs.

What is in This Manual?

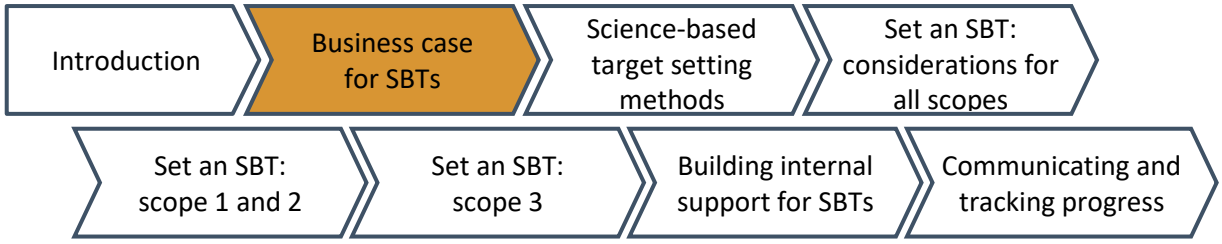
The bulk of this manual guides the reader at a high level through the different steps of setting an SBT, including defining the business case (Chapter 2), understanding how to apply the various SBT methods (Chapters 3-6), getting internal buy-in (Chapter 7), and communicating the target and performance progress (Chapter 8).

How Was This Manual Developed?

This manual was developed through a multi-stakeholder process coordinated by the SBTi. A technical advisory group of experts from industry and NGOs provided detailed input on multiple drafts. In addition,

more than 20 companies with experience in setting SBTs were interviewed to understand best practices and develop examples. A draft of the manual was also released for public comment to gain additional input from stakeholders world-wide. This process included a webinar and in-person workshops in Washington, D.C., USA; Mumbai, India and São Paulo, Brazil.

2. Understand the business case for science-based targets



This chapter outlines how companies can benefit from setting SBTs. Some business benefits may result from setting arbitrary goals; goals based on what is confidently achievable or what sector peers are doing. However, SBTs allow a company to capitalize on these benefits to their fullest extent and move beyond incremental change (Table 2-1).

Land Securities: Company quote
Tom Byrne, Energy Manager at Land Securities: "Ultimately, the science brings meaning and grounds our ambition in reality: targets are no longer numbers pulled from thin air, they are goals linked to a real issue. Science-based targets commit us to what is required, not just what is achievable. In this sense, they prove leadership and provide the 'spine' of a long-term sustainability strategy."

Table 2-1. The Benefits of Adopting an SBT

Opportunity	**Common Practice – Incremental Goals**	**Science-based Targets**
Build business resilience and increase competitiveness	Incremental goals often lead to decreases in costs and increases in operational efficiency, but may limit companies to only going after the "low hanging fruit".	Methods to set SBTs challenge business to re-align with the low-carbon economy, capitalizing on a range of opportunities beyond cost-savings and avoiding the risk of stranded assets.
Drive innovation and transform business practices	Setting goals can inspire companies and supply chain actors to discover novel solutions and product offerings. Because incremental goals are near-term[4] and not a "stretch", companies may not be pushed to transform business practices.	As SBTs include a long-term vision, companies can think beyond the near-term, common solutions for GHG emissions reductions. New technologies and financing options can be developed in a corporate environment that prioritizes preparing for a low-carbon economy.
Build credibility and reputation	Companies that are transparent in their GHG reduction efforts garner reputational credibility through demonstrating their commitment to addressing climate change. However, investors and other stakeholders are now demanding targets based on external, science-driven projections,	SBTs have higher credibility with stakeholders. Companies with SBTs are often lower-risk options for long-term investment since they can demonstrate that they are planning based on the latest available science.

[4] "Near-term" is defined as within five years into the future.

	which could put companies who fall short of this requirement at risk.	
Influence and prepare for shifts in public policy	Incremental targets send a signal to policy makers that companies take climate change seriously, but the credibility of this signal is limited by the ambition of the target.	SBTs help companies adapt to changing policies and send a stronger signal to policymakers, allowing companies to better influence policy decisions. Companies that have SBTs are much better positioned to respond to future regulatory adjustments as governments ramp up their climate action.

Build Business Resilience and Increase Competitiveness

By reducing the GHG emissions from its operations and value chain, a company can increase its resilience and competitiveness in a low-carbon economy. Achieving steeper emissions reductions can help a company save more money with respect to energy costs from manufacturing and logistics operations, amongst other operations, and therefore can increase its competitiveness. Also, decreasing energy consumption reduces a company's exposure to the risks associated with fossil fuel price fluctuations.

P&G: Ambitious Targets Spurring Innovation and Energy Savings
In FY14/15, Procter & Gamble (P&G) set an SBT of a 30% reduction in absolute scope 1 and 2 emissions by 2020, from a 2010 base year. Renewable energy will be key to helping the company achieve its goal. P&G has partnered with EDF Renewable Energy to build a 100MW wind farm in Texas. According to P&G, it will provide "enough wind power electricity to manufacture 100% of our Fabric and Home Care products (...) in the U.S. and Canada[5]." This is equivalent to eliminating 200,000 metric tons of GHGs per year. P&G is also looking to its employees to find new ways to reduce energy. The company launched a program called the "Power of 5" designed to give employees a channel to share their ideas to reduce energy usage and save money. So far, the program has generated more than $25 million in new, energy-saving opportunities, which will be implemented over the next two to three years.

Drive Innovation and Transform Business Practices

Aggressive reduction targets can drive greater innovation and investment. Ambitious targets can motivate employees from all parts of a business to think beyond incremental changes and be truly transformational in their business practices.

Innovation motivated by SBTs can lead to new business models and sources of value. Innovation can help redefine a company's bottom line by creating new products, new ways to source materials, new ways to interact with customers, and new ways to grow markets. Radical innovation can, in turn, disrupt currently unsustainable economic systems. Ambitious targets can also spur innovative financing practices such as internal carbon pricing or carbon taxes. Creative financing practices can enable the significant capital and research and development (R&D) investments needed to achieve ambitious targets. Achieving these targets can, in turn, result in an improved bottom line.

[5] For more information on P&G's wind farm, see http://cdn.pg.com/en-us/-/media/PGCOMUS/Documents/PDF/Sustanability_PDF/sustainability_reports/PG2015SustainabilityReport.pdf?la=en-US&v=1-201605111505.

Dell: Innovation in Sold Products and Services

The energy used by Dell's products is the largest contributor to its total carbon footprint and innovations in product energy efficiency are a key part of its overall emissions reduction strategy. As part of its SBT, Dell committed to reduce the energy intensity of its product portfolio 80% by 2020, from a 2011 base year. Dell is leveraging technology across its product lines, such as laptops, desktops, servers, and networking equipment, to meet this target. One example of this innovation is Dell's new generation of blade servers which act like a streamlined data center, with a much smaller GHG footprint than typical data centers. Customers gain space and processing power, free up their IT team and reduce their power costs by up to 20 percent, compared to identically configured competitive offerings.

Dell's Principal Environmental Strategist, John Pflueger, said: "Engineers love data! Give them the data and they will respond. They can now go in and work out where the biggest energy footprints are in the company. They have a license to innovate in order to meet the business strategy goals. The fact is if you want to solve a problem, you need to know the scale and nature of the problem you are trying to solve. When you have this information and these insights, then you know what you need to do."[6]

Walmart: Company Quote

Fred Bedore, Senior Director of Sustainability at Walmart: "I think whatever's right in front of you feels the most difficult, but that's also where a lot of the breakthrough innovation happens […]. With setting science-based targets, not only is that probably the longest time horizon for one of our specific goals, but it's also probably one of the most aggressive and comprehensive goals that we've set as a company. So, I think it will really push us and push our stakeholders to really get to those innovations."

Kellogg Company: Innovation in Supply Chains

As part of its SBT, Kellogg Company has committed to reduce absolute scope 3 emissions 20% by 2030 and 50% by 2050, from a 2015 base year.

This is Kellogg's first quantitative scope 3 target and to achieve it the company is engaging its suppliers to establish a base year GHG inventory and identify what changes can be made. Since Kellogg set this target, it has already engaged 75% of its suppliers (over 400 in total), encouraging them to respond to the CDP questionnaire on emissions and materials to help them understand the challenge and available options. Kellogg also has 35 programs around the world to help farmers decrease their footprint and is supporting half a million farmers to implement smart agricultural practices focused on emission reductions and resiliency. Kellogg is also collating the research results and lessons learned and sharing them with individual farmers.[7]

Build Credibility and Reputation with Employees, Customers, Investors and Other Stakeholders

SBTs represent a rigorous, non-arbitrary approach to set stretch goals and help create a pathway for meaningful GHG emission reduction efforts. Setting targets backed by an external community of climate experts lends credibility to corporate sustainability goals and can enhance a company's reputation in the eyes of its employees, customers, policy makers, environmental groups, and other stakeholders.

Companies also gain reputational advantage with some investors. More investors are recognizing the materiality and risk of climate change for many sectors. For example, between 2010 and 2019, there has

[6] For more information on Dell's SBT, see: http://sciencebasedtargets.org/case-studies/case-study-dell/.
[7] For more information on Kellogg's SBT, see: http://sciencebasedtargets.org/case-studies/case-study-kellogg/

been a 50% increase in the value of assets under management of institutional investors (from 64 trillion USD to 96 trillion USD) requesting disclosure of climate change, energy and emissions data through CDP.[8] As of 2016, sixty percent of the world's 500 biggest asset owners are acting to reduce their exposure to climate risk and increase their investment in the low-carbon economy (AODP 2017).

The visibility and positive reputation garnered by having an SBT will also bolster general employer attractiveness and consumer appeal. For example, a 2016 survey by Cone Communications shows that 76% of millennials take a company's social and environmental commitments into consideration when making employment decisions.[9] Additionally, around 80% of consumers seek out products that are socially or environmentally responsible whenever possible and would switch brands to support a good cause. The majority of these consumers expect companies to share the results of their sustainability commitments and many have conducted further research into a company's business practices in the last year toward that end.[10]

Investors' Increasing Interest in Climate Risk and Opportunity

The investment community is increasingly recognizing the material risk climate change poses for many sectors, either in terms of how it impacts a given company or how that company understands and manages its risk. Some examples of investor initiatives include:

- The Global Investors Coalition on Climate Change (GICCC), a joint initiative of four regional climate change investor groups, issued a Statement at COP 21 endorsed by 409 investors representing more than US $24 trillion in assets. The investors committed to several steps, including to "work with the companies in which we invest to ensure that they are minimizing and disclosing the risks and maximizing the opportunities presented by climate change and climate policy."[11]
- The Sustainable Accounting Standards Board (SASB), a non-profit organization, is creating industry standards for the disclosure of material sustainability information in mandatory SEC filings that investors can use to assess and make decisions about a company.
- The French government now mandates that financial institutions disclose their climate risk.
- The 2015 UN Paris Agreement on Climate Change commits governments to "Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. (UNFCCC 2015)"
- The Task Force on Climate-related Financial Disclosures (TCFD) has developed voluntary, consistent, climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders.

[8] https://www.cdp.net/en/info/about-us

[9] For more information on the survey, please see: http://www.conecomm.com/research-blog/2016-millennial-employee-engagement-study

[10] For more information on the survey, please see: http://www.conecomm.com/research-blog/2017-csr-study

[11] To read the full statement, see: http://investorsonclimatechange.org/portfolio/global-investor-statement-climate-change/.

NRG Energy: Using SBTs to Future-proof Business
NRG Energy provides electricity to nearly 3 million retail customers across the United States. It has committed to reduce absolute scope 1, 2 and 3 emissions 50% by 2030, and 90% by 2050, from a 2014 base year. NRG has been investing heavily in clean energy with a view to becoming the leading green energy producer in the U.S. "Setting a science-based target directly answered the needs of our customers, all of whom are thinking about their own footprints. It is also critical for investors who need to know that we are thinking of potential risks, in the short-, medium- and long-term," said Laurel Peacock, Sr. Sustainability Director at NRG. "Having an ambitious target […] is important to show that we will remain reliable, sustainable, safe suppliers now and in the future.[12]"

Land Securities: Company Quote
Tom Byrne, Energy Manager at Land Securities: "Having our target approved has undoubtedly enhanced our reputation and relationship with investors. We are now an even better long-term investment prospect. As long as we keep updating it in line with the latest science, our target future-proofs us for investor requirements for the next 50 years. In the sustainability team we are increasingly taking calls from investors who want to talk about what we're doing. Some are thinking about setting their own science-based targets, while others are thinking of making them a requirement for companies they invest in." "I think the target also puts us in a good position vis-à-vis government regulation. We are fully compliant with the UK government's existing targets and would be well placed were they to introduce more stringent regulation for companies. Indeed, I think that industry is now leading government on this: we are showing what companies can do on their own, and hopefully creating an environment in which others will follow suit and the bar will be raised."[13]

Influence and Prepare for Shifts in Public Policy

Setting and meeting SBTs can reduce a company's exposure to more stringent emissions and energy regulations, helping it smoothly adapt to regulatory and policy changes that might otherwise impact daily business operations and impede financial growth. Companies that set SBTs will be positioned to out-compete their competitors when climate change regulations become more stringent in future.

Leading companies' adoption and implementation of SBTs also demonstrates the technical and economic feasibility of low-carbon production for policymakers and other stakeholders helping to hasten the transition. Companies with SBTs can also influence policy by signaling their support for low-carbon policies and creating demand for low-carbon technology pathways and renewable energy solutions that would benefit from more favorable policy conditions.

Company Quote: Dell
John Pflueger, Principal Environmental Strategist at Dell: "I think the American Business Acts on Climate Pledge was a real watershed moment. It was a big signal from the Federal government that companies needed to start looking seriously at these issues. The government doesn't just set rules and a culture, but it is also a potential customer. It can indicate its support for low-carbon innovation by purchasing those products, so in that sense, having a science-based target should stand us in good stead".

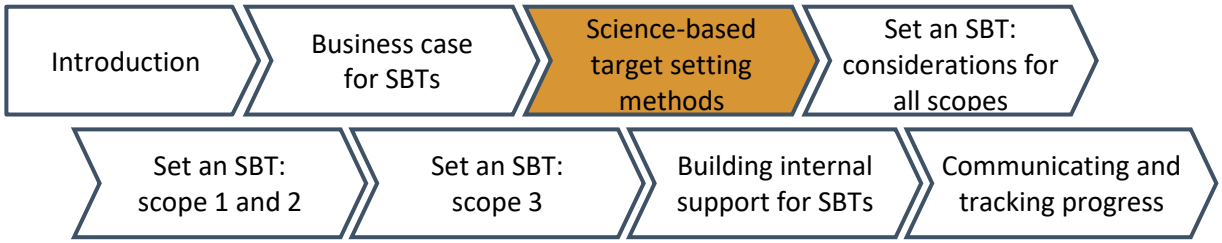
Setting an SBT is not at odds with economic growth. As demonstrated by the benefits noted above, aspiring to innovative business strategies can catalyze financial success and prepare a company to thrive

[12] For more information on NRG Energy's SBT, see: http://sciencebasedtargets.org/case-studies/case-study-nrg/.

[13] For more information on Land Securities' SBT, see: http://sciencebasedtargets.org/case-studies/case-study-land-securities/.

in a low-carbon economy. Companies will collectively benefit from an environment that remains conducive to business and mitigates disruption to business operations. To ensure this future state, companies need to set targets that are in line with the ambition of the Paris Agreement.

3. Science-based target setting methods



This chapter provides a high-level description of the available methods and guidance on choosing suitable target setting methods for various sectors. It also describes the general methodological approach for setting an SBT.

Please refer to the Foundations of Science-based Target Setting paper for an in-depth, technical discussion of these topics.

Key Insights in This Chapter

- Three methods are currently available, and each has applicability to multiple sectors. Not all methods can be applied to all sectors.
- The key components of an SBT method are the carbon budget (defining the overall amount of GHGs that can be emitted to limit warming to within well-below 2°C or 1.5°C), emissions scenario (defining the magnitude and timing of emissions reductions), and allocation approach (defining how the budget is allocated to companies).
- It is recommended that companies use either the Sectoral Decarbonization Approach (SDA) or the absolute emissions contraction approach. For scope 1 and 2 emissions, economic intensity targets should only be set if they lead to absolute reductions in line with climate science.
- Companies should choose the method and target that best drives emissions reductions to demonstrate sector leadership.

3.1 Available methods and their applicability to different sectors

Currently, there are three main, publicly available target-setting methods.[14] This section provides an overview of available methods and makes recommendations on the suitability of each method to various sectors.

A Science-Based Target Setting Tool is available for users to model targets with different methods. This tool is updated periodically.

This chapter also describes data inputs and outputs for each method. Because the methods are sensitive to the inputs used, and because errors can propagate throughout the methods, company data should be as accurate as possible (see also Chapter 4.3).

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

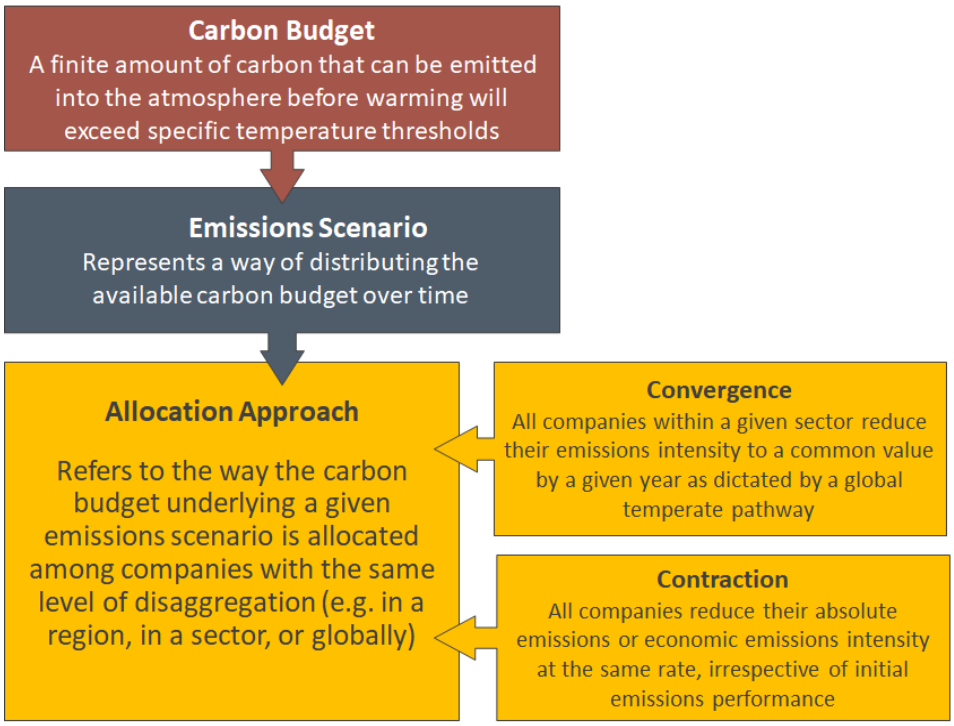
Overview of Available Target-Setting Methods

There are three available target-setting methods: absolute emissions contraction, the Sectoral Decarbonization Approach, and economic intensity contraction. In general, an SBT method comprises three components:

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

Methods can vary in terms of each of these components. Figure 3-1 further describes the three main elements of an SBT method.

Figure 3-1. Main Elements of Methods for Setting SBTs



Absolute Emissions Contraction

Absolute Emissions Contraction is a method for setting absolute targets that uses contraction of absolute emissions. Through this approach, all companies reduce their absolute emissions at the same rate, irrespective of initial emissions performance. Consequently, an absolute emissions reduction target is defined in terms of an overall reduction in the amount of GHGs emitted to the atmosphere by the target year, relative to the base year (e.g. reduce annual CO_2e emissions 35% by 2025, from 2018 levels).

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

This method is a simple, straightforward approach to set and track progress toward targets that is applicable to most sectors. Table 3-1 specifies which sectors should not use the approach.

Method	Company Input	Method Output
Absolute emissions contraction	• Base year • Target year • Base year emissions, disaggregated by scope	Overall reduction in the amount of absolute GHGs emitted to the atmosphere by the target year, relative to the base year

Example of absolute targets set:

- Cisco commits to reduce absolute scope 1 and 2 GHG emissions 60% by FY2022 from a FY2007 base-year.
- Global food and beverage company Nestlé commits to reduce absolute scope 1 and 2 GHG emissions by 12% between 2014 and 2020.

Sectoral Decarbonization Approach (SDA)

The SDA is a method for setting physical intensity targets that uses convergence of emissions intensity. An intensity target is defined by a reduction in emissions relative to a specific business metric, such as production output of the company (e.g., tonne CO_2e per tonne product produced). The SDA assumes global convergence of key sectors' emissions intensity by 2060. For example, the emissions intensity of steel production in China, the U.S., and Brazil is assumed to reach the same level by 2060, regardless of its current diversity.[15] Regional pathways have not been incorporated into this method.

The SDA uses the B2DS scenario from the International Energy Agency (IEA) report "Energy Technology Perspectives (ETP) 2017," which comprises emissions and activity projections used to compute sectoral pathways aligned with limiting warming to well-below 2°C (IEA, 2017). Due to the lack of 1.5°C scenario data from IEA, SBTi currently does not provide an SDA option for 1.5°C targets.

Currently, the SDA method provides sector-specific pathways for the following homogenous and energy-intensive sectors[16]:

Available in the Science-Based Target Setting Tool:

- Power Generation
- Iron & Steel
- Aluminum
- Cement
- Pulp & Paper
- Services/commercial buildings

Available in the SDA Transport Tool:

- Passenger and Freight Transport

Targeted emissions intensity varies by company base year emissions intensity, projected activity growth, and sectoral budgets. Companies can use the relevant SDA pathways to calculate intensity in the target

[15] Each sectoral budget is maintained, to the extent the sum of sectoral activity does not go beyond that projected for the scenario (for homogeneous sectors) and that no new businesses are created.

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

year. The SDA method covers scopes 1 and 2. It has limited applicability to other scope 3 categories (see Chapter 6).

A previous target setting tool specific to SDA calculated SBTs for a general "Other Industry" category that covers sectors other than the ones listed above, including construction industry and manufacturing sectors (e.g., food and beverage, electronics, machinery). Please note that the "Other Industry" pathway has been disabled in the new Science-Based Target Setting Tool. Companies in these sectors should use the absolute emissions contraction approach to set targets (please see section "Other Target formulations" below for more guidance).

Method	Company Input	Method Output
Sectoral Decarbonization Approach (SDA)	● Base year ● Target year ● Base year emissions, disaggregated by scope ● Activity level in the base year (e.g., building floor area, distance travelled, etc.) ● Projected change in activity by target year	A reduction in emissions relative to a specific production output of the company (e.g., tonne CO_2e per MWh)

Example of physical intensity targets set using SDA:

- Italian multinational manufacturer and distributor of electricity and gas Enel commits to reduce CO2 emissions 25% per kWh by 2020, from a 2007 base year.
- European real estate operator Covivio commits to reduce scope 1 and 2 GHG emissions 35% per sqm by 2030 from a 2017 base-year.

Economic Intensity Contraction

Greenhouse Gas Emissions per Value Added (GEVA) is a method for setting economic intensity targets using the contraction of economic intensity. Targets set using the GEVA method are formulated by an intensity reduction of tCO2e/$ value added. [17] Under the GEVA method, companies are required to reduce their GEVA by 7% per year (compounded). The 7% year-on-year reduction rate is based on an absolute emissions reduction of about 75% by 2050 from 2010 levels. Based on recent economic projections and estimates of historic emissions, the 7% rate is broadly compatible with high-confidence IPCC (RCP2.6) pathways, and its ambition is intermediate between the IEA 2DS and B2DS pathways, under idealized conditions that are expounded below (ETP, 2017; SBTi, 2019).

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

[17] Please note that value added is the only economic metric allowed for the application of GEVA.

Important Note: per SBTi criteria, scope 1 and 2 targets using GEVA are only acceptable when they lead to a reduction in absolute emissions in line with well-below 2°C and 1.5 °C scenarios. GEVA is therefore more applicable for scope 3 target-setting (please see Chapter 8 for detailed guidance on scope 3 target setting).

Method	Company Input	Method Output
GHG Emissions per Value Added	● Base year ● Target year ● Base year emissions, disaggregated by scope ● Value added in the base year ● Projected change in value added by target year	A reduction in emissions relative to financial performance of the company (e.g., tonne CO2e per value added).

Example of economic intensity target set using GEVA:

- Manufacturer of outdoor power products Husqvarna Group AB commits to reduce scope 1 and scope 2 emissions 30% per unit of value added by 2020 from a 2015 base-year.

Other Target Formulations

Depending on reporting and communication preferences, a company can choose to use the target format output by a method and/or translate it to other formats (e.g., use production data to convert an absolute target into an intensity target). Companies can choose to use an economic or physical metric most representative of the companies' profiles to formulate targets. For instance, companies in sectors where sector-specific pathways are not yet available can set an intensity target based on its main product output. With such target formulation, companies need to ensure that the absolute emissions reduction is in line with the absolute contraction approach.

Example of targets using other formulations set:

- Global Brewer AB InBev commits to reduce emissions across the value chain (scopes 1, 2 and 3) by 25% per beverage by 2025, from a 2017 base year.

Suitability of Methods to Various Sectors

While the three methods are each applicable to more than one sector, not all methods are applicable to all sectors. Table 3-1 recommends when certain methods should be used for certain sectors.

Table 3-1. Suitability of methods to various sectors for scope 1, 2, and 3 targets. Please refer to Chapter 6 for guidance on setting scope 3 targets.

Important note: asterisks ("*") and the word "must" are used when certain methods are required by the SBTi Criteria.

Sector	Suitable Methods for Setting Scope 1 and 2 Targets
	Specifications for certain sectors' scope 3 targets
	Sectors specific development undergoing

Power Generation		SDA Power generation companies must set scope 1 targets that are at least as ambitious as those determined by the SDA. This is because the power sector is the single largest contributor to global GHG emissions (Figure 1-1.) and can cost-effectively reduce its emissions by an amount that may be underestimated by other methods. *
Oil and Gas		*SBTi is developing sector specific targets setting methods for oil and gas companies.* *For the purposes of the target validation by the SBTi, "Oil & Gas" includes, but is not limited to, integrated Oil & Gas companies, Integrated Gas companies, Exploration & Production Pure Players, Refining and Marketing Pure Players, 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 the purpose of 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.*
All companies involved in the sale, transmission, or distribution of natural gas or other fossil fuel products (Scope 3, category 11 "Use of sold products")[18] Owners and operators of gas networks must account for and set targets to address scope 3, "use of sold products" emissions from the gas distributed, even if this is currently optional under the GHG Protocol accounting standard.		*Scope 3 targets must be set on scope 3 "use of sold products" using absolute emissions contraction or intensity targets in line with well-below 2°C scenarios (2.5% annual linear reduction),* irrespective of the share of these emissions compared to the total S1+S2+S3 emissions of the company. * [19]
Iron and Steel		SDA or absolute/intensity targets in line with absolute contraction
Cement		
Pulp and Paper		
Aluminum		*Companies can submit targets for official validation with SDA or absolute/intensity targets in line with absolute contraction.* *SBTi is also establishing a foundation for the development of tools and guidance specific to the aluminum sector.*
Transport Services	Transport activities (Scope 1, Scope 2, and/or Scope 3) - Passenger - Freight	*SDA Transport tool or absolute/intensity targets in line with absolute contraction* *Note 1. 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.* *Note 2. The SDA transport tool provides a pathway for aviation*

[18] Example of such companies include retailers of petroleum products, natural gas, coal, biofuels, and crude oil. As defined by the Corporate Value Chain (Scope 3) Accounting and Reporting Standard

[19] Please note that this refers to the requirement under Version 4.1 of the SBTi criteria..

		(passenger and freight) and sea freight transport based on the absolute contraction method, but current work is underway to further develop aviation and shipping sector developments.
Auto Original Equipment Manufacturers (OEMs)	Scope 3, category 11 'Use of sold products' - Passenger - Freight	*Targets set by OEMs on scope 3 - 'use of sold products' must meet the minimum level of ambition determined by the SDA Transport tool, covering Well-to-Wheel emissions of their sold vehicles. **
Services/Commercial buildings	Trade / Retail	SDA or absolute/intensity targets in line with absolute contraction
	Financial institutions	
	Food and lodging	
	Education	
	Real Estate	
	Public Administration	
	Health	
Financial Institutions	Scope 3, category 15 'Investment'	*SBTi is developing targets setting methods for financial institutions to align their investment and lending portfolios with Paris-aligned climate stabilization pathways. Financial institutions can only submit their scope 1 and 2 targets for initial feedback.*
Chemical and Petrochemical Industry		*Companies can submit targets for official validation with absolute/intensity targets in line with absolute contraction.* *The chemical sector pathway in the SDA tool cannot be used at present. SBTi is developing sector specific guidance for the chemical and petrochemical industry.*
All other industry	Construction industry	Absolute/intensity target in line with absolute contraction Note 1. Companies across the apparel and footwear value chain should consult the Apparel and Footwear sector SBT guidance for detailed guidance on target setting. Note 2. The "Other Industry" pathway in a previous target setting tool specific to SDA has been disabled. Companies in these sectors should use the absolute emissions contraction approach to set targets.
	Mining and quarrying	
	Manufacture of	
	Leather and Related Products	
	Textiles	
	Wearing Apparel	
	Beverages	
	Computer, Electronic and Optical Products	
	Electrical Equipment	
	Fabricated Metal Products	
	Food Products	
	Furniture	
	Machinery and Equipment	
	Other Non-Metallic Mineral Products	
	Rubber and Plastics Products	
	Tobacco Products	
	Wood and Cork products	
	Non-ferrous metals basic industries	
	Other manufacturing / processing	

If a company **operates in more than one sector**, it should identify the **top sectors** that cover the majority of its operations. The methods that apply to these sectors can then be used as a benchmark to determine the aggregated final target. For example, a company might operate in the aluminum sector and have power generation operations to support the aluminum production. In this case, the company could set two different targets using both the aluminum and power generation sector pathways in the SDA. Similarly, a company could use multiple methods for different scope 3 emissions categories (see Chapter 4.3). A company should develop an aggregated target that applies across its entire structure for external reporting and communication, although separate internal targets may be developed by region, sector, facility, or emissions category for ease of tracking and execution.

3.2 Recommendations on choosing an SBT method

Wherever possible, companies should use either the **Sectoral Decarbonization Approach (SDA)** or **Absolute Emissions Contraction**.

An economic contraction method may also be used to set an economic intensity target (e.g., using GEVA). In general, an intensity target for scope 1 and 2 should only be set if it's in line with the absolute contraction approach or is modeled using a sector-specific pathway (e.g., SDA) that assures emission reductions for the sector as a whole.

Companies Should Choose the Most Ambitious Target

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

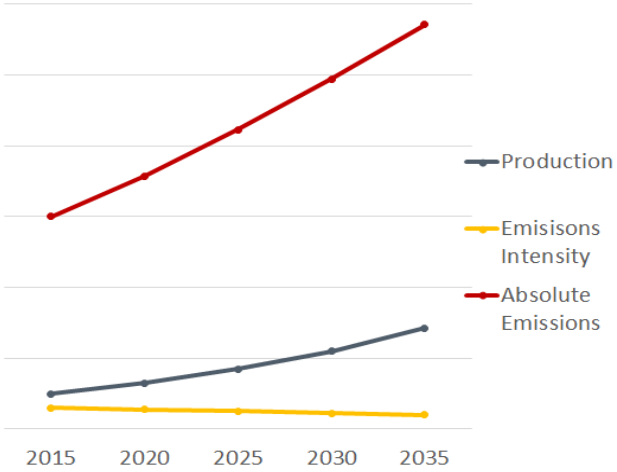
To help ensure adherence to the carbon budget, companies should use the most ambitious decarbonization scenarios and methods that lead to the earliest reductions and the least cumulative emissions. A company should screen several of the methods and choose the method and target that best drives emissions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

3.3 Pros and cons of different types of targets

Comparing Absolute Targets and Intensity Targets

Intensity and absolute targets each have advantages and disadvantages. Intensity targets do not necessarily lead to reductions in absolute emissions. This is because increases in business output can cause absolute emissions to rise even if efficiency improves on a per unit basis (please see Figure 3-1 for illustration of this point).

Figure 3-1. Intensity Reduction Targets Can Lead to Absolute Emissions Increases When Production Levels Increase



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

It's recommended that companies express targets in both absolute and intensity targets terms.[20]

Example of Combination (Absolute and Intensity) targets:

- Scopes 1, 2 and 3: Coca-Cola Enterprises commits to reduce absolute GHG emissions from their core business operations 50% by 2020, using a 2007 base-year. Coca-Cola Enterprises also commits to reduce the GHG emissions from their drinks 33% by 2020, using a 2007 base-year.
- Scopes 1, 2 and 3: European real estate operator Covivio commits to reduce Scope 1 and 2 GHG emissions 35% per sqm by 2030 from a 2017 base-year. Covivio also commits to reduce Scope 1, 2 and 3 GHG emissions 34% per sqm by 2030 from a 2010 base-year.

Comparing Physical Intensity Targets and Economic Intensity Targets

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

In general, economic intensity metrics (e.g., tonnes GHG per unit value-added) are best suited for use within sectors whose products vary a lot and are difficult to directly compare against each other (e.g., retail or chemical sectors).

[20] This is however not required for the purpose of SBTi submission.

Economic intensity targets may be appropriate for sectors with limited fluctuations in product prices over time, where growth in emissions is often tied to economic growth of the company. In other words, if a company sells more products, more emissions are produced to make those products.

However, for some sectors, the financial growth of a company is not tied to increased emissions and can be influenced by other market forces, such as supply and demand, and price fluctuations. In such cases, an economic metric is not useful for tracking emissions performance. Companies should use absolute emissions contraction or develop intensity targets in line with absolute emissions contraction.

Examples of sectors with volatile pricing:

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

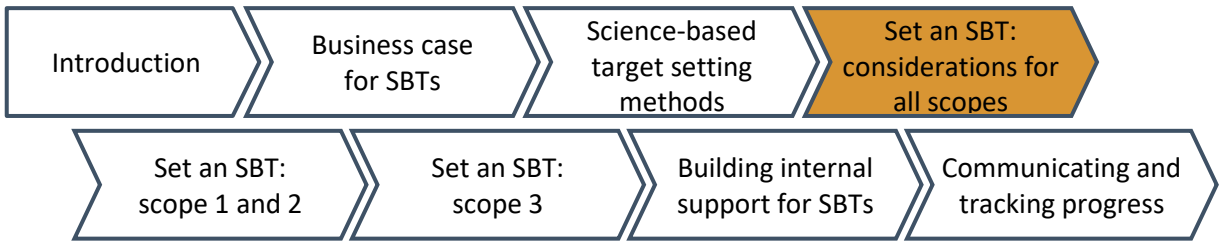
Table 3-1 summarizes the main advantages and disadvantages of these three types of targets.

Table 3-1. The Main Advantages and Disadvantages of Absolute, Physical Intensity, and Economic Intensity Targets

	Absolute Target	**Physical Intensity Target**	**Economic Intensity Target**
Advantages	Designed to reduce the quantity of GHGs emitted to the atmosphere by a specific amount. Demonstrates strong ambition for target communications. Environmentally robust and more credible to stakeholders as it entails a commitment to reduce total GHGs by a specified amount, thus also making the contribution to global emissions reductions efforts predictable and transparent.	Reflects GHG performance and efficiency improvements independent of business growth or decline. Can be more in line with emissions reduction strategies and internal progress tracking. May increase the comparability of GHG performance amongst companies (assuming that inventory consolidation approaches used are the same and product mixes are highly similar).	Suitable for companies that generate a diverse product and service mix. Suitable for fast-growing companies.

Disadvantages	Does not allow comparisons of GHG intensity/efficiency to that of peers. Reported reductions can result from declines in production/output, rather than improvements in performance. Target may be more challenging to achieve if the company grows and growth is linked to GHG emissions.	Risk of being seen as less credible to stakeholders because absolute emissions may rise even if intensity decreases (e.g., because output increases more than GHG intensity decreases). Companies with diverse operations may find it difficult to define a single physical intensity common business metric.	Can be less environmentally robust due to the volatility of economic metrics and method reliance on “idealized” conditions. Target progress can be difficult to track if companies experience financial losses in certain years. May not correlate with emissions tied to physical production processes, especially for sectors with high price fluctuations.

4. Set a science-based target: key considerations for all emissions scopes



Important Note: The manual is not linked directly to the SBTi target validation criteria. Therefore, Chapters 4-6 only incorporate the SBTi's criteria and recommendations as best practice. They do not necessarily describe SBTi criteria as requirements.

For the purpose of preparing target submissions for SBTi validation, users should consult SBTi Criteria (Version 4.1)[21] and Target Validation Protocol. Because SBTs are built upon corporate GHG inventories, these Chapters also reference relevant requirements in GHG Protocol standards for GHG inventory development.

Companies should always set an SBT for their scope 1 and 2 emissions. They may also wish to set a scope 3 target, particularly if scope 3 emissions represent a significant fraction of total scope 1, 2 and 3 emissions.[22] Regardless of scope, several key considerations inform the structure of a target and the types of reductions that can be applied toward it.

Key Insights in This Chapter

- An SBT should cover a minimum of 5 years and a maximum of 15 years from the date the target is submitted to the initiative for official validation (supplier engagement targets are an exception). Companies are also encouraged to develop long-term targets (e.g., through 2050).
- The boundaries of a company's SBT should align with those of its GHG inventory.
- Offsets and avoided emissions should not count toward SBTs.

4.1 Cross-cutting considerations

Choose a Base Year

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

[21] Version 4.1 of the SBTi criteria will be in effect as of July 15th, 2020. All submissions received by the SBTi prior to can be assessed against the criteria 4.0.

[22] SBTi target validation criteria requires scope 3 targets to be set when scope 3 emissions are over 40% of total emissions.

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

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

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

Finally, various factors may necessitate recalculations of the base year inventory (and the SBT as a whole) to ensure the continued relevance of the SBT. See Chapter 8 for further guidance on this topic.

Choose a Target Year

The impacts of climate change will be felt for years to come. Setting long-term SBTs (e.g. through 2040 or 2050) encourages planning to manage the long-term risks and opportunities connected with climate change. These may include the creation of new services and markets, and the need for large capital investments that offer GHG benefits. However, long-term targets alone do not match the decision horizons of many companies and might encourage later phase-outs of less efficient equipment. Mid-term targets (those between 5 and 15 years in the future) can be instrumental for identifying inefficiencies and opportunities for emission reductions.

Companies should set a target that covers a minimum of 5 years and a maximum of 15 years from the date from the date the target is submitted for approval.

It is also recommended to set long-term targets beyond this interval and set interim milestones at five-year intervals. All targets, including interim targets and long-term targets, should be consistent with the level of decarbonization required to keep global temperature increase to 1.5°C or, at minimum, well-below 2°C compared to pre-industrial temperatures.

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

Various Companies: Framing and Communicating Short and Long-term Targets
● Pfizer determined it needed to reduce its emissions 60% to 80% by 2050 from 2000 levels, in order to stay on a 2°C trajectory. Doing so would require a 20% reduction by 2020, from 2012 levels. Setting a 2050 goal alone would be challenging because of the uncertainties introduced by a long target period. Pfizer therefore uses the nearer-term (2020) goal, but clearly communicates that it is on track to meet the 2050 target.

- Nestlé made a 2020 commitment, which is on the trajectory to a 2050 target. However, Nestlé believes that shorter-term targets have more meaning and create more ownership among employees who may still be there in 2020 and thus will feel responsible.
- Mars has both 2025 and 2040 targets, and benchmarks itself on a 3% annual reduction with an eye on efficiency activities that are underway. It believes the shorter-term target engenders greater accountability. But the longer-term goal helps ensure that short-term strategies don't lock it into investments or decisions that would cause it to veer off a low-carbon trajectory after 2025.

Ensure the Target Boundary is Aligned with the GHG Inventory Boundary

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

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

A company should align the boundaries of its SBT with those of its GHG inventory. To do so, it must select a single approach based on a range of company-specific considerations and apply that approach consistently across its corporate structure, for both the corporate inventory and the SBT. The GHG Protocol Corporate Standard (WRI & WBCSD 2004) provides further guidance.

Companies should also make sure that the SBT and corporate inventory cover all relevant emissions of the seven different GHGs or classes of GHGs covered by the UNFCCC/Kyoto Protocol. These are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexaflouride (SF_6), and nitrogen triflouride (NF_3).

Determine How to Treat Subsidiaries

Complex business relationships (subsidiaries, joint ventures, etc.) can complicate how the GHG inventory and thus the target boundary are drawn. Parent companies should set SBTs for subsidiaries in accordance with the selected organizational boundary approach[23]. When permitted by the organizational boundary approach, parent companies must include emissions from subsidiary operations in their SBTs. However, it can be acceptable for a subsidiary to set targets directly if it has operational and managerial independence. In cases where both the parent company and subsidiary set SBTs, care must be taken to communicate whether the targets overlap.

Thalys: Setting Targets for Subsidiaries
International train operator, Thalys, was founded by SNCF, the National Rail Company of Belgium (SNCB), and Deutsche Bahn. Though Thalys is partly owned by SNCF, it operates independently. Thalys has an SBT to reduce scope 1, 2 and 3 GHG emissions per passenger kilometer 41.4% by 2020, from a

[23] See p19 in the Corporate Standard for further guidance

2008 base-year. SNCF has also committed to set an SBT and, since it has maintenance responsibility at some of Thalys' sites, will have to distinguish its additional targets from those of Thalys'.[24]

Pay Attention to the Level of Ambition Required of Combined Scope Targets

Companies may set targets that combine scopes (e.g., scope 1+2 or scope 1+2+3 targets).
Combined scope 1+2 targets and scope 1+2+3 targets should lead to aggregate reductions in scope 1+2 emissions that are in line with a 1.5°C or well-below 2°C scenario. In addition, when a combined scope 1+2+3 target is set, the scope 3 portion should also meet the relevant ambition criteria (Chapter 6).

Exclude the Use of Offsets

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

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

Exclude Avoided Emissions

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

Because different methods are used to calculate a company's GHG inventory and avoided emissions, avoided emissions must be reported separately from scope 1, 2 and 3 emissions, and should not be counted toward SBTs, including any scope 3 target.[25]

Determine How to Treat Indirect Use-phase Emissions

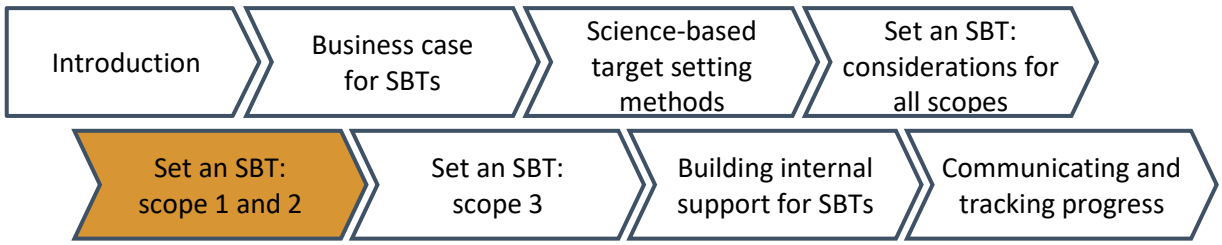
Indirect use-phase emissions are generated by products that only consume energy indirectly during use over their expected lifetime. Examples of such emissions include the washing and dyeing of apparel and the cooking and refrigeration of food products.[26] If companies have significant indirect use phase emissions, they may estimate these emissions and take actions to reduce these emissions.[27]

Secure Third-Party Review

Companies may validate their targets through the SBTi's Call to Action Campaign, which offers a thorough technical review that ensures that the target is aligned with the chosen SBT method and this manual's recommendations. Companies can mention such a third-party review in their public communications. They may also have a third-party verification of their emissions inventories.

[24] For more information on Thalys' target, see http://sciencebasedtargets.org/case-studies/case-study-thalys/.
[25] Please see https://www.wri.org/publication/estimating-and-reporting-comparative-emissions-impacts-products for a paper on avoided emissions.
[26] Please see page 38 of the Corporate Value Chain (Scope 3) Accounting and Reporting Standard for more information.
[27] Per SBTi criteria, it is only optional to include indirect use phase emissions in the scope 3 inventory. SBTi also requires that indirect use-phase emissions do not count towards the ⅔ boundary.

5. Set a science-based target: scope 1 and 2 sources



Key Insights in This Chapter

- SBTs should cover at least 95% of company-wide scope 1 and 2 emissions.
- The direct emissions of CO_2, CH_4 and N_2O from biomass combustion should be included in the target boundary
- Companies should use a single, specified scope 2 accounting approach ("location-based" or "market-based") for setting and tracking progress toward an SBT.
- Companies may alternatively set targets for renewable energy procurement if they are in line with science. Those companies would still need to address scope 1 emissions through another target.
- The emissions reductions from scope 1 and 2 sources should be aligned with well-below 2°C decarbonization pathways at a minimum. Efforts towards 1.5°C scope 1 and 2 targets are encouraged.
- Companies may face sector-specific requirements and recommendations when setting SBTs.

5.1 General considerations

Set Target Boundaries

SBTs should cover company-wide scope 1 and 2 emissions, even if one scope total may seem insignificant compared to the other. This is to ensure that the SBT captures the risks and opportunities of changing energy sources. In general, companies should exclude no more than 5 percent of their aggregate scope 1 and 2 emissions from their inventory and targets.

Biomass-related emissions are significant for many companies. While the direct emissions of CO_2 from biomass combustion and biodegradation, as well as the GHG removals associated with bioenergy feedstocks, are reported outside of the scopes in a corporate GHG inventory, they should be included in the target boundary, both when setting a science-based target and when reporting progress against that target.[28] The CH_4 and N_2O emissions associated with biofuels and biomass combustion should be reported under relevant scopes.

Similarly, the CO_2 emissions from land use change are reported outside of the scopes and companies are encouraged to include these emissions in their target boundary if they are relevant, when possible. Because methods to calculate land use change as well as bioenergy-related emissions or removals vary widely, companies should disclose the method used and recalculate these emissions when consensus methods become available.

[28] Companies shall also report non-bioenergy related biogenic emissions alongside the inventory.

In general, companies should disclose whether and why specific operations and sources have been excluded (see Chapter 8).

Account for Scope 2 Emissions

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

Using Renewable Energy to Meet SBTs

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

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

For the purposes of setting SBTs, companies should choose the results of only one approach for base year emissions reporting and tracking performance. Also, if a company chooses to use the market-based approach, it should assess all contractual instruments for conformance with the Scope 2 Quality Criteria.[29]

As an alternative to setting percentage-reduction targets on scope 2 emissions, companies may instead set targets on the procurement of renewable energy. Such procurement targets are acceptable if they are in line with procuring 80% of electricity from renewable sources by 2025 and 100% by 2030. Companies that already source electricity at or above these thresholds should maintain or increase their share of renewable electricity.

Accounting for Purchased Heat and Steam

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

Set Target Ambition

At a minimum, an SBT should lead to emissions reductions from scope 1 and 2 sources that are consistent with well-below 2°C scenarios. Companies are encouraged to pursue greater efforts towards a 1.5°C trajectory.

As discussed in Chapter 3, intensity targets for scope 1 and scope 2 emissions should lead to absolute emission reductions in line with well-below 2°C pathways or be consistent with a sector-specific method that has been approved by the SBTi.[30] In turn, absolute reductions must be at a minimum consistent with scenarios that align with the principles of plausibility, consistency, responsibility, and objectivity for either a well-below 2°C or 1.5°C temperature goal, or aligned with the relevant sector reduction pathway within the Sectoral Decarbonization Approach (SBTi 2019, "Foundations").

Sector-specific Considerations

The ambition of a company's scope 1 and 2 SBT should be in line with either the SDA or the absolute contraction approach (Chapter 3). The one exception concerns electric power generators, which should set SBTs in line with the SDA because this methodology takes into account the deeper and faster

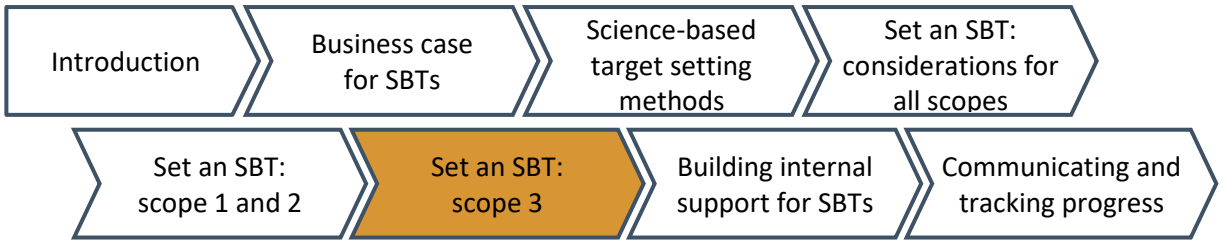
[29] These criteria are explained in Chapter 7 of the GHG Protocol Scope 2 Guidance.

[30] For a list of all approved methods and sector pathways, please consult this page.

decarbonization required by this sector.[31] However, although the power generation pathway in SDA only covers scope 1 emissions, electric power generators still need to consider scope 2 emissions and ensure that no more than 5% of scope 1 and 2 emissions combined are excluded from the inventory.

[31] SBTi target validation criteria requires that electric power generators set targets using the SDA "Power Generation" pathway.

6. Set a science-based target: scope 3 sources



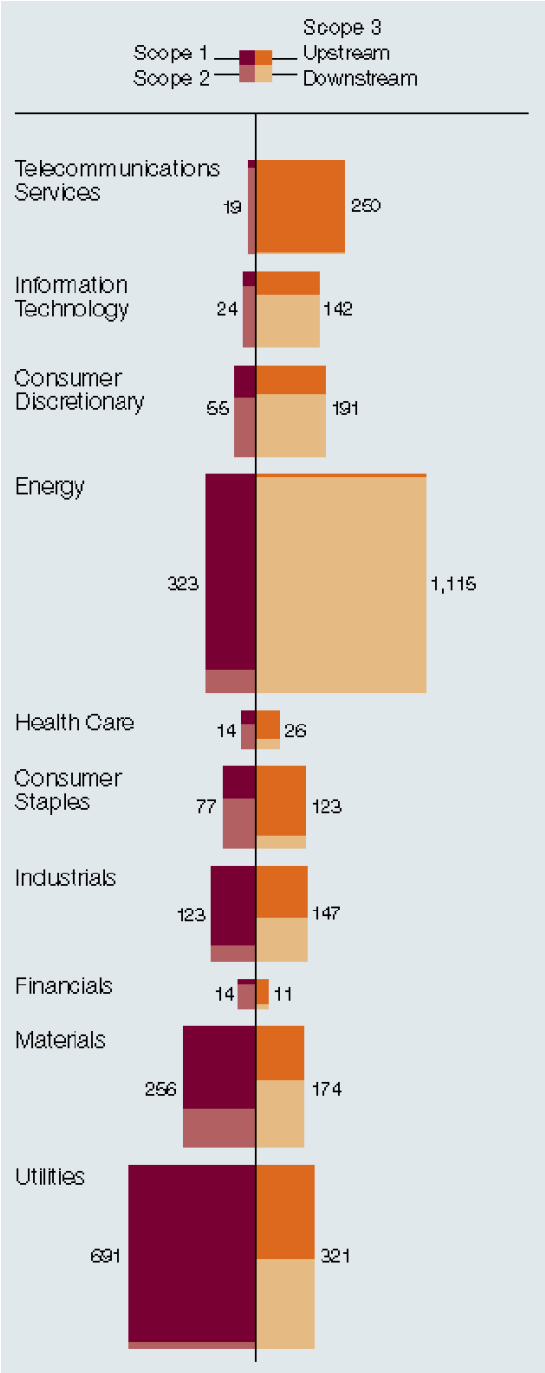
When companies set targets, they initially focus on scope 1 and 2 emissions because they are generally more able to influence these emissions. However, a company's scope 3 emissions are often much greater (Figure 6-1) and ambitious scope 3 targets can play an integral part in a company's GHG reduction strategy, allowing it to demonstrate performance and leadership, manage supply chain risks and opportunities, and address the needs of stakeholders. Scope 3 targets also help companies to better understand whether current business models are compatible with a low-carbon future.

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

Key Insights in This Chapter

- Companies should develop complete scope 3 inventories, at least using a screening approach and preferably using more detailed inventory methods, especially when scope 3 emissions are significant.
- If a company's scope 3 emissions account for at least 40% of total scope 1, 2 and 3 emissions), a scope 3 target should be set.
- Scope 3 targets can be framed as absolute emissions or emissions intensity targets. These are considered ambitious if they lead to reductions in absolute emissions or emissions intensity in line with 1.5°C, well-below 2°C, or 2°C pathways or when they have been modelled using a sector-specific method that has been approved by the Science Based Targets initiative.
- Otherwise, physical intensity targets are ambitious if they do not lead to growth in absolute emissions and reduce emissions intensity by an average of at least 2% per year (in linear terms) over the target period. Economic intensity targets are ambitious if they reduce economic intensity per value added by an average of at least 7% year-on-year over the target period.
- Scope 3 targets can be alternatively framed as targets to engage value chain partners in settings SBTs (supplier or customer engagement targets).
- The scope 3 target boundary of all scope 3 targets should collectively cover at least 2/3rds of total scope 3 emissions.

Figure 6-1: The Relative Magnitude of Scope 1, 2 and 3 Emissions, By Sector



Notes: Graph based on CDP data for S&P 500 firms.
Source: CDP 2013.

6.1 Conduct a scope 3 Inventory

Companies should 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 (see Table 6-1) and requires companies to include all relevant categories in an inventory, based on such criteria as the amount of emissions or the level of influence exerted over the categories (Table 6-2). In general, companies should calculate emissions from the scope 3 sources at which they have the potential to influence GHG reductions but should not exclude any activity that is expected to contribute significantly to their total scope 3 emissions. See Chapter 7 of the Scope 3 Standard for further details.

A useful approach to calculating scope 3 emissions is to first calculate a high-level screening inventory. Such an inventory can be used to directly set a target or to identify high-impact categories for which more accurate data are needed. Over time, companies should strive to develop complete inventories and improve data quality for high-impact categories (e.g. collect primary data) to better track progress against targets. If yearly calculation of scope 3 emissions is not possible, companies should estimate scope 3 emissions every 2 or 3 years to check if there are significant changes in total scope 3 emissions. Alternatively, companies may also wait until they have more accurate data before setting a target.

Box 4-2 describes the Scope 3 Evaluator, a tool useful in constructing screening inventories.

Table 6-1. The Scope 3 Categories

Upstream Scope 3 Emissions		
1	**Purchased goods and services**	Extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 2 - 8
2	**Capital goods**	Extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year
3	**Fuel- and energy-related activities (not included in scope 1 or scope 2)**	Extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in scope 1 or scope 2
4	**Upstream transportation and distribution**	- Transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company) - Transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company)
5	**Waste generated in operations**	Disposal and treatment of waste generated in the reporting company's operations in the reporting year (in facilities not owned or controlled by the reporting company)
6	**Business travel**	Transportation of employees for business-related activities during the reporting year (in vehicles not owned or operated by the reporting company)
7	**Employee commuting**	Transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company)

8	**Upstream leased assets**	Operation of assets leased by the reporting company (lessee) in the reporting year and not included in scope 1 and scope 2 – reported by lessee
Downstream scope 3 emissions		
9	**Downstream transportation and distribution**	Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company)
10	**Processing of sold products**	Processing of intermediate products sold in the reporting year by downstream companies (e.g., manufacturers)
11	**Use of sold products**	End use of goods and services sold by the reporting company in the reporting year
12	**End-of-life treatment of sold products**	Waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of their life
13	**Downstream leased assets**	Operation of assets owned by the reporting company (lessor) and leased to other entities in the reporting year, not included in scope 1 and scope 2 – reported by lessor
14	**Franchises**	Operation of franchises in the reporting year, not included in scope 1 and scope 2 – reported by franchisor
15	**Investments**	Operation of investments (including equity and debt investments and project finance) in the reporting year, not included in scope 1 or scope 2

Source: The Scope 3 Standard (WRI & WBCSD 2011). Please refer to this source for a complete description of the categories.

Table 6-2: Criteria for Identifying Relevant Scope 3 Categories to Include in a Scope 3 Inventory

Criteria	Description of Scope 3 Activities
Size	They contribute significantly to the company's total anticipated scope 3 emissions
Influence	They offer potential emissions reductions that could be undertaken or influenced by the company
Risk	They contribute to the company's risk exposure (e.g., climate change related risks such as financial, regulatory, supply chain, product and customer, litigation, and reputational risks)
Stakeholders	They are deemed critical by key stakeholders (e.g., customers, suppliers, employees, investors, or civil society)
Outsourcing	They are outsourced activities previously performed in-house or activities outsourced by the reporting company that are typically performed in-house by other companies in the reporting company's sector
Sector guidance	They have been identified as significant by sector-specific guidance
Other	They meet any additional criteria for determining relevance developed by the company or industry sector

Source: Adapted from the GHG Protocol Scope 3 Standard (WRI & WBCSD 2011), Table 6.1.

Box 6-1: The Scope 3 Evaluator Tool

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

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

Scope 3 Data Quality

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

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

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

If scope 3 emissions compose over 40% of total scope 1, 2 and 3 emissions, companies should develop an ambitious and quantitative scope 3 target that covers the majority of scope 3 emissions. Subsequent sections of this chapter expand on this recommendation.

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

Overall, the scope 3 target boundary should include two-thirds of total relevant scope 3 emissions. Companies may also include the top 3 emissions categories. Using a scope 3 inventory, companies can identify which categories should be included in the boundary of a scope 3 target(s) to meet this threshold. The criteria in Table 6-2 can also be used to guide this approach (see Box 6-2 for an example).

Across sectors, "Purchased goods and services" and the "Use of sold products" account for the majority of scope 3 emissions (CDP 2016). These categories will therefore be integral to many companies' targets. However, the relative importance of different scope 3 categories will vary by sector. Scope 3 categories likely to be important (in terms of emissions magnitude) for companies in specific sectors include:

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

Products can have direct use-phase emissions, such as when an appliance uses electricity or when an air-conditioner emits refrigerants. Products may also have indirect use phase emissions; for example, apparel when washed with hot water or food when cooked. Under the GHG Protocol Scope 3 Standard, direct use-phase emissions must be reported in scope 3 inventories, while indirect use-phase emissions are optional. Companies may therefore exclude indirect use phase emissions from the scope 3 target boundary, although including them in the boundary is encouraged when those emissions are significant.[32] See the GHG Protocol Scope 3 Standard for a list of products that generate direct and indirect use-phase emissions.

Sector-specific Recommendations

The manufacturers of light-road passenger vehicles should use the SDA transport tool to set scope 3 targets for the use of sold products and follow relevant sector specific guidance.[33]

All companies involved in the sale, transmission, or distribution of natural gas or other fossil fuel products should set targets on scope 3 "use of sold products" in line with well-below 2°C scenarios (2.5% annual linear reduction), irrespective of the share of these emissions compared to the total emissions of the company. Owners and operators of gas networks should account for emissions from the gas distributed in their inventory and target boundary, even if this is currently optional under the GHG Protocol accounting standard.[34] [35]

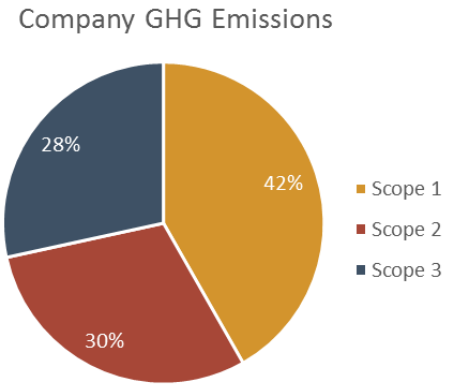
[32] SBTi target validation criteria requires that companies do not count indirect use phase emissions towards the 2/3 scope 3 target boundary if they decide to include these emissions in their inventories.

[33] See https://sciencebasedtargets.org/transport-2/ for technical resources for transport activities.

[34] Specifically, however, Oil & Gas companies should contact the SBTi to inquire about options to validate targets in the meantime.

[35] Please note that this refers to the requirement under Version 4.1 of the SBTi criteria.

Box 6-2: Determining Relevant Scope 3 Categories



An international industrial chemical and gas company conducted a screening inventory of its full value chain and determined that scope 3 emissions contributed almost 50% of its total footprint. Recognizing that scope 3 was a significant contributor to overall emissions, the company then investigated which of the 15 scope 3 categories contributed most to scope 3 emissions. Three categories were not applicable for the company and were not included in the inventory (categories 10, 13, and 14). Conducting the inventory for the remaining categories led the company to focus its target setting activities on the three categories that accounted for the majority of emissions: upstream fuel and energy, use of sold products, and investments.

Category	Scope 3 Emissions (mmt CO2e)	% of Scope 3 Emissions
1. Purchased goods and services	773,731	8%
2. Capital goods	35,054	>1%
3. Fuel- and energy-related activities (upstream)	5,152,751	51%
4. Upstream transportation and distribution	125,000	1%
5. Waste generated in operations	10,667	>>1%
6. Business travel	41,526	>1%
7. Employee commuting	39,742	>1%
8. Upstream leased assets	32,170	>1%
9. Downstream transportation and distribution	221,217	2%
11. Use of sold products	2,150,739	21%
12. End-of-life treatment of sold products	116,379	1%
15. Investments	1,347,360	13%

6.3 Determine whether to set a single target or multiple targets

Companies can choose to set multiple, category-specific targets or a single target covering all relevant scope 3 categories. They may also choose to set a single target covering total scope 1, 2 and 3 emissions. Each type of target boundary has advantages and disadvantages (see Table 6-3).

Table 6-3. Advantages and Disadvantages of Different Target Boundaries Covering Scope 3 Emissions.

Target Boundary	Example	Advantages	Disadvantages
A single target for total scope 1, 2 and 3 emissions	● Autodesk: reduce total scope 1, 2, and 3 emissions 43% by 2020 from 2008 levels. ● Capgemini UK PLC: reduce total scope 1, 2, and 3 emissions	● Ensures more comprehensive management of emissions across the entire value chain ● Offers greater flexibility on where and how to achieve the most cost-	● May provide less transparency for each scope 3 category ● Requires the same base year for the different scopes, which may be difficult if scope 1 and 2 base

	40% by 2030, from 2014 levels. ● General Mills: reduce scope 1, 2, and 3 emissions 28%, from farm to fork to landfill by 2025, using a 2010 base-year.	effective GHG reductions ● Simple to communicate to stakeholders ● Does not require base year recalculation for shifting activities between scopes (e.g., outsourcing)	years have already been established
A single target for total scope 3 emissions	● EDP: reduce absolute scope 3 emissions 25% by 2030, from 2015 levels. ● Kellogg Company: reduce absolute value chain emissions 20% by 2025, from 2013 levels.	● Ensures more comprehensive GHG management and greater flexibility on how to achieve GHG reductions across all scope 3 categories (compared to separate targets for selected scope 3 categories) ● Relatively simple to communicate to stakeholders	● May provide less transparency for each scope 3 category ● May require base year recalculation for shifting activities between scopes (e.g., outsourcing)
Separate targets for individual scope 3 categories	● Dell: reduce the energy intensity of product portfolio 80% by 2020, from 2011 levels. ● Panalpina: reduce scope 3 emissions from outsourced transportation and business travel 15% by 2025 from 2013 levels. ● See below for further examples	● Allows customization of targets for different scope 3 categories based on different circumstances ● Provides more transparency for each scope 3 category ● Provides additional metrics to track progress ● Does not require base year recalculations for adding additional scope 3 categories to the inventory ● Easier to track performance of specific activities	● More complicated to communicate to stakeholders ● May require base year recalculation for outsourcing or insourcing ● May allow increases in absolute emissions and/or emissions intensity from other categories, unless those categories also have their own targets

6.4 Identify an appropriate type of target

Scope 3 targets can be framed as absolute targets, emission intensity targets, or supplier engagement targets, as described below. Companies may also wish to set other types of targets but should only do so if the targets can be translated into such absolute, intensity and/or engagement targets.

Because scope 3 sources are not under the direct control of the reporting company, ambitious reductions in scope 3 emissions can be more difficult to realize than comparable reductions in scope 1 and scope 2 emissions. For this reason, absolute or intensity scope 3 targets need not be aligned with well-below 2°C or 1.5°C scenarios. They can be aligned with 2°C scenarios. Alternatively, they should lead to ambitious emissions intensity reduction, using one of the options listed below.

Absolute Targets

Absolute targets should be aligned with 2°C scenarios at the minimum. Suitable methods for setting scope 3 absolute targets are absolute contraction and the SDA, although the SDA is directly applicable to scope 3 for only specific sectors (see Box 6-3).

Emissions Intensity Targets

Under existing best practices, intensity targets are considered ambitious if they represent one of the following types of targets:

- Physical intensity targets aligned with 2°C scenarios. Such targets should be set using the SDA (if an applicable pathway is available, see Box 6-3) or otherwise modelled such that they reduce absolute reductions in line with 2°C scenarios.
- Physical intensity targets that do not lead to growth in absolute emissions and reduce emissions intensity by a linear average of at least 2% per year over the target period.[36]
- Economic intensity targets that reduce emissions intensity by at least an average of 7% year on year over the reduction period. Please see section 3.1 for information on the GEVA method used to set economic intensity targets.

Supplier or Customer Engagement Targets

In a supplier engagement or customer engagements target, a company commits to drive the adoption of SBTs amongst its suppliers or customers. Examples of such targets include:

- Japanese multinational chemical company Sumitomo Chemical commits that 90% of its suppliers by product weight will institute science-based GHG reduction targets by 2024.
- SKYCITY Entertainment Group Limited commits that 67% of its suppliers by spend, covering purchased goods and services and capital goods, will set science-based targets by 2023.

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

Engagement targets may be set around any relevant upstream or downstream, scope 3 category. Companies can identify which suppliers and customers to include under the target based on spend and/or emissions impact. Engagement targets may alternately focus on “critical suppliers” or “strategic suppliers”

[36] The linear annual reduction rate of 2% was determined as the threshold for ambition as it represents the pathway towards a zero-carbon intensity by 2070 from a 2020 baseline.

that the company has already identified based on a variety of factors, such as operational risk. Spend data and critical supplier lists are advantageous when they can reliably serve as a proxy for leverage over suppliers. However, the biggest suppliers by spend are not always the biggest GHG emitters, so companies should make sure that, together with any additional scope 3 targets, the engagement target covers at least two-thirds of total scope 3 emissions.

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

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

Box 6-3. Limitations of the SDA in Setting Scope 3 Targets

Companies should be aware of two limitations in using the SDA to set absolute or emissions intensity scope 3 targets.

One limitation is that it can only be used for scope 3 targets when the GHG emissions of tier 1 suppliers are significant, relative to those of suppliers further removed from the company, and when scope 1 and 2 data can be obtained from the tier 1 suppliers. In practice, this means, the SDA is most appropriate for buildings (leased assets and franchises) and upstream or downstream transportation and distribution.

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

Other Types of Targets Companies May Set as Part of an SBT

Companies may wish to set targets that are not explicitly framed as targets to reduce emissions, but rather as targets to improve some specific aspect of business or product performance. Such targets are varied, and common examples include:

- Targets to eliminate or reduce the use of GHG-intensive inputs. Example: "25% of vehicle fleet is electric by 2025".
- Targets to adopt sector best practice. Example: "100% of crop suppliers reduce fertilizer application rates and use slow-release fertilizers or nitrification inhibitors".
- Targets to increase the use of reusable materials. Example: "Increase recycled content in packaging 80% by 2015, from 2022 levels".

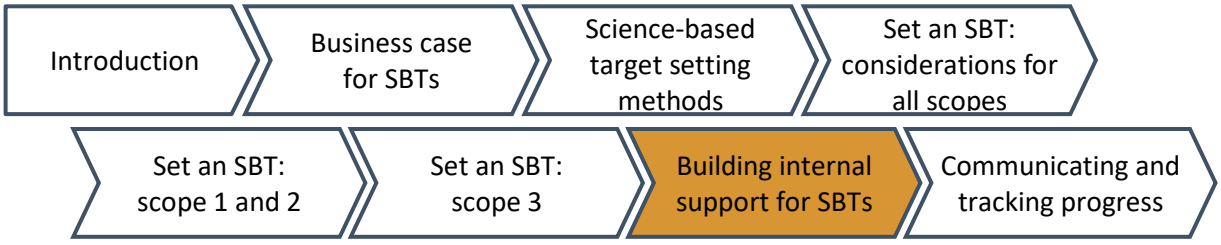
Such targets help in decomposing broad emissions reduction targets into narrower targets that can steer internal management decisions. If a company sets such a target as part of its SBT, it should make sure that it can quantify the expected emissions reduction benefits as they contribute to an absolute, intensity or engagement target.

To ensure the integrity of a company's overall reduction efforts, the company should also make sure to take into account whether a target for a specific subset of emissions sources might lead to emissions increases at other sources. For example, a company might wish to set a target to reduce the energy intensity of its product portfolio in the use phase or to switch from oil- to gas-powered vehicles. A target around the entire life cycle may be preferred if more energy efficient products or if the gas-powered vehicles have higher emissions in the production phase, compared with less energy efficient products.

Targets Companies Should Not Set as Part of an SBT

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

7. Building internal support for science-based targets



SBTs represent a new way of setting goals for many companies and often yield more ambitious targets than traditional target-setting approaches. As such, gaining buy-in across business units and up the chain to the C-Suite may require careful justification. The previous chapter on "Making the Business Case for Science-based Targets" offers some additional arguments to be used during the process of building internal support. Based on corporate experience, this chapter explores how to get company stakeholders on board through all stages of the target-setting process and how to navigate potential challenges and push-back while doing so.

Key Insights in This Chapter

- Staff responsible for setting an SBT should partner closely with all levels of the company during the target-setting process to socialize goals, assess feasibility, and co-create practical implementation plans.
- Staff should anticipate the issues that commonly create internal push-back and formulate ready-made responses.
- For scope 3 targets, companies should work closely with and support suppliers during the target-setting process to increase buy-in and enable implementation.

7.1 Get all levels of the company on board

During the process of determining an SBT, the sustainability team must often build support from both executive leadership and business unit managers in order to access resources for developing, finalizing, announcing, and ultimately achieving the target.

Useful strategies for securing internal support include:

- Partner closely with the business units and socialize the target at the grass roots:
  - Ask each department to offer what it can feasibly do to meet the target and avoid putting all the responsibility on any single business unit.
  - Get commitments from operations to make the needed reductions and show, through bottom-up analysis, how the target will be achieved. This will help in obtaining approval from senior leadership if setting an SBT was not driven from senior management.
  - Find internal champions within influential departments – people who are not on the sustainability team but who will support the notion of setting an SBT as well as implementing the target.
- It is not recommended to delegate a business unit a target to achieve in an area it has little control over; doing so is demotivating.
- If a company operates in multiple countries, consider having champions at the country level who can engage country operations to identify reduction opportunities.

- Make a convincing business case, including points on risk mitigation and demonstrating potential financial returns where possible:
  - Indicate how much money the SBT will help the company save.
  - Create a balanced portfolio of projects with short and long-term pay-back periods.
  - Show how the SBT contributes to core business strategy and how the target can help mitigate risk.
  - Do not discount the contribution that smaller projects, such as facility energy efficiency measures, can have on the overall target. Such contributions can be collectively significant.
- Make it easier and more desirable for business units to meet the target:
  - Assist business units in conducting analyses and offer feasible ideas that the units can practically implement.
  - Allow the business units to keep the money they save from the emissions reduction projects they implement.
  - Set short-term, interim targets to create a sense of urgency and collective ownership.
- Enlist outside help if the necessary technical skills are not in-house:
  - When necessary, partner with NGOs or consultancies that understand the science behind SBTs and can provide guidance in setting an SBT.
  - Work with the government, suppliers, customers, and other stakeholders to better understand the available options.
  - For scope 3 emissions, take the time to describe to value chain partners the target(s) and general best practices for reducing emissions (and, if a top supplier commitment has been set, best practices for calculating and reporting these reductions).

Land Securities: Company Quote
Tom Byrne, Energy Manager at Land Securities: "Another challenge was how to make the link between the macro issue of climate change, which people see on the news, and the specific details of a science-based target. In this sense, the internal consultations and workshops were really important. We started with the sustainability team and moved out, via more senior directors who we knew were interested in these issues (the 'early adopters'), to the most senior reps who we needed to convince. By having others on board already, and by being able to show how the science informs the target and links back to the global situation, it was much easier to get sign off from the top. We had a really powerful message that empowered people and made the ambitious targets much more palatable."

Pfizer: Company Quote
Sally Fisk, Senior Corporate Counsel and Environmental Sustainability Advisor at Pfizer: "Across a large network of diverse sites, our Global Engineering group has worked hard to engage our colleagues to ensure they understand the value of energy efficiency and renewable energy and feel empowered to seek out opportunities to make GHG reductions rather than viewing the request to make reductions as a burden. Communication was a key element to ensuring that colleagues from other parts of the business understood the potential global implications of climate change and therefore the need to act. Having a nearer term goal (2020) with a longer-term vision (2050) approved at the executive leadership level really helped our team to obtain buy-in."[37]

Defining the target and getting approval is not always a linear process and can involve feedback loops or some back-and-forth with leadership and business units before the target is internally approved. To have greater confidence in securing support it is important to:

[37] For more information on Pfizer's SBT, see http://sciencebasedtargets.org/case-studies/case-study-pfizer/.

Understand the Audience

Employees outside of sustainability roles do not typically have a background in climate science but they could be familiar with the concepts of climate change and sustainability. Finding the right starting point for making the case for an SBT will be critical to getting those in the room on board. For some audiences this may mean explaining in clear terms the IPCC's findings and the necessity for companies to reduce emissions in line with science. Other groups may be ready to jump into discussing the target itself.

Make the Case with Data but Don't Underestimate the Importance of Interpersonal Skills

A recent survey of sustainability professionals found that interpersonal skills are the most important factor in being a successful sustainability leader. Because achieving an SBT will take the cooperation of multiple divisions within a company, it is important to develop relationships and build networks to assist in this endeavor.

Also critical is the ability to make the case with data. While the SBT approach is relatively new, there is a good body of evidence to support the business benefits of setting ambitious GHG targets (see Chapter 2). Quantifiable benefits from GHG emission reductions include cost savings, energy savings, and an improved bottom line. Other important benefits of setting an SBT should also be brought into the discussion. These include driving innovation, enhancing credibility and reputation, and demonstrating leadership.

Communicate the Target in Business Terms

Framing targets in business terms, such as risk, opportunities, revenue and reputation, rather than in climate or sustainability jargon, will resonate with corporate decision makers. And while getting decision makers on board is critical to setting and achieving a target; targets should also be clearly communicated in business language to all employees within an organization.

Engage Employees Across the Company Early On

Internal audiences to consider include almost every department in a company, from facilities operations to procurement. In particular, management, employee "Green Teams", communications departments, and departments directly involved in substantial emissions reduction activities should be informed of, and involved in the target-setting process. It is also important that the teams responsible for the activities and projects to reduce GHG emissions have had some role in validating the feasibility of their portion of the target and are not just informed of the target after it has been announced. Investing in employee awareness-raising can engender a supportive company culture and may inspire employees that were not directly involved in the target-setting exercise to create innovative new solutions to cut GHG emissions.

The earlier and more effectively the importance of setting and achieving SBTs is communicated to an employee, the more likely it is that the company will get internal buy-in for its target efforts. Consider integrating ways to describe the rationale behind SBTs and how your company will work towards achieving the target into employee orientation and training/handbooks. Periodic announcements at company/departmental meetings are also a potential avenue for communicating progress. Likewise, written media such as company newsletters, blogs, and social media are good places to highlight achievements and areas for improvement.

7.2 Address challenges and push-back

Before approving an SBT, a commitment that affects multiple divisions, resources, and budgets within a company, leadership will likely raise some important questions.

- **If our target is tied to our future growth rate, change in market share, or other aspect of business strategy, what are we required to disclose publicly? Do we need to be concerned with confidentiality?**

Intensity targets that use a sector-specific method or an economic intensity approach will generally be tied to metrics such as market share, estimated production growth, financial growth rates, or contribution to GDP. However, it is not necessary to publicly disclose the assumptions used to determine the target and all sensitive information can remain confidential while still announcing the SBT. Furthermore, all information submitted to the SBTi is treated with the utmost care in accordance with the terms and conditions of the target validation service.

- **Our initial target achievement date is for just 5 years from now. How are we going to get there?**

Shorter-term targets can be validated by putting together and summing up the emissions reduction potential of multiple projects, including anticipated renewable energy purchases, plans for changes in product design or suppliers, adoption of new technologies, and planned changes in product mix. Many companies use typical business metrics to determine which projects are viable, including Internal Rate of Return, Return On Investment, and payback periods. Combining these measurements with estimated GHG savings will help to build a project portfolio that makes GHG reduction targets achievable. This group of projects can then be presented as part of the target-setting package.

Alternatively, some companies are satisfied to set a target in line with science and then let the target be the motivator for discovering projects and fostering innovation. While this is a less systematic approach, it can be just as successful in some company cultures who put a greater emphasis on emergent processes.

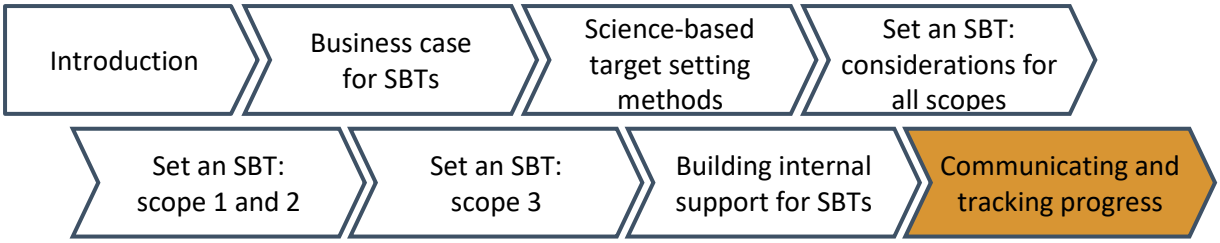
- **What if we don't achieve our announced target?**

Although the plan for achieving an SBT may be carefully thought out, some companies may not achieve their target (or interim targets) due to unexpected circumstances, for example, stronger than predicted organic growth or delays in bringing renewable energy projects online. In such cases, companies can help retain the confidence of their stakeholders by transparently communicating their situation, including progress achieved to date and remaining reduction gaps. Describing the plan for moving forward and how the target gaps will be addressed is equally important. In addition, it is recommended that companies reassess their targets every five years at a minimum to ensure consistency with most recent climate science and best practices.[38]

These and other internal and external communication and reporting issues are discussed in more detail in the following chapter (Chapter 8).

[38] Per SBTi criteria, targets shall be reviewed, and if necessary, recalculated and revalidated every 5 years at a minimum. The first year in which a target recalculation becomes mandatory will be 2025.

8. Communicating and tracking progress



The effective communication of an SBT guides internal management decisions, increases buy-in from employees, and enhances corporate reputation. Furthermore, it sends positive messages to the business community and policymakers that companies are taking ambitious climate action seriously. Once a target has been set, communicating it fully, simply, and clearly is important to accurately inform stakeholders and build credibility. Equally important, SBTs should be recalculated, as needed, to reflect changes in climate science and business context to ensure their continued relevance.

This chapter outlines the key steps in communicating SBTs and tracking progress, including defining the audience, deciding where to disclose SBT-related information, and determining what information to disclose and when the SBT should be recalculated.

Key Insights in This Chapter

- Companies should follow the GHG Protocol accounting and reporting principles to disclose quantitative and qualitative aspects of the SBT so that audiences can fully understand the SBT's context, implications and nuances.
- Companies should report annual progress in reaching their targets.
- SBTs should be communicated in understandable terms and in engaging ways, such as through diagrams and infographics, while avoiding jargon.
- SBTs should be recalculated every five years, at a minimum.

8.1 Publicly communicating SBTs and performance progress

Key communication steps include:

Define the Audience

It is important to first define the primary audience before determining what and how to communicate the SBT. Customers, suppliers, competitors, partners, and investors may all have an interest in a company's GHG emissions reduction efforts. Companies should first identify the interest of the external party and to ensure to tailor the pitch to emphasize aspects of the target-setting that are relevant to the party. It is also important to keep in mind that some information used in target setting may be considered confidential (e.g., projected activity data) and that messaging may need to be tailored to protect sensitive information. However, this should not prevent a company from effectively communicating its SBT to external audiences. Regardless of the audience, SBTs should be communicated in understandable terms (see Box 8-1).

Box 8-1: Communicating SBTs in Understandable Terms

In addition to ensuring that sufficient detail is included when communicating an SBT for a technically minded audience, a company should also present this information in a way that is jargon-free and understandable to a general audience.

For example, to the lay person with a limited environmental or financial background, the intensity metric "$mtCO_2e$/value added" may be confusing or meaningless. Any absolute or intensity metric should be defined either in a glossary or within the text of the communication itself. Using "real life" examples or comparisons such as "this reduction equals taking 4,000 passenger vehicles off the road annually" can be helpful for both external and internal audiences in understanding the magnitude of a company's progress. The US EPA's Greenhouse Gas Equivalencies Calculator[39] is a useful tool for equating a quantity of emissions with real-life emissions sources, such as vehicles, power plants, or home energy use.

Even those audiences with extensive background knowledge may also benefit from clarification. For example, the term "value added" (which can be used as the denominator of an intensity metric) can be defined as gross profit, operating profit, EBITDA[40] minus all personnel costs, or revenue minus the cost of purchased goods and services, depending on local accounting terminology. Using language without climate science and financial jargon can provide clarity, reduce confusion and create a more impactful communication message. For example, the phrase "direct emissions from a company's operations" can be used in place of or alongside the term scope 1 emissions.

The challenge lies in ensuring that a simplified, layman's description of an SBT continues to reflect scientific grounding and does not convey inaccurate information. For this reason, the SBTi recommends using links or footnotes to provide access to the full, technical description of the target, even in communications intended for a non-technical audience.

Terms that Simplify Technical Jargon

Technical Term	Layman's Term
Scope 1 emissions	Direct emissions
Scope 2 emissions	Emissions from purchased heat and electricity
Scope 3 emissions	Value chain emissions
Science-based target	Emissions target supported by climate science

Decide Where to Disclose

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

[39] The EPA calculator translates emissions data into estimates of the annual emissions from cars, households, and power plants. https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

[40] Earnings Before Interest, Taxes, Depreciation and Amortization

The Global Reporting Initiative (GRI)[41] provides a widely used framework for reporting environmental, social, and economic performance and impacts. SBTs and reduction efforts can be included in GRI reports although they may not be highlighted to the same degree that a separate webpage or company report would afford.

CDP's Climate Change Questionnaire[42] is also a well-known public resource for reaching large external audiences. CDP provides a platform to disclose climate leadership to investors, purchasers, and governments. CDP also communicates SBTs to the NAZCA platform,[43] which tracks significant commitments made by "non-state actors", including companies, as part of the UNFCCC's Action Agenda.

Follow Guiding Reporting Principles

It is essential to disclose all pertinent aspects of the target so that the audience can fully understand its context, implications, and nuances. The GHG Protocol Corporate Standard (WRI & WBCSD 2004) defines five overarching principles that should guide the development of corporate GHG inventories. These same principles should also be used to describe the target and report on progress.

- Relevance: Ensure the target appropriately reflects the GHG emissions of the company and serves the decision-making needs of the users – both internal and external to the company.
- Completeness: Account for and report on all GHG emission sources and activities within the chosen target boundary. Disclose and justify any specific exclusions.
- Consistency: Use consistent methodologies to allow for meaningful comparisons of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series.
- Transparency: Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.
- Accuracy: Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

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

Describe the Target

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

Technical Information on the SBT

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

- Base year and target year;

[41] For the GRI standards on sustainability reporting, see https://www.globalreporting.org/standards/.

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

[43] The NAZCA platform currently reports the commitments of at least two thousand companies. http://climateaction.unfccc.int/.

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

Companies are also encouraged to specify the actual target emissions level (Mt CO_2e) in addition to the percentage reduction.

Scope 3 Targets

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

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

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

There is no single, prescribed template for communicating a scope 3 target.[44] As with scope 1 and 2 target disclosures, it is important to understand the audience and present the target in a way that is meaningful and relevant to them. It is also important to recognize that achieving a scope 3 target depends on collaboration and cooperation from suppliers, customers and other external stakeholders, so it must be communicated in terms that encourage them to be motivated and inspired to contribute.

Qualitative and Contextual Information

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

- **Motivation**: Why did the company commit to such significant emissions reductions? Why is following climate science important to corporate leadership? The answers to these questions are illuminating for stakeholders, journalists, and others who are interested in business management trends and/or climate change. They might provide an incentive to others to contribute to the target or follow suit by setting an SBT at their own organization.
- **Relationship with broader company objectives:** Many companies will explore radically different business models, technologies, operational procedures, suppliers and other business practices in

[44] The SBTi has specific requirements for describing an SBT for reporting on the SBTi's website.

order to become a low-carbon business. Stakeholders may require a full understanding of the company's current standing and vision for the future when considering an SBT. Therefore, the company may wish to connect the target to its strategic, financial, and operational plans.

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

SBT Talking Points
● Science tells us that we must cut global GHG emissions 45% from 2010 levels by 2030 and reach net zero emissions around 2050 to limit warming to 1.5°C and prevent catastrophic and irreversible climate change. This will require global transformational change. ● Companies must set GHG reduction targets that align with best-available climate science in order to transform their business for a low-carbon future. ● Smart companies know that setting ambitious targets is in their own self-interest. SBTs can help drive innovation and secure long-term competitive advantage. ● Setting long-term, meaningful targets sends a clear signal to stakeholders as to where a company is headed and provides the context for strategic investments needed to transform business models. ● In December 2015, nearly every nation on earth signed the historic Paris Agreement, agreeing to limit warming to well-below 2°C above pre-industrial levels. Now companies must do their part to fulfill that promise, and an emissions target that aligns with this global goal is a critical first step.

Describe Progress Toward the Target

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

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

- Investments or changes that have been made that may not yet have delivered significant results but that are expected to do so in the coming years or that enable the necessary transformation towards the long-term goal.

8.2 Recalculating targets

To ensure consistent tracking of performance over time, a company should recalculate its SBT, as needed, to reflect significant changes that would otherwise compromise the target's relevance.[45] Recalculation should be triggered by significant[46] changes in:

- Company structure (e.g., acquisition, divestiture, mergers, insourcing or outsourcing);
- Methodology for calculating the base year inventory (e.g., improved emissions factors or activity data);
- Methodology for calculating the target (e.g., emissions scenarios, growth projections and other assumptions);
- Recalculations should also be performed for the discovery of significant errors.

Long-term targets, in particular, may require recalculation to update the company growth assumptions used to project the target and also to reflect the latest climate science. For example, targets could be recalculated to align with the latest emissions scenarios available from the IPCC or other scientific bodies, as these scenarios are published.

Recalculation should not be triggered by organic growth and decline, which is defined as "increases or decreases in production output, changes in product mix, and closures and openings of operating units that are owned or controlled by the company" (WRI & WBCSD 2011, 106).

In general, companies should check their targets annually and at minimum every five years. When target projections have changed, companies should keep their short-term targets and recalibrate their long-term target trajectory as short-term targets come due for renewal.

[45] To ensure targets remain aligned with the most recent climate science, version 4.1 of the SBTi criteria requires that companies review, and if necessary revalidate, their targets every five years from the date of the original target approval. This will become mandatory in 2025.

[46] To determine whether the cumulative impact of such changes warrants recalculations, companies should adopt a significance threshold. The GHG Protocol does not specify a threshold value, although a 5 percent value is generally recommended. Using a 5 percent threshold, changes would be considered significant if, in the aggregate, they affect the SBT by more than 5 percent. Once defined, a significance threshold should be applied consistently over time.

Key terms

Absolute emission target	An overall reduction in the amount of GHGs a company emits into the atmosphere by a target year relative to levels in a base year.
Allocation approach	The way the carbon budget underlying a given emissions scenario is allocated among companies with the same level of disaggregation (e.g. in a region, in a sector, or globally).
Assessment report (AR)	Material published by the IPCC providing a full scientific and technical assessment of climate change.
Base year	The period in history against which a company tracks performance over time.
Carbon budget	The estimated amount of carbon (or CO_2) the world can emit before warming will exceed specific temperature thresholds.
CO_2 equivalent (CO_2e)	A unit used to express the global warming potential of different greenhouse gases as a single figure, namely the equivalent amount or concentration of carbon dioxide.
Emissions intensity target	A reduction in emissions relative to a specific business metric, such as production output or financial performance of the company (e.g., tonne CO_2e per tonne product produced or value added). The target is achieved by a target year relative to levels in a base year.
Emissions scenario	A forecast of future emissions and atmospheric GHG concentrations, used to assess the impact of socioeconomic and technological changes on future emissions.
Energy Technology Perspectives (ETP)	Document published by the IEA that provides scenarios that set out pathways to a sustainable energy future in which technology choices are driven by costs and environmental factors.
Greenhouse gas (GHG)	A gas that absorbs and emits radiation in the atmosphere, contributing to the greenhouse effect. GHGs include (among others) water vapor, carbon dioxide, methane, nitrous oxide, ozone, and CFCs.
Heterogeneous sector	A sector that cannot be described using a single physical indicator because it produces a diverse array of products that each have unique characteristics and traits and are difficult to compare to one another.
Homogeneous sector	A sector in which companies make products that are uniform both within companies and across the sector as a whole, and that can be described using a single physical indicator.
Offset	Discrete GHG reductions used to compensate for GHG emissions elsewhere.
Representative concentration pathway (RCP)	A GHG concentration trajectory developed in the IPCC 5th Assessment Report (AR5) for climate modeling and research.
Scope 1 emissions	Emissions from sources that are owned or controlled by the reporting company.
Scope 2 emissions	Emissions from the generation of electricity, heat, or steam that has been purchased by the reporting company.
Scope 3 emissions	All other indirect emissions from sources that are located along the reporting company's value chain.
Target year	The year by which a company intends to meet the emissions reduction committed to in a target.
Value-added	Depending on accounting terminology, this is defined as gross profit, operating profit, revenue minus the cost of purchased goods and services, or earnings

	before interest, taxes, depreciation, and amortization (EBITDA) plus all personnel costs.

List of abbreviations

AR5	Fifth Assessment Report from the IPCC
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide-equivalent
ETP	Energy Technology Perspectives
GDP	gross domestic product
GEVA	Greenhouse gas Emissions per Value Added
GHG	greenhouse gas
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt hour
RCP	representative concentration pathway
SBT	science-based target
SDA	Sectoral Decarbonization Approach
SR15	Special Report on Global Warming of 1.5 °C from the IPCC
UNFCCC	United Nations Framework Convention on Climate Change

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About the partner organizations in the Science Based Targets initiative

CDP

CDP is an international not-for-profit organization providing the only global system for companies and cities to measure, disclose, manage, and share vital environmental information. These insights enable investors, companies, and governments to mitigate risks from the use of energy and natural resources, and to identify opportunities from taking a responsible approach to the environment. (https://www.cdp.net)

UN Global Compact

The UN Global Compact believes it's possible to create a sustainable and inclusive global economy that delivers lasting benefits to people, communities and markets. To make this happen, the UN Global Compact supports companies to: do business responsibly by aligning their strategies and operations with Ten Principles on human rights, labor, environment and anti-corruption; and take strategic actions to advance broader societal goals, such as the forthcoming UN Sustainable Development Goals, with an emphasis on collaboration and innovation. (www.unglobalcompact.org)

World Resources Institute (WRI)

WRI focuses on the intersection of the environment and socioeconomic development. We go beyond research to put ideas into action, working globally with governments, business, and civil society to build transformative solutions that protect the earth and improve people's lives. (www.wri.org)

WWF

WWF is one of the world's largest and most experienced independent conservation organizations, with over 5 million supporters and a global network active in more than 100 countries.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption. (http://wwf.panda.org)