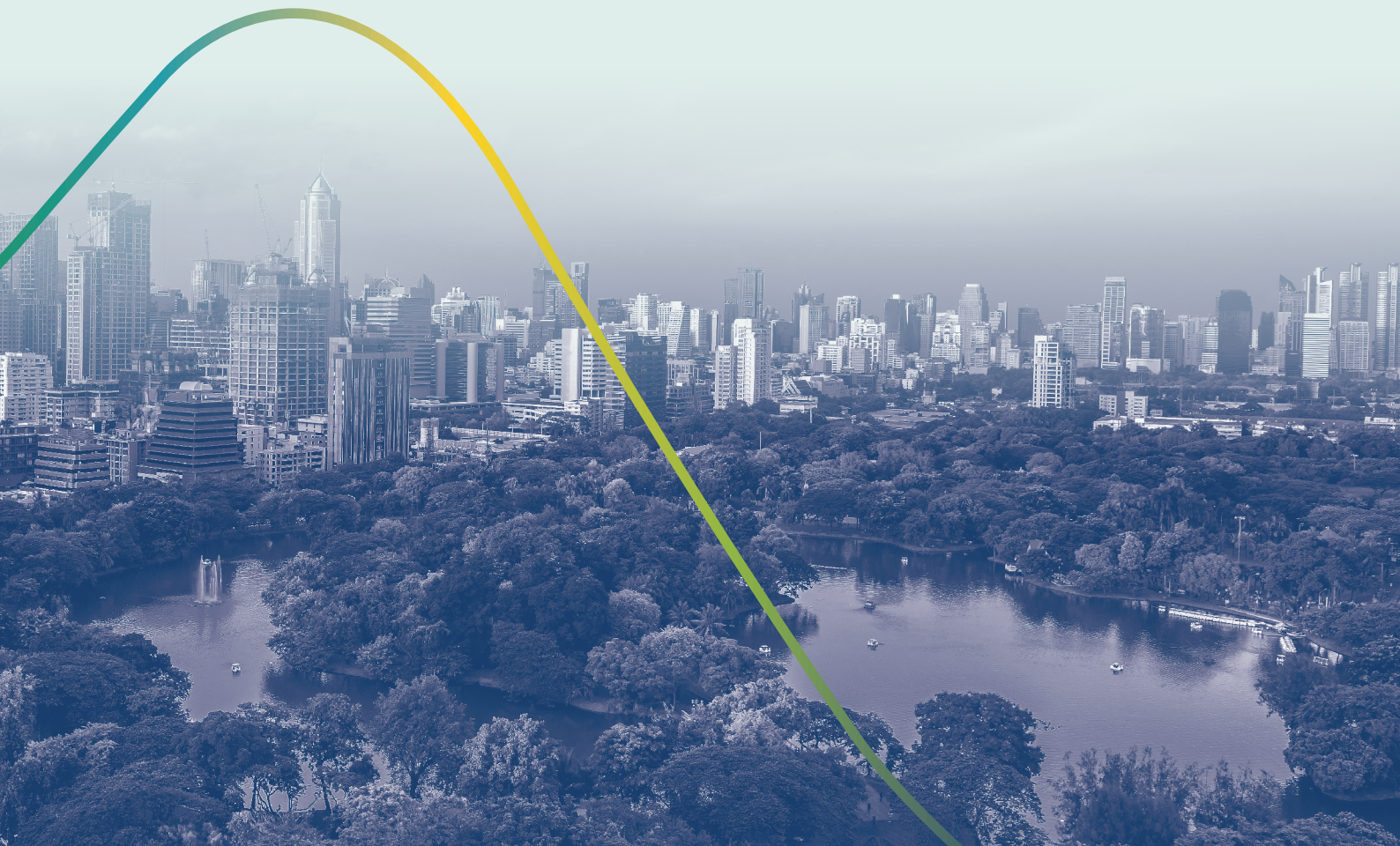




EUROPEAN **COVENANT OF COMPANIES** FOR CLIMATE AND ENERGY

A GUIDE TO
SCIENCE-BASED TARGETS

April 2023



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1. INTRODUCTION

This guide aims to clarify the concept of science-based targets and what they could mean for companies participating in the Covenant of Companies for Climate and Energy (CCCE). After explaining the background of science-based targets, with particular focus on the Science Based Targets Initiative (SBTi), this guide proposes a number of modalities how the CCCE could be positioned vis-à-vis the SBTi framework.

2. UNFCCC PARIS AGREEMENT – REMAINING CARBON BUDGETS FOR THE GLOBE

From 1992 to 2015, governments have tried to agree on a common approach to address the increasing greenhouse gas (GHG) emissions and the associated Climate Change potential. During the COP21 in Paris, governments each agreed to reduce their emissions to collectively assure that global temperatures would not exceed 2 degrees Celsius from pre-industrial times¹. As the GHG concentration in the atmosphere has a correlation with the increase in temperature, governments had, through the Paris Agreement, also set a cap on the total Carbon Budget, whereby the size of the budget is aligned with the final maximum temperature rise (see Figure 1). Taking into account the fact that there is a global budget, governments, NGOs and businesses have shifted their focus from not just reducing emissions but also on how mitigative actions to reduce emissions actually impact the GHG concentrations in the atmosphere by 2050.

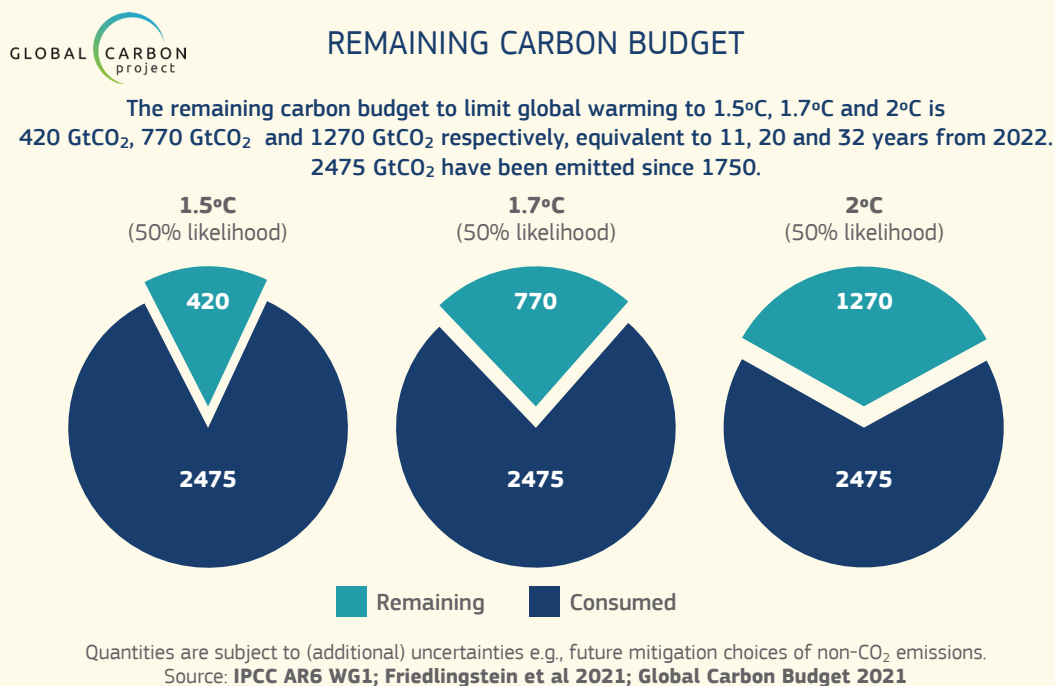


Figure 1: Size of remaining carbon budget based on the maximum temperature rise.

¹During COP26 in Glasgow 2021 this target was changed by the governments to a maximum 1.5 degrees. The original Paris Agreement also made reference to the 1.5 degrees, but at the time was set as a target that countries should aim for but was not considered a guaranteed maximum increase for which countries agreed on to be 2 degrees.

3. TARGET SETTING

With the increase in attention on the need to decarbonise the economy and the introduction of different measures to achieve the decarbonisation, the need also arises to assess the effectiveness of the measures and the claims that were made. Terminology such as carbon neutral, zero emissions, decarbonisation pledges and carbon negative, have become part of today's climate action discussions. However, comparing claims associated with decarbonisation efforts as well as determining whether those claims actually contribute to a positive climate impact have become not only harder but also less transparent. It becomes increasingly hard when one tries to link claims made by stakeholders to the actual commitments that governments have made through their nationally determined contributions (NDCs) under the Paris Agreement; and the increasing calls to action from the Intergovernmental Panel on Climate Change (IPCC) reports that need to be heeded if we are to come anywhere close to the Paris Agreements objectives.

Through the NDCs, countries are setting their country-specific targets. However, as these targets are widely considered to be insufficient to achieve the Paris Agreements Goals, industry and NGOs are working on their own targets that would not only show their ambition but also their commitments towards an effective decarbonised economy. The decarbonisation pathways vary by sector and country based on the available resources, knowledge, technology, etc.

At the same time, not all decarbonisation solutions meet the requirements of businesses. For example, although renewable energy (e. g. wind/solar) has become more affordable and efficient, it is still limited in its application in sectors where high intensity energy/heat is required continuously over time.

Scaling-up certain technologies could be the answer to energy/heat needs but in order to scale, other factors may limit the usage of these alternative technologies (negative environmental & social impacts, raw material constraints, high energy inefficiencies/losses within the production process etc.).

Nonetheless, when looking at each individual sector, it is possible to create a decarbonisation pathway that uses both low-hanging fruit solutions and longer-term decarbonisation solutions.

4. INVESTMENT/LENDER MARKET

Responding to the increasing attention that climate change and its impacts are receiving, the financial sector is focussing on determining and reducing the impact that their investment decisions have on the decarbonisation of our economy. For example, the Glasgow Financial Alliance for Net Zero (GFANZ) (launched in 2021) consists of 160 of the biggest financial institutions that collectively have the aim to bring together leading net-zero initiatives from across the financial system and accelerate the transition to net-zero emissions by 2050 at the latest. Although such initiatives do not immediately trickle down to the banks (with whom SMEs, in particular, operate) the scale of these initiatives does mean that increasingly lenders will ask their clients not only to demonstrate the financial viability of their business but also the impact that the investment will have on GHG emissions associated with the investment.

For example, one can expect that as part of the lending agreement companies will need to start reporting their annual emissions. Although banks may at present not require that decarbonisation targets are to be set, it is not unlikely that these institutions will ask their clients to link their investment to a zero-carbon target of the lender. Those companies that currently fall under the EU ETS already have had to demonstrate how investments would allow their EU Emissions Trading System (ETS) compliance. As the EU ETS will increase in its scope and as net zero investment gathers momentum, being able to understand the emission profile of a company and its decarbonisation pathway will become increasingly important.

5. SCIENCE BASED TARGET INITIATIVE

In line with the increased attention that target setting was getting, the Science Based Target Initiative (SBTi) was launched in 2015 to develop decarbonisation pathways for individual companies that are aligned with the Paris goals. Not only would these pathways create a method of identifying measures and actions and building the correct milestones, they would also introduce a robust assessment on what their overall impact is towards the carbon budget that society has set itself through the Paris agreement.

SBTi aims to provide an alternative, more rigorous approach of setting a target (as opposed to just picking a self-defined incremental target).

Since its launch, the SBTi has become the standard methodology framework for target setting for non-state actors (i. e. companies, NGOs, etc.) and forms the basis of an increasing number of different labelling systems which may be targeted to a particular market/country (Figure 2).

GEOGRAPHIC REACH OF SCIENCE-BASED TARGETS

Companies with approved targets and commitments by region as of December 31 2021.¹⁸

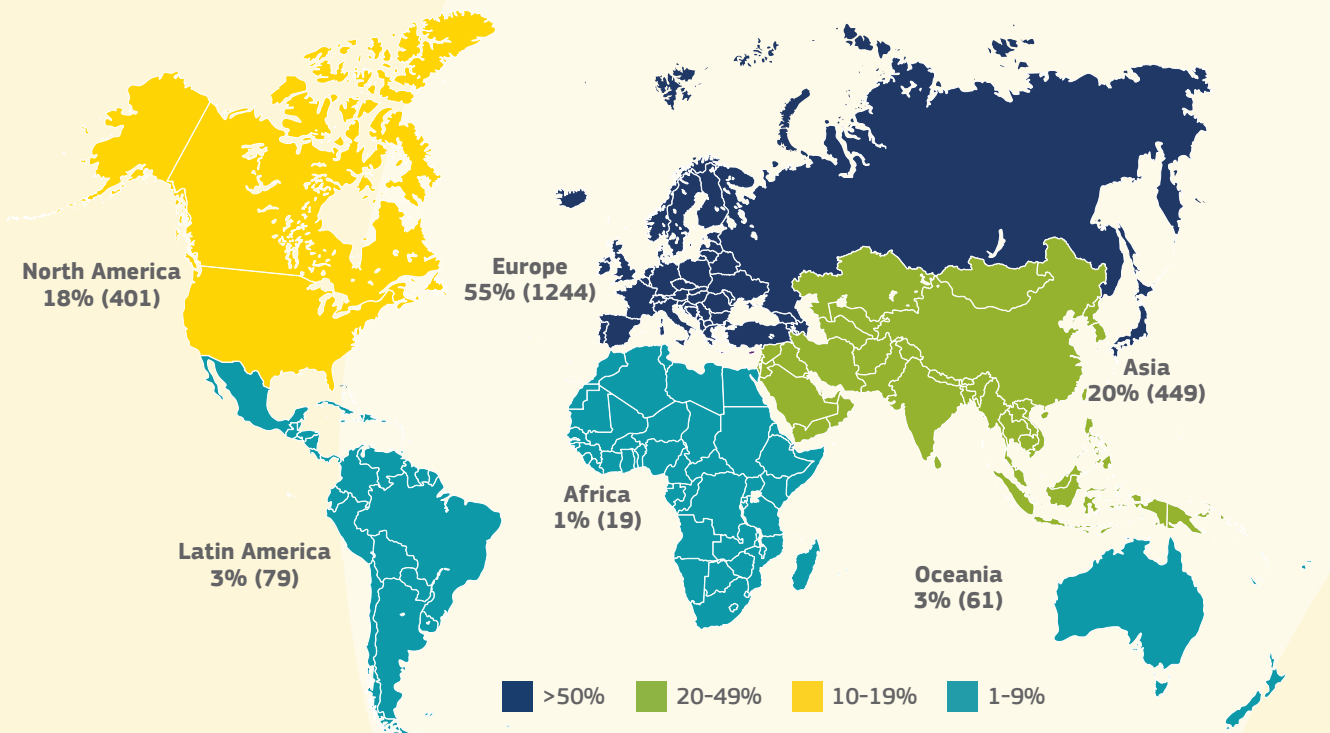


Figure 2: Geographic Reach of SBTi taken from the SBTi annual report 2021 (May 2022).

6. WHAT IS A SCIENCE-BASED TARGET?

The SBTi states, on its website and in its guidance, that:

Science-based targets show companies and financial institutions how much and how quickly they need to reduce their greenhouse gas (GHG) emissions to prevent the worst effects of climate change.

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.

The Science Based Targets initiative (SBTi) is a partnership between CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact (UN Global Compact). Setting science-based targets via the SBTi is also one of the We Mean Business Coalition commitments.

Organisations that commit to the SBTi automatically count towards the We Mean Business campaign (though they may opt out if they choose to).

The SBTi leads the Business Ambition for 1.5°C campaign, calling for business leaders to set emissions reduction targets in line with a 1.5°C future. Business Ambition for 1.5°C is a partner in the Race to Zero campaign. Therefore, companies that commit to the Business Ambition for 1.5°C campaign are automatically recognised as part of the Race to Zero campaign as well.

The Assessing Low Carbon Transition (**ACT**, <https://actinitiative.org/>) initiative complements the SBTi. By supporting companies in the process of setting science-based targets, the SBTi helps them define a clear sense of direction to be in line with a decarbonisation pathway. By supporting companies to achieve the low carbon transition and monitoring their climate action, ACT helps them implement that direction, and enhance the credibility of their climate commitments.

The SBTi logic to determine a science-based target for an individual company is based on the idea that globally (high-emitting) sectors as a whole have a carbon budget towards 2050 (Figure 3).

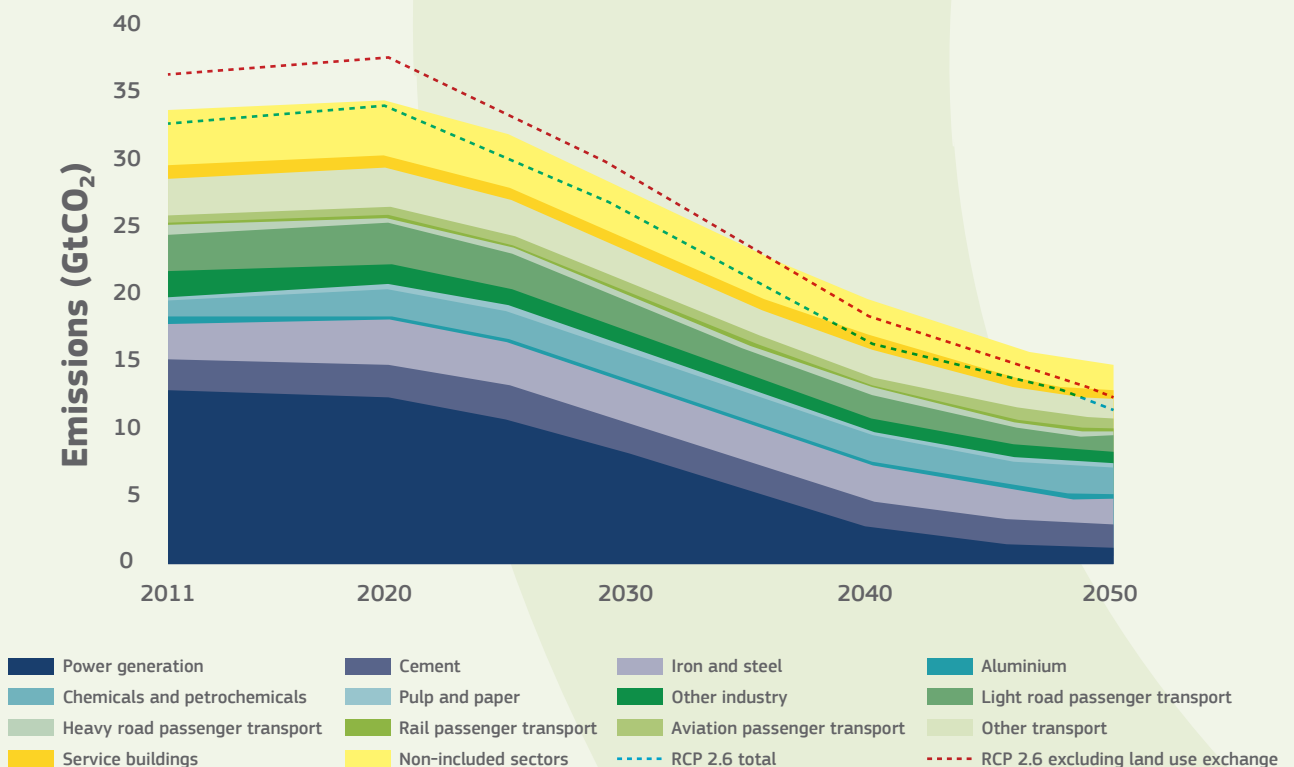


Figure 3: Sectoral carbon budgets towards 2050.

Source: IES ETP ZDS 2014.

6. WHAT IS A SCIENCE-BASED TARGET? Continued.

Given the global carbon budget and sectoral allocation of said budget (the emissions scenario), a target can be set for an individual company within a sector. This can be done through two methods:

- 1. Convergence method**, i.e. each company within a sector reduces its emissions intensity (so the intensity of emissions per output, note that this may mean that absolute emissions may increase, as a company may grow in the future) to a common goal – this means that some companies will need to work harder than others, as they need to catch up from their starting points.

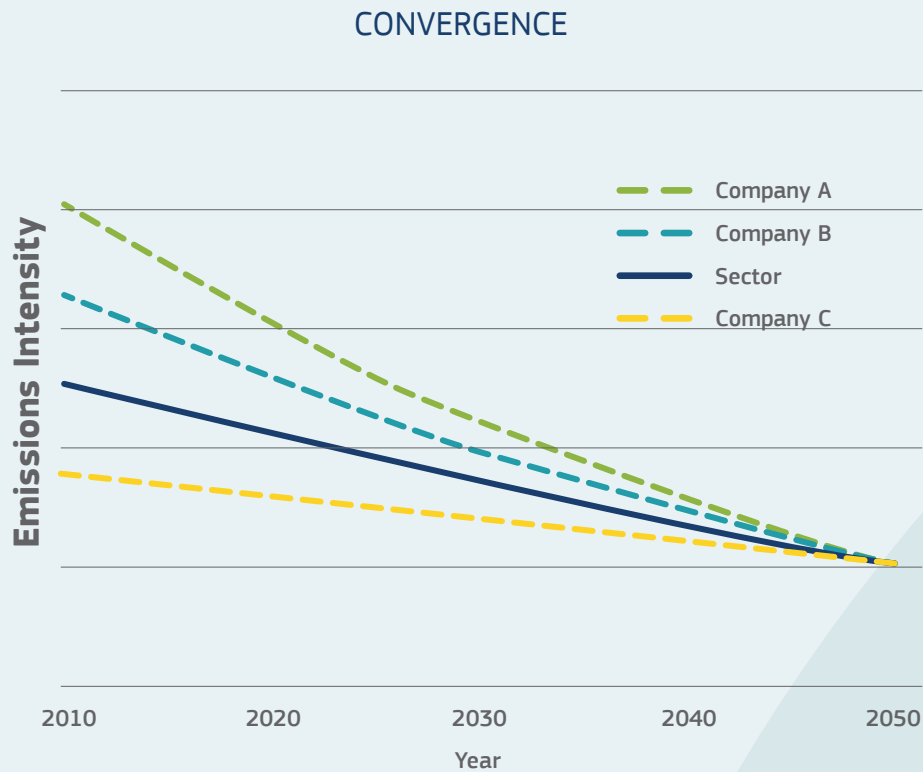


Figure 4: convergence targets within a sector.

6. WHAT IS A SCIENCE-BASED TARGET? Continued.

- The second method is the **contraction approach**, where each company reduces its absolute emissions.

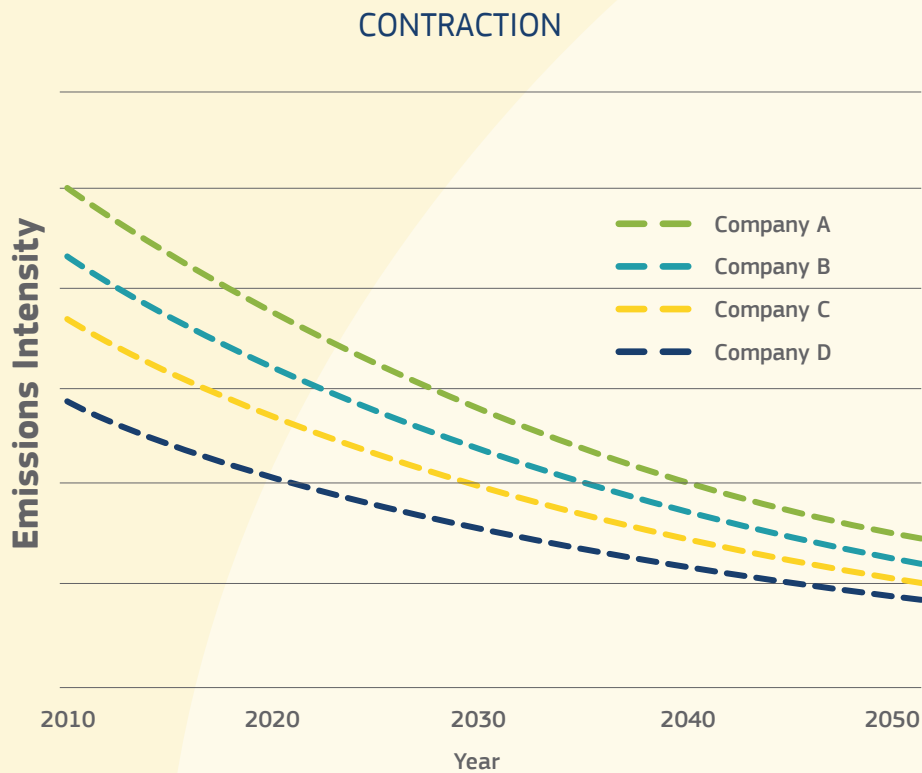


Figure 5: contraction targets.

The SBTi has and is developing guidance for sectors that will help set targets consistent with a) carbon budgets for sectors, b) expected emission reduction through carbon-saving technology implementation across the sector.

The status of the guidance development is shown on <https://sciencebasedtargets.org/sectors> (see also Figure 9).

Note that the guidance documents vary across sectors. Setting targets is in many cases in fact a matter of calculating a target using emission reduction factors that are expected to materialise over the years towards 2050.

6. WHAT IS A SCIENCE-BASED TARGET? Continued.

All in all, the SBTi methodology consists of the following building blocks (see Figure 6):

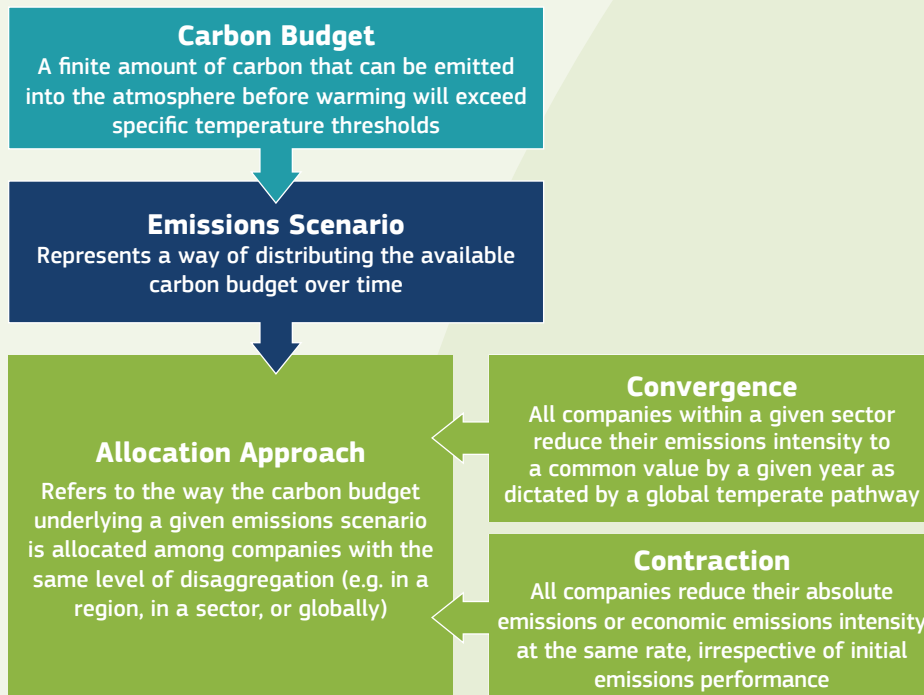


Figure 6: key components of SBTi methodology.

Companies that associate their decarbonisation pathway with the SBTi have to follow 5 basic process steps:

- 1.** Commit: submit a letter disclosing your intent to set a science-based target
- 2.** Develop: work on an emissions reduction target in line with the SBTi's criteria
- 3.** Submit: present your target to the SBTi for official validation
- 4.** Communicate: announce your target and inform your stakeholders
- 5.** Disclose: report company-wide emissions and track target progress annually

As per its May 2022 Annual report 2021 in total 1171 companies have committed to set a SBTi target and another 1082 now have an approved target. With an increasing number of companies entering the process (Figure 7), the service sector is currently the largest industry group followed by the manufacturing (Figure 8). SBTi companies now cover over a third (35%) of global market capitalization – up from 20% in 2020 and equal to USD38 trillion” – SBTi Annual Report 2021, May 2022.

6. WHAT IS A SCIENCE-BASED TARGET? Continued.

A RECORD YEAR FOR NEW APPROVED TARGETS AND COMMITMENTS

Annual cumulative number of companies with approved targets and commitments 2015-2021.⁶

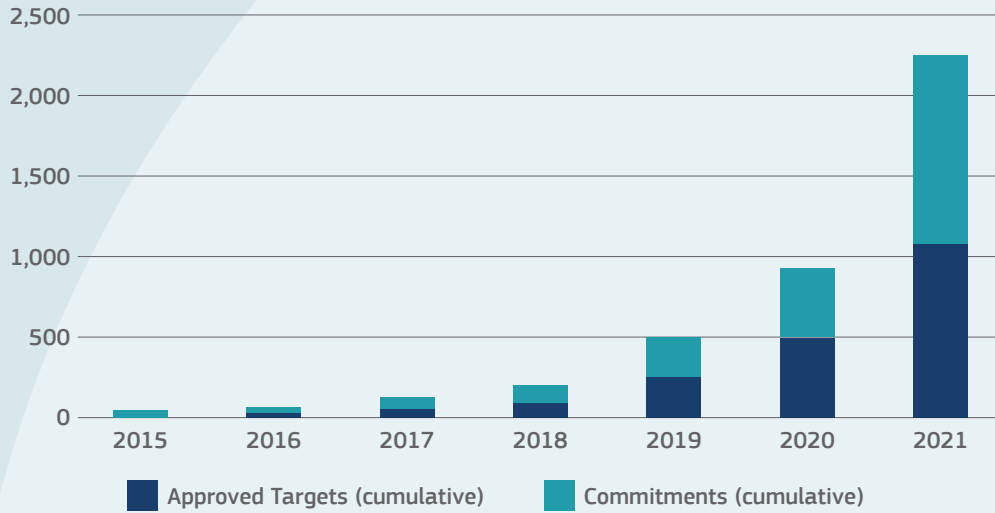


Figure 7: Overview of SBTi 's uptake since 2015 from the SBTi annual report 2021 (May 2022).

SCIENCE-BASED TARGETS BY INDUSTRY

Total number of companies by industry with approved targets and commitments as of December 31 2021.

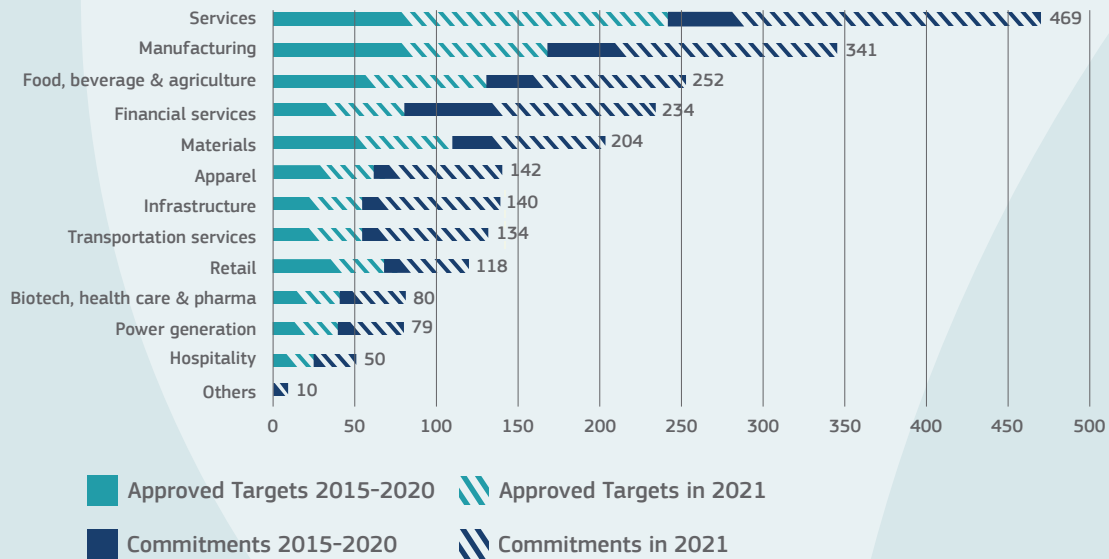


Figure 8: Sector participation into the SBTi programme from the SBTi annual report 2021 (May 2022).

6. WHAT IS A SCIENCE-BASED TARGET? Continued.

The principles of the SBTi are that the different sectors all have their own optimum decarbonisation pathways and challenges to achieve that optimum. As such SBTi is developing or has developed specific guidance for the various industries on how they can set targets under the SBTi (see Figure 9).

Sector	Status	
Aluminium	→ Scoping Phase	View More
Apparel and footwear	○ Finalised	View More
Aviation	⤵ In Development	View More
Buildings	⤵ In Development	View More
Chemicals	⤵ In Development	View More
Cement	○ Finalised	View More
Financial Institutions	○ Finalised	View More
Forest, Land and Agriculture (FLAG)	○ Finalised	View More
Information and Communication Technology (ICT)	○ Finalised	View More
Maritime	○ Finalised	View More
Oil and Gas	⤵ In Development	View More
Power	○ Finalised	View More
Steel	⤵ In Development	View More
Transport	⤵ In Development	View More

Figure 9: Overview of SBTi sector specific methodology development (March 2023).

6. WHAT IS A SCIENCE-BASED TARGET? Continued.

SBTi's aim from the start has been to operate with the highest level of integrity and transparency. The organisation and its methodologies are nonetheless still subject to change. Change that is driven by new data but also based on stakeholders' perceptions around Zero carbon and Carbon Neutrality. In 2021, it was decided that it would put a temporary stop on Oil and Gas companies that wish to have their targets approved, and all companies that already had an approved target have been removed from the SBTi dashboard. The reason being that SBTi is in the process of updating its methodology in order to address some elements that they believed were inconsistent with the SBTi concept. It is anticipated that in 2022 the new methodology will be released after which Oil and Gas companies can in principle reapply for the approval of SBTi targets.

SBTi has also focused specifically on the SME communities (See SBTi SME pathway and steps) acknowledging that the requirements of the SBTi 5-step process are more suitable to larger organisations. The introduced streamlined route for SMEs in 2021, has led to an increase of SMEs having registered with the SBTi, from 20 in 2020 to 209 in 2021 (SBTi annual report 2021 (May 2022)². SMEs that operate in the Oil and Gas industry or derive > 50% of the revenue from sales, transmission, or distribution of fossil fuels are excluded from the SME streamlined route. Although the increase in uptake is encouraging, it should be noted that in the EU alone, there are 22,5 million SMEs, which shows that there is still a long way to go.

Where larger organisations will have 24 months to set up their target for their scope 1, 2 and 3 emissions using a specific SBTi methodology valid for their industry, SMEs are given an option to select 1 of the 2 approved predefined target options which focus on the decarbonisation of scope 1 and 2 only, although they do also have to commit them to measure and reduce emission sources from their scope 3.

²It should be noted that under the SBTi definition an SMEs is defined as a non-subsidiary, independent company with fewer than 500 employees. This does not include financial institutions or oil and gas companies (SBTi Annual report 2021, May 2022).

7. SBTI SME PATHWAY AND STEPS

SBTi has developed a specific simplified route³ which removes the obligation by an SME to collect and assess much of its Scope 1, 2 and 3 emissions but instead focus on 1 of the 2 target options being:

1. Option 1: Near-term 1.5 C option

- a. 50% from a 2018 base year
- b. 46% from a 2019 base year
- c. 42% from a 2020 base year
- d. 38% from a 2021 base year

2. Options 2: Near-term well-below 2 C option

- a. 30% from a 2018 base year
- b. 28% from a 2019 base year
- c. 25% from a 2020 base year
- d. 23% from a 2021 base year

In addition to selecting the option, the following information is required:

1. Company details & size

2. Sector in which company operates

3. Emission profile

- a. Confirm that data is based on GHG protocol accounting standard in relation to scope 2 guidance
- b. Description of main emission in your Scope 1 & 2 including confirmation that you do not exclude any scope 1 or 2 emission more than 5% of GHG inventory
- c. Scope 1 emission in selected base year
- d. Scope 2 emissions in selected base year including method of determination (market of location based)
- e. Confirmation not to use offset toward your target and making public annually the emission and progress against targets

4. Supportive documents such as Corporate GHG inventory, public GHG emission disclosures etc.

³<https://form.jotform.co/targets/sme-target-validation>

7. SBTI SME PATHWAY AND STEPS Continued.

Once the SME operator has decided on these options and provides the necessary information on its operations, the tool then provides the SME with a target that is approved by SBTi once they have confirmed that the provided information is correct and the associate application fees have been paid.

In addition to this near-term target setting SMEs are also able to select a net-zero target. Where the SME is aiming to do this within a 5 to 10 year time frame, it is able to submit its application without first having obtained an approved near-term target.

Although the target setting is simplified, fundamental to the target setting is also that entities follow the GHG Protocol accounting rule. This requirement might in some cases be harder than the SBTi process, particularly if the companies' processes are relatively complex or require high investment costs to measure and collect the emissions data of the company. On the other hand, for many SMEs all that is required are electricity invoices and a grid emission factor, particularly as scope 3 emissions do not have to be part of the target setting. A full implementation of the GHG protocol would thus not be required for this group of companies.

8. MARKET IMPACT & OPPORTUNITIES

SBTi and other GHG reporting programmes (Table 1) focus on the ability to measure companies' performance, whilst at the same time making it more transparent to compare different companies in a transparent manner. Companies look at Scope 1, 2 and 3 emissions as part of their target setting. This creates a dynamic within the market whereby increasingly companies do not only report on their supply chain partners, but also directly or indirectly create incentives and demands that have an impact on other companies' SBTi target setting.

This is particularly true for SMEs that supply goods/services to larger corporates. Since these larger corporates are required to set targets for their Scope 3, they indirectly will also set the targets for their suppliers (Scope 1 & 2). This scope 3 target setting could result in SMEs no longer being able to supply their goods/services to the corporates because they have not set an SBTi target or cannot provide information on their scope 1 & 2 emissions. On the other hand, highly specialised and critical SMEs may be asked how a corporation is able to assist with determining the quantifying impacts of lowering the scope 1 emissions by introduction of new technologies or efficiency measures.

In itself, this would be a good concept as it would create market forces that can be considered to be similar to other supply and demand dynamics. However, in this particular area, the absence of actual data availability and the complexity of the programmes makes it harder for SMEs to understand and anticipate these market forces. On the other hand, many of the sectors in which SMEs operate will find that their options are limited to what they can do themselves (i.e. own renewable energy generation, type of emission measurements, ability to change to alternative process/technology etc). To a certain extent, this makes it more important to focus on those elements that can be easily implemented and/or measured through activity-based emission accounting instead of absolute emission accounting.

Looking at some of the existing incentive programmes, for instance, energy efficiency programmes in operation in Europe, one can see that examples are already emerging whereby a set of defined steps and actions have had a direct impact on the emission profile of an SME, however, they are often not yet linked to a possible future decarbonisation target.

Being able to make such links clearer and more accessible to the SMEs will also allow them to be more prepared to discuss with the larger corporations how they can play an active role in meeting the corporation's SBTi targets over time. Not only might this allow better communication, but it also can lead to faster adoption and implementation of decarbonisation actions.

9. SCIENCE-BASED TARGETS AND THE CCCE

Science-based targets give companies and their stakeholders reassurance that their contribution to reducing the impact of climate change is the best they can do, given the sector they operate in and given the technologies available to them to reduce emissions. Following the guidance developed under the umbrella of the SBTi, companies can set (or rather: calculate) targets that are grounded in the latest climate science and the experience built up by peer companies to reduce emissions. Furthermore, third-party reviews of targets submitted to the SBTi help to further instil confidence that companies who join the SBTi are on the right track to meet the obligations of the Paris agreement.

Despite this, for SMEs, the situation is different, in the sense that there is no specific calculation of a Paris-compatible target required by SBTi. Within the SBTi framework, individual SMEs would not exactly have a bespoke science-based target that is based on the sectoral peculiarities and carbon budgets, but a blanket target that allows for a fast-track process.

One could argue that SMEs too, indeed all companies signing up to SBTi, should be developing their bespoke targets, but given the nature of SMEs (i.e. lack of time, lack of expertise, lack of funds to allocate to target setting), a pre-defined, common target for SMEs is a pragmatic manner for facilitating the climate action of what are generally the smaller emitters.

Having said that, one needs to recognise that for many SMEs, in particular those that are (very) small, even reaching the SBTi generic SME targets may seem to require disproportional effort on their behalf and thus lead to non-action, and this is only amplified when combined with the obligation to report scope 3 emissions. Full SBTi recognition for SME target setting comes at the cost of USD 1000, which may pose a significant hurdle for smaller companies. Noting that the SBTi's definition of an SME is a non-subsidiary, independent company with fewer than 500 employees, SBTi's SME targets may be more amenable to the top-end of the SME size segment.

9. SCIENCE-BASED TARGETS AND THE CCCE Continued.

Such an approach would allow for four modalities of adoption vis-à-vis the science-based targets as defined by SBTi.

- 1.** CCCE companies working towards SBTi targets – this would be relevant for those companies for which the SBTi targets are too difficult to reach a priori but could be aspirational in the longer-term. During the target-setting phase of the CCCE, companies are made aware of the SBTs for SMEs and can opt to define a less ambitious target yet indicate that they aspire to SBTi compliant-targets if and when there is a positive business case. Their efforts would be on implementing low-hanging fruit intervention and their focus would be on implementing activity-based emission accounting instead of accounting the absolute emissions.
- 2.** CCCE companies aligned with SBTi targets – this is a modality for companies that want to go for SBTi targets yet are not per se interested in full SBTi recognition (although they are interested in CCCE recognition). The CCCE secretariat would verify that the targets set by the CCCE company are aligned with the SBTi SME targets.
- 3.** CCCE companies recognised by SBTi – this would be a modality for those companies that seek direct recognition from the SBTi itself and want to go through the associated SBTi process. Any prior SBTi recognition would automatically entitle companies' recognition by CCCE.
- 4.** CCCE companies on a net-zero journey. This would be a special case – companies that have received recognition by a third party for their net-zero targets would be entitled to CCCE recognition.

As part of the CCCE pilot, understanding can be developed which of the above modalities are attractive to the CCCE target audience.

We have identified a number of issues that will need addressing to further incorporate the above modalities into the CCCE:

- The scope 3 emissions reporting requirement that the SBTi imposes on SMEs will need to be tested for adoption rates by SMEs in Europe. SMEs are likely to seek simple reporting formats and templates and do want to avoid additional paperwork.
- The SBTi requires payment of a fee for the verification of targets. The issues here are to what extent does the CCCE do target verification by itself, and to what extent can it cover the costs of doing so. In general, (third-party) verification could be perceived by SMEs as too costly and onerous.
- Science-based targets are non-trivial – CCCE will need appropriate communication tools to convey the concepts and benefits to SMEs in particular.

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11. ANNEX: EXAMPLE TARGET SETTING PROGRAMMES

Table 1: Examples Target setting programmes.

Name Programme	Region	Comment
SBTi (https://sciencebasedtargets.org/)	World.	
Climate Neutral Group (https://www.climateneutralgroup.com/en/)	Focus area for labelling within the Netherlands ⁴	Based on the SBTi principles although not fully in line with all the requirements of the SBTi (i.e. use of offsets)
Clonet Oy (http://www.clonet.fi/en/)	Focus area for labelling within Finland	Focused on tracking lowering annual emission, programme includes a rating of the target setting by the company and its performance
Carbon Disclosure programme (CDP)	World	Not in itself a target setting programme, its focus on disclosing information around Climate, Water, Forest and other environmental impacts allows performance tracking over time and the development of reduction measures.

⁴Labelling also includes scope 3 emissions from within and outside the Netherlands.

[https://covenant-of-companies.ec.europa.eu/
#CovenantOfCompanies](https://covenant-of-companies.ec.europa.eu/#CovenantOfCompanies)

Document Title	A Guide To Science-Based Targets
Project number	ENER/2021/OP/0013
Authored by	Edwin Aalders (DNV), Eelco Kruizinga (DNV)
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Date	14/04/2023

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