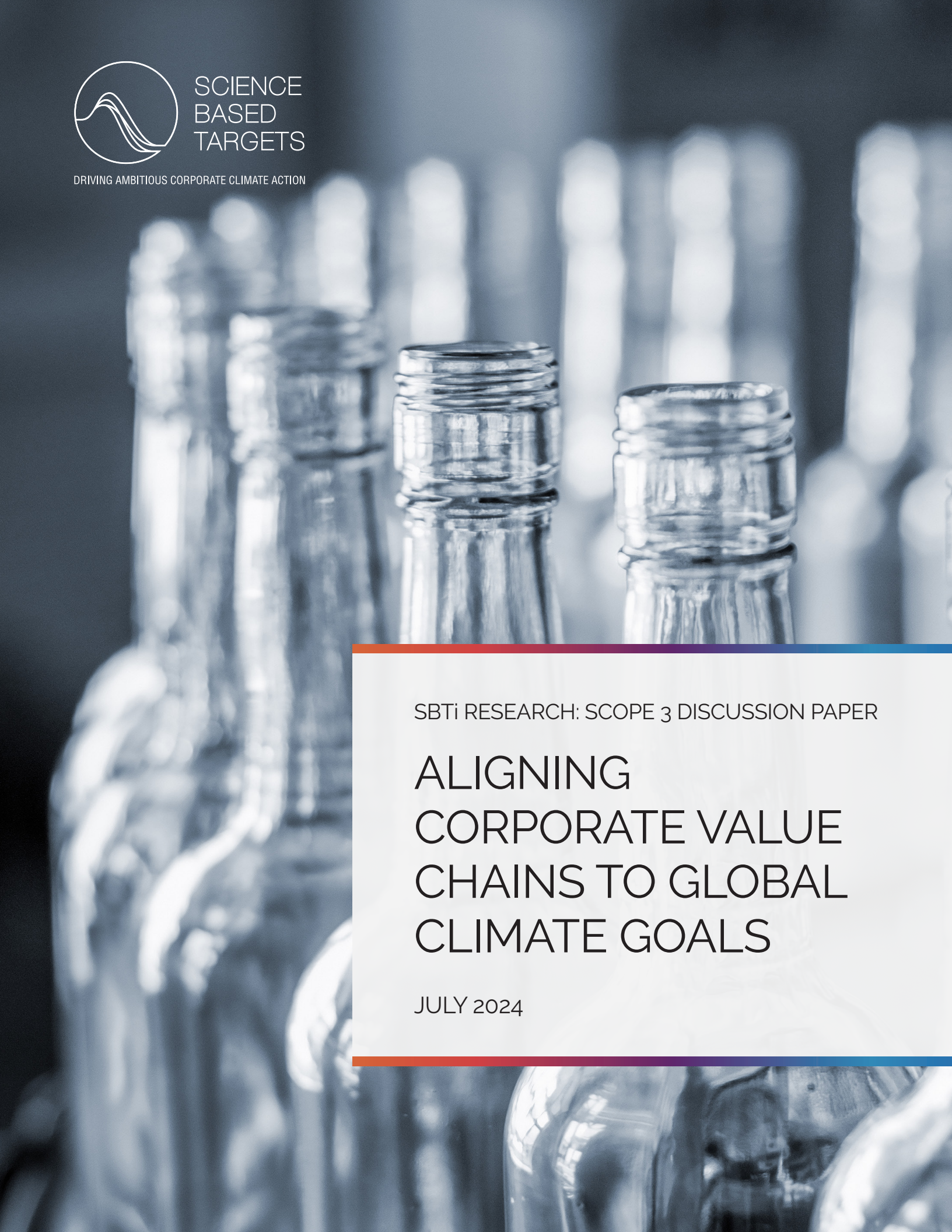

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

SBTi RESEARCH: SCOPE 3 DISCUSSION PAPER

ALIGNING CORPORATE VALUE CHAINS TO GLOBAL CLIMATE GOALS

JULY 2024

ACKNOWLEDGMENTS

ABOUT SBTi

The Science Based Targets initiative (SBTi) is a corporate climate action organization that enables companies and financial institutions worldwide to play their part in combating the climate crisis.

We develop standards, tools and guidance which allow companies to set greenhouse gas (GHG) emissions reductions targets in line with what is needed to keep global heating below catastrophic levels and reach net-zero by 2050 at latest.

The SBTi is incorporated as a charity, with a subsidiary which will host our target validation services. Our partners are CDP, the United Nations Global Compact, the We Mean Business Coalition, the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF).

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Science Based Targets initiative (SBTi). (2024). *Aligning corporate value chains to global climate goals. SBTi Research: Scope 3 Discussion Paper.*

ABOUT THIS DISCUSSION PAPER

The SBTi introduced its first guidelines for science-based target (SBT) setting, including initial requirements for scope 3 target setting, almost a decade ago. At that time, measuring and setting targets for scope 3 emissions was a novel practice, limited to only the most forward-thinking companies engaged in climate mitigation.

With the exponential growth in voluntary climate action since then, the practice of scope 3 target setting and value chain decarbonization has evolved significantly, along with the ecosystem of actors, knowledge and tools supporting this important component in combating climate change. This advancement has not only expanded the number of companies setting scope 3 targets, but has also pushed the boundaries of knowledge and increased understanding of the challenges and opportunities associated with decarbonizing corporate value chains as companies shift from setting to implementing these targets.

This discussion paper offers an overview of the status and current practices of scope 3 target setting among companies with SBTi-validated targets. It discusses the challenges and opportunities associated with scope 3 target setting and explores potential solutions to enhance the effectiveness and impact of value chain decarbonization to support the SBTi in delivering its mission "to drive science-based climate action in the corporate sector consistent with limiting warming to 1.5°C." This paper acknowledges the existing limitations in greenhouse gas (GHG) emissions accounting and scope 3 emissions reduction targets, and introduces the concepts the SBTi is exploring, which may form the basis for a more effective approach to managing GHG emissions in the value chain.

This paper has been developed incorporating stakeholder feedback including findings from a user survey[1] published by the SBTi in 2023, input from a focus group held earlier this year, as well as technical, academic and scientific literature and emerging best practice on this topic.

While this paper is informed by existing as well as emerging best practices, we acknowledge that some of the concepts discussed require further research, testing, learning, and refinement before they reach the necessary level of maturity for integration into SBTi standards. This paper aims to provide preliminary insights into the direction the SBTi is exploring and, more importantly, to stimulate engagement among corporates, academics, civil society, standard setters, practitioners, and others to advance the dialogue and collective development of a robust ecosystem that enables science-based decarbonisation in corporate value chains.

The SBTi welcomes feedback on the concepts presented in this paper. This will be used to inform the development of the Corporate Net-Zero Standard V2.0 public consultation draft. Please consult the SBTi website for details on how to provide feedback.

This paper is informative in nature and does not include any preliminary or definitive requirements, guidelines or other normative elements that companies must adopt to be validated by the SBTi. It serves as a research input into the process for revising the SBTi Corporate Net-Zero Standard, announced in May 2024. This revision will adhere to the Standard Operating Procedure (SOP) for the Development of SBTi Standards, which includes stages of research, drafting, public consultation, pilot testing, redrafting, approval by the independent Technical Council and adoption by the SBTi Board of Trustees.

1 ~230 organizations were consulted, covering major industries and geographies. However, due to the inherent sampling bias of the SBTi's outreach, 85% of companies surveyed either had a validated science-based target or were committed to setting a target with the SBTi.

CONTENTS

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

THE IMPORTANCE OF SCOPE 3 TARGET SETTING

In 2015, the Paris Agreement was signed by 196 parties, codifying the world's collective aim to limit global warming to well-below 2°C and agreeing to pursue more ambitious efforts to keep warming to 1.5°C. In 2018, the IPCC released a special report outlining the drastic differences between 1.5°C and 2°C of warming.[2] The report confirmed that our primary aim must be to limit warming to 1.5°C with little to no overshoot.

We still have time to limit warming to 1.5°C. But the window of opportunity is closing quickly. Dangerously high ocean temperatures, record-breaking wildfires, deadly rains and flooding are harbingers of our collective future should we fail to adequately mobilize a global response to the climate crisis. The stability of our planet hangs in the balance, and the best chance we have to mitigate the impacts of the climate crisis is rapid decarbonization across all sectors, reaching net-zero no later than 2050.

Achieving net-zero emissions globally means a profound transformation into an economic system that delivers the needs of our society without accumulating greenhouse gas emissions (GHGs) into the atmosphere. For corporate value chains, this means that every phase – from raw material extraction to production, distribution, product use and disposal – must operate without increasing atmospheric GHGs.

Scope 3 emissions include indirect emissions[3] within a company's value chain.[4] The SBTi believes that scope 3 target setting can serve as a powerful mechanism to integrate our global climate goals into the core of the economy – specifically, into what companies procure and how they generate revenue. Setting science-based emissions reduction targets across corporate value chains not only supports combating the climate crisis, but also ensures that business models evolve to continue delivering value in a carbon-constrained world. Furthermore, scope 3 target setting can catalyze a seismic shift towards net-zero by extending the responsibility for climate impacts beyond direct operations and fostering comprehensive decarbonization throughout the entire value chain.

2 IPCC. (2018). Special Report on Global Warming of 1.5ºC.

3 Excluding emissions from purchased or acquired electricity, steam, heat and cooling (scope 2 emissions).

4 The term 'value chain emissions' refers to the emissions from the upstream and downstream activities associated with the operations of a company (adapted from Greenhouse Gas Protocol, 2011: Corporate Value Chain [Scope 3] Accounting and Reporting Standard).

PURPOSE OF THIS PAPER

The SBTi is undertaking its first major revision of the Corporate Net-Zero Standard (CNZS). Version 1.0 of this standard was released in October 2021. Given the scale and importance of scope 3 target setting in leveraging transformational change, as well as the increasing urgency for climate action, the SBTi is undertaking a process to review its scope 3 target-setting framework. This review aims to more effectively activate value chain decarbonization while being cognizant of the barriers that corporates face.[5]

The purpose of this paper is to set out the challenges and opportunities with scope 3 target setting and share the SBTi's initial thinking on the potential changes being explored. This paper, which has been developed as part of the research phase of the CNZS V2.0 revision process, is informative and does not contain draft decisions, requirements or guidelines.

Our intention is to provide preliminary insights into the options that the SBTi is exploring and to stimulate engagement among corporates, academics, civil society, standard setters, practitioners and others to advance the dialogue and collective development of a robust ecosystem that enables science-based decarbonization in corporate value chains.

OVERVIEW OF SCOPE 3 TARGET SETTING IN SBTi STANDARDS

In the past decade, scope 3 target setting has shifted from a leading to a common practice. By the end of 2023, 4,205 companies and financial institutions had SBTi-validated targets. Counted together with companies with commitments to set targets, this represents 39% of the global economy by market capitalization.[6] Approximately 97% companies included scope 3 emissions in their targets.[7] This widespread uptake indicates a strong recognition of the critical role that indirect emissions play in a company's overall climate impact and the need to manage them effectively.

By the end of 2023,

4,205

companies and financial institutions had SBTi-validated targets.

~97%

of companies included scope 3 emissions in their targets.

5 SBTi Corporate Net-Zero Standard V1.2 continues to be the most recent and valid resource for companies to set net-zero-aligned science-based targets.

6 SBTi. (2023). Monitoring Report.

7 Excluding small- and medium-sized enterprises [SMEs] and financial institutions. Source: Internal analysis based on the SBTi Target dashboard as of December 2023; scope 3 emissions must only be included in a company's near-term SBTs if its scope 3 emissions make up 40% or more of total emissions (i.e. scope 1, 2 and 3 emissions).

The SBTi's CNZS and Corporate Near-Term Criteria provide a framework for setting scope 3 targets. Companies must first develop a scope 3 GHG inventory to understand their value chain climate impact and identify emission hotspots. The current approach allows companies to prioritize emission reductions through target boundaries that address at least 67% of their scope 3 emissions for near-term targets and a minimum of 90% for long-term targets.

Companies can choose from various methods to address scope 3 emissions, including:

- Reducing absolute emissions (64% of validated targets).
- Engaging suppliers or customers to set science-based targets (14%).
- Decreasing physical intensity (11%) or economic intensity (5%).
- Using a sectoral decarbonization approach (6%).

CHALLENGES IN SCOPE 3 TARGET SETTING AND IMPLEMENTATION

Despite significant progress, several challenges persist in effectively setting and implementing scope 3 targets:[8]

- **Aggregated emissions metric:** Using aggregated scope 3 emissions as the primary metric has limitations due to variability in GHG accounting methods, reliance on secondary data and the lack of nuance in addressing the very distinct nature of emissions sources in corporate GHG inventories, including the different time periods in which they occur, the measurement approaches required and the specific mitigation levers available.[9]

- **Target-setting methods:** Current methods, that often project a linear change in emissions or emissions intensity, face challenges given the dynamic nature of value chain emissions and distinct nature of value chain activities.

- **Target-setting boundaries:** The requirement to cover a minimum percentage of scope 3 emissions (67% near-term, 90% long-term) can lead to misleading target formulation, exclusion of critical emissions and ambiguity about the transition from near- to long-term target boundaries.

- **Levels of influence:** Implementing scope 3 targets can be challenging due to the variable capacity of companies to influence and mitigate different emissions sources within their value chains.

- **Progress measurement:** Measuring progress towards decarbonization is complex due to data limitations, emissions volatility and the challenge of linking mitigation actions directly to GHG inventory changes.

8 50% of respondents to SBTi's 2023 Survey self-reported to be "off track" for delivering their scope 3 targets.

9 For the purpose of this paper, we use the term "emissions sources" to refer to commodities, products, services and activities within the value chain that release greenhouse gas emissions.

OPTIONS UNDER CONSIDERATIONTO ENHANCE SCOPE 3 TARGET SETTING

The global ambition to reach net-zero emissions should guide efforts to transform corporate value chains to align with climate goals, and the SBTi believes scope 3 target setting can be a transformative lever for change. As such, this paper explores ways to improve the effectiveness and credibility of setting these targets. While the SBTi CNZS V1.2 continues to be the appropriate resource for companies to set science-based net-zero targets, the proposals below explore potential opportunities to enhance the current approach to scope 3 target setting. These proposals include:

1 A more comprehensive set of tools to manage value chain emissions:

- This paper explores a wider range of metrics beyond aggregate scope 3 emissions (as measured in tCO_2e) to better assess and communicate corporate climate performance. This includes outcome-based metrics that measure the alignment of an organization's upstream (procurement) and downstream (revenue generation) activities with global climate goals.
- By supplementing GHG emission targets with alignment targets based on metrics that demonstrate actions and outcomes that are aligned with global climate goals, companies and stakeholders can more effectively take action, assess and communicate progress.
- The paper also proposes to complement targets with policies that may be effective both in driving action towards achieving targets and in addressing specific impacts that may not be easily incorporated as part of a target.

2 A more nuanced approach to target-setting boundaries:

- This paper explores alternatives to a blanket target boundary approach, including a more nuanced approach that prioritizes action on the most climate-relevant activities.
- Identification of climate-relevant activities is proposed using three parameters: magnitude of emissions; exposure to activities in high-climate-impact sectors; and risks of locking-in future emissions.

3 Exploring the role of influence:

- Influence over emissions from suppliers or users of sold products is a key challenge for companies delivering on scope 3 targets, according to a 2023 SBTi survey.[10] The extent of a company's influence over an emissions source is a critical factor in determining appropriate interventions. Some emissions sources may also require collective action in order to be effectively addressed.
- While some options have been identified to incorporate influence into a scope 3 target-setting framework, early stakeholder feedback has suggested limitations to these approaches. Feedback has also questioned whether influence should be considered in a target-setting framework at all, given the subjectivity involved.

10 SBTi. (2023). Catalyzing Value Chain Decarbonization: Corporate Survey Results.

- Rather than presenting a clear proposal, this paper presents two options for further discussion, acknowledging that this is an area that requires further exploration:
  - An assessment of influence could be used to **prioritize which emissions sources should be addressed in the near-term**, focusing efforts where companies can most effectively drive change. Under this model, emissions sources that companies have no or limited influence over could be excluded from the target boundary.
  - An assessment of influence could be used to **determine differentiated interventions**. Under this model, companies might be required to address emissions sources which they have reasonable influence over through appropriate interventions (e.g. policies and targets) and to address the impact of emissions sources where companies have no or limited influence through other mechanisms.
- Both options proposed carry some risk, particularly due to the subjective nature of determining influence, and therefore the SBTi recommends further exploration to understand if influence can credibly be integrated into the framework.

EXPLORING THE ROLE OF CERTIFICATION AND ENVIRONMENTAL ATTRIBUTE CERTIFICATES IN ADDRESSING VALUE CHAIN EMISSIONS

As companies move from target setting to target implementation, more clarity is needed on how to substantiate claims of progress. This paper explores how certification systems might potentially support credible value chain mitigation claims and the conditions to substantiate these claims. Environmental attribute certificates (EACs) aim to certify and communicate specific environmental or sustainability attributes of a given activity or commodity, and are used by companies to substantiate environmental claims, regulatory compliance and value chain transparency by providing evidence that environmental standards or sustainability criteria have been met. We describe five potential scenarios where commodity certificates and carbon credits might potentially substantiate claims that may be consistent with achieving net-zero emissions at the global level.

- **Commodity certificates from value chain activities** could play a role in supporting value chain mitigation claims by allowing buyers to demonstrate that their sourced commodities meet emissions standards aligned with global climate goals or are produced in a way that is consistent with reaching net-zero emissions. To enable this, a robust standard and certification system is critical, along with a robust chain of custody to ensure that the certificates demonstrably represent the environmental performance from the sourced activity or commodity.

- **Commodity certificates from sources with lower or no value chain traceability** might be an appropriate interim solution in scenarios where, on the pathway to net-zero, sourcing activities or commodities aligned with global climate goals remains unfeasible, or whenever higher traceability cannot be established due to market, regulatory or physical barriers. In such cases, using chain of custody models with lower traceability (e.g. book and claim)[11] could be considered with clear guardrails (e.g. time, volume, etc.). This could be limited to high-quality, high-impact certificates from sources that can demonstrably lead to net-zero aligned market transformation and with claims appropriate to the level of value chain traceability.
- SBTi standards require that carbon credits are not counted as emission reductions toward the progress of companies' science-based targets. However, this paper explores the scenario in which **carbon credits from mitigation activities *within the value chain* are used to substantiate value chain emission reduction claims** whenever they represent emissions abatement[12] from activities traceable to the company's value chain. Such credits would be accounted for in a way that can be fungible with corporate GHG emissions inventory.
- The **use of carbon credits to support neutralization of residual emissions** is explored as an option to meet the current requirement of the SBTi CNZS for companies to neutralize the climate impact of scientifically-defined residual emissions[13] at their target year by permanently removing and storing carbon from the atmosphere. Carbon credits from GHG removal activities are a potential means to finance the neutralization of these residual emissions.
- The purchase and retirement of high-quality **carbon credits to support beyond value chain mitigation (BVCM)** is one of several instruments that can help businesses contribute to the broader societal shift towards net-zero. The traditional practice of offsetting, which involves purchasing carbon credits as a substitute for abating value chain emissions, is not accepted under SBTi standards due to potential risks. Cognizant of these risks, while also recognising the importance of stimulating corporate finance towards mitigation activities in critical need of funding, a scenario is presented whereby companies are incentivized to abate emissions within the value chain while also taking responsibility for emissions not yet addressed.

These scenarios are presented solely to illustrate potential uses of certificates in addressing value chain emissions and should be understood as neither exhaustive nor prescriptive. The inclusion of any of these scenarios, or others, in SBTi standards is subject to the standard development process described in the Standard Operating Procedure (SOP) for Development of SBTi Standards.

11 Under the book and claim model, physical products – whether certified or not – are not tracked and flow in the same supply chain. Instead, certificates or credits are traded separately according to the amount of certified product fed into the supply chain (i.e. the certificates or credits are "unbundled").

12 Measures that companies take to prevent, reduce, or eliminate sources of GHG emissions *within their value chain.*

13 Important to notice the distinction between scientifically-defined residual emissions and unabated emissions in the transition towards net-zero.

OPERATIONALIZING THE PROPOSALS

Informed by the above proposals to improve the effectiveness of scope 3 target setting, this paper presents a description of a potential process with five steps that companies could take to develop value chain mitigation strategies aligned with net-zero. As set out in Figure 1, the steps are cyclical in nature, meaning that companies would periodically review their value chain net-zero strategies to ensure that, over time, all relevant emissions sources are addressed:

Step 1

Companies measure and publicly disclose their GHG emissions across the value chain

...including a scope 3 inventory according to the minimum boundary in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.[14] This constitutes the basis for establishing the total impact of the company on the climate.

Step 2

Companies identify and prioritize climate-relevant emissions sources

...based on the magnitude of emissions, exposure to activities in high-climate impact sectors and risk of locking-in future emissions. This constitutes the basis for establishing a target boundary.

Step 3

Companies establish targets, policies and other interventions to mitigate climate-relevant emissions sources within the target boundary

...ensuring increasing alignment with global climate goals and decreasing emissions towards net-zero by 2050.

Step 4

Companies implement action plans to achieve their targets, and take responsibility for emission sources not yet included within the target boundary

...and take action to increase leverage over sources of emissions not yet prioritized.

Step 5

Companies measure the effectiveness of interventions and communicate progress

...towards achieving value chain decarbonization.

14 GHG Protocol. Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Figure 1. Potential five-step process to implement the proposed framework for managing value chain emissions towards net-zero transformation.

AREAS FOR FURTHER WORK

Some concepts in this paper will need further research, testing, learning and refinement before they are ready for integration into SBTi standards. We expect this discussion paper to stimulate further development of these concepts within the SBTi and the broader ecosystem, ultimately enabling net-zero aligned transformations in corporate value chains. Key areas for further development include:

- Research methods to determine benchmarks for outcome-based metrics aligned with global climate goals.
- The feasibility of introducing and standardizing the concept of influence in target-setting.
- The use of different tools, including certification and taxonomies to define science-based benchmarks, to inform alignment of procurement and products with global climate goals and enable interoperability between commodity- and entity-level certification over time.
- The use of carbon credits from abatement activities within the value chain to substantiate value chain emission reduction claims.
- The effectiveness of different EACs to drive mitigation and transformation outcomes consistent with reaching global climate goals when used under a book and claim model.
- Rigorous examination of the credibility of potential claims related to value chains that will be enabled by the CNZS V2.0.
- An in-depth risk assessment of areas for improvement in the scope 3 target-setting framework.
- Further research of equity considerations in the design of scope 3 target-setting requirements.

To achieve this, the SBTi will engage a broad range of stakeholders to gain diverse perspectives on the concepts discussed in this paper and conduct further research and pilot testing.

CALL FOR STAKEHOLDER FEEDBACK

The SBTi's goal is to deliver a more actionable, transparent and impactful framework that supports its mission to drive science-based climate action in the corporate sector consistent with 1.5°C and net-zero. The SBTi encourages stakeholders to provide feedback on the proposed approaches and preliminary options to improve the value chain framework. Please consult the SBTi website for details on how to provide feedback.

ASSESSING CURRENT SCOPE 3 TARGET-SETTING PRACTICES

ASSESSING CURRENT SCOPE 3 TARGET-SETTING PRACTICES

OVERVIEW OF SCOPE 3 TARGET SETTING IN SBTi STANDARDS

~97%

of companies' targets cover scope 3 emissions

Over the past decade, scope 3 target setting has evolved from being a leading practice into a common practice. By the end of 2023, 4,205 companies and financial institutions had set SBTi-validated targets and companies with science-based targets or commitments represented 39% of the global economy by market capitalization.[15] Approximately 97% of companies' targets cover scope 3 emissions.[16] This indicates a strong recognition of the critical role that indirect emissions play in a company's overall climate impact and the need to manage them effectively.

Through the Corporate Net-Zero Standard (CNZS) and Corporate Near-Term Criteria the SBTi provides a framework for companies to set scope 3 targets. As a first step, companies are required to develop a scope 3 GHG inventory. This inventory helps them understand the total climate impact of their value chain and identify key emission hotspots to prioritize. The current approach under SBTi standards provides some flexibility in this prioritization process, allowing companies to address a minimum of 67% of their scope 3 emissions for near-term targets, increasing their mitigation efforts towards 90% coverage in the long term (by 2050).

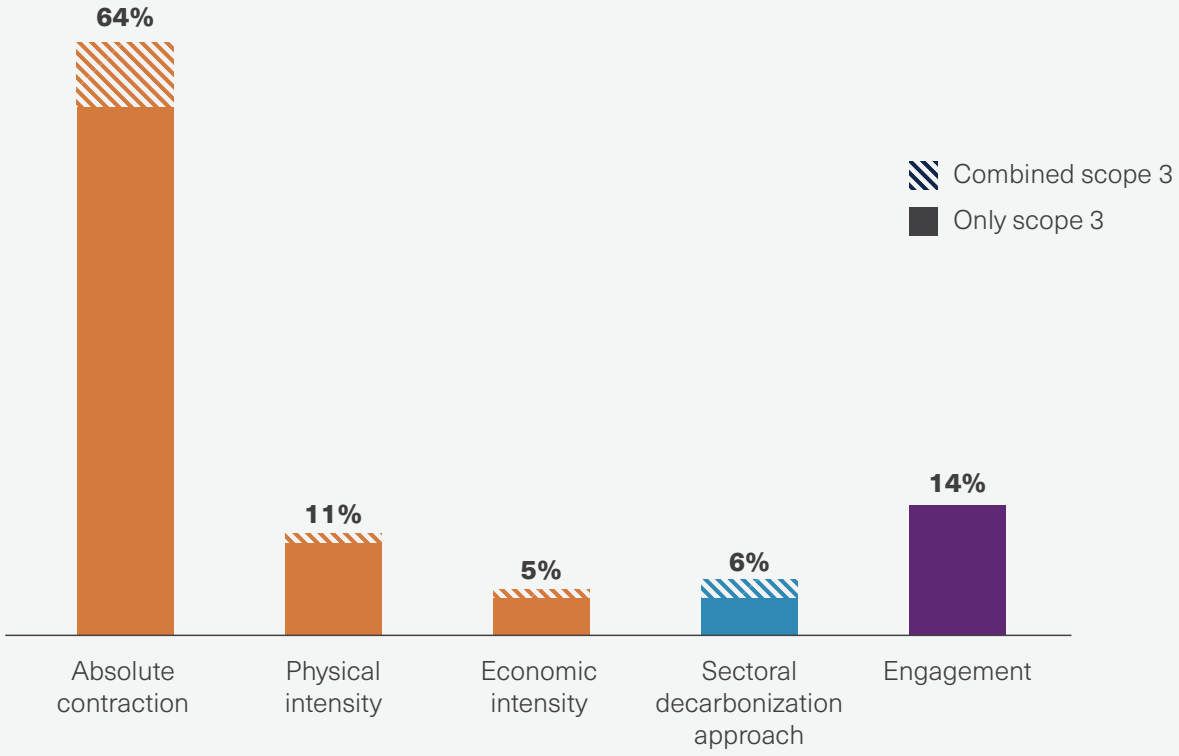
Once the target boundary has been established, companies can select from a variety of methods to address scope 3 emissions within this boundary. Current eligible methods under SBTi standards range from the contraction of scope 3 absolute emissions, to a reduction in scope 3 emissions intensity, and to addressing value chain emissions by driving the adoption of science-based targets among their suppliers or customers. The majority of targets (64%) are based on absolute reduction, with 14% of targets based on commitments to engage suppliers or customers in science-based target setting, 11% based on reducing the physical intensity of scope 3 emissions, 5% based on reducing the economic intensity of scope 3 emissions and 6% based on a sectoral decarbonization approach.[17]

15 SBTi. (2023). Monitoring Report.

16 Excluding small- and medium-sized enterprises [SMEs] and financial institutions. Source: Internal analysis based on the SBTi Target dashboard as of December 2023; Scope 3 emissions must only be included in a company's near-term SBTs if its scope 3 emissions make up 40% or more of total emissions (i.e. scope 1, 2 and 3 emissions).

17 SBTi, 2024, Internal analysis based on the SBTi Target dashboard as of May 2024. n= 2,684 near-term targets covering scope 3 emissions.

Figure 2. Methodologies used in setting scope 3 targets.[18]



CHALLENGES IN SCOPE 3 TARGET SETTING AND IMPLEMENTATION

Despite the encouraging growth in adoption of scope 3 targets, converting these targets into measurable transformation presents challenges. This paper identifies five key challenges with the current approach:

1. The use of aggregated scope 3 emissions as the primary metric for managing value chain impacts.
2. The limitations of current target-setting methods.
3. The approach used to define target boundaries.
4. Limited nuance around levers and levels of influence.
5. The difficulty in assessing and communicating progress over time.

18 Absolute contraction is the most common scope 3 target-setting method used. "Combined scope 3" indicates where companies have set targets over multiple scopes of emissions. Note: the 6% figure for Sectoral Decarbonization Approach (SDA) may be reflective of the availability of sector-specific methods only for specific sectors.

USE OF AGGREGATED SCOPE 3 EMISSIONS AS THE PRIMARY METRIC FOR MANAGING VALUE CHAIN IMPACTS

Most targets covering scope 3 emissions use an aggregated scope 3 metric, either on an absolute or intensity basis, to set and track progress. While the aggregated scope 3 metric can be a useful tool to estimate the order of magnitude of a company's value chain emissions, it faces limitations for target setting and tracking due to:

- **Optionality in GHG accounting and calculation approaches**: The flexibility and optionality in GHG accounting and the absence of more detailed guidance, including limited sector-specific guidance, result in limited comparability of corporate GHG inventories between companies and consistency over time.
- **Limited availability of reliable data**: The vast majority of companies estimate value chain emissions using secondary data (e.g. average emission factors from databases), while only a small percentage of companies estimate these emissions from primary data sources.[19]
- **Usability of an aggregated emissions metric**: Aggregating different scope 3 categories into a single metric obscures the distinct nature of activities and emissions sources. For example, upstream supply chain emissions normally occur in the past, and downstream emissions expected from the further processing, use and disposal of products occur in the future.

LIMITATIONS WITH CURRENT TARGET-SETTING METHODS

Value chain target-setting methods generally use aggregated scope 3 emissions as the primary metric and specify an expected rate of change in this metric using benchmarks derived from Paris-aligned emission trajectories. Given the challenges with the use of aggregate scope 3 emissions as the primary metric, these methods present a number of related issues, including:

- **Difficulty in defining science-based benchmarks for scope 3**: Scope 3 emissions categories represent the combination of the emissions intensity of a given activity and the level of exposure of a company to that activity (e.g. volume of raw material procured). While the emissions intensity of a given activity can be informed by Paris-aligned emission trajectories that correspond to a carbon budget allocation logic, it is not necessarily possible to set Paris-aligned trajectories for a metric that combines both the emissions intensity of a given activity and a company's exposure to that activity.
- **Metric volatility**: Scope 3 emissions can be highly dynamic. Even in a data-perfect world, aggregate scope 3 emissions are in constant change for several reasons including market-share variations, changes in product portfolios, changes in suppliers and changes in materials. This creates further challenges when comparing aggregate scope 3 emissions against Paris-aligned benchmarks.

19 SBTi. (2023). Catalysing Value Chain Decarbonization: Corporate Survey Results.

- **Limited nuance for net-zero aligned activities**: Methods based on comparing aggregate scope 3 emissions against global emissions benchmarks fail to consider the existing level of net-zero alignment of specific activities within value chains, as well as the differentiated pathways towards net-zero that various activities should follow. For instance, they often overlook the need for growth in activities that are already aligned with climate goals.[20]

LIMITATIONS WITH CURRENT APPROACH TO TARGET-SETTING BOUNDARIES

The current SBTi approach to target-setting boundaries requires companies to include a minimum of 67% of their scope 3 emissions within the scope 3 target boundary for near-term targets and a minimum of 90% for long-term targets. This may result in unintended consequences, including:

- **Potentially misleading target formulation**: Excluding emissions from the target boundary may lead to a potentially inaccurate representation of the emission reductions that the company is aiming for. Reductions may appear more substantial than they actually are compared to when looking at the full GHG inventory.
- **Exclusion of high-climate-impact activities**: The flexibility for companies to choose the emissions sources that are covered by the 67% boundary may mean that emissions sources that are critical to address for the net-zero transition are ignored in the near term.
- **Lack of clarity on how to increase the target boundary over time**: Companies are unclear on how to transition from 67% coverage in near-term targets to 90% coverage in the long term. This may lead to incompatibility of near-term targets with a long-term net-zero-aligned trajectory and require companies to course correct to reach their long-term targets.

LIMITED NUANCE AROUND LEVELS OF INFLUENCE AND APPROPRIATE LEVERS TO ADDRESS VALUE CHAIN EMISSIONS SOURCES

The term “influence” in relation to addressing value chain emissions refers to the capacity of an entity or actor to effect or exert change over emissions-related decisions, actions and outcomes within the value chain. While all GHG emissions contribute to climate impact, the ability of companies to influence a source of emissions varies according to several factors. This includes the market power of the company, the type of relationship between the target-setting entity and the value chain partner, the relative position of the target-setting entity in relation to the

20 Robiou du Pont, Y. et al. (2024). Corporate emissions targets and the neglect of Future Innovators, Science, 384(6694).

source of emissions (e.g. upstream vs. downstream emissions) and inherent challenges in abating a particular emission source (e.g. technological barriers). Purchasing companies may also face challenges in terms of their ability to switch to alternative lower carbon inputs where alternatives do not yet exist and where further research and development is required.

An average internal combustion engine (ICE) car, for example, emits roughly 80% of its emissions over its lifetime whilst the engine is in use.[21] The car manufacturer can aim to reduce the car's lifecycle emissions through business decisions, such as product design (e.g. product electrification or use of lightweight materials), or through applying leverage to effect change in the practices of another party (e.g. consumer driving behavior or decarbonization of supplier manufacturing). However, a significant proportion of scope 3 emissions may remain due to the emissions intensity of the grid where sold electric vehicles are charged, over which the car manufacturer may have more limited influence.

The current approach to scope 3 target setting treats all emissions sources equally, without acknowledging the varying levels of influence and potential levers available to address value chain emissions sources.

CHALLENGES IN ASSESSING PROGRESS TOWARDS VALUE CHAIN DECARBONIZATION TARGETS

Given the challenges highlighted above, including limited access to primary data and the volatility of scope 3 emissions, there is significant complexity in measuring value chain decarbonization and progress against targets using GHG emissions data. The challenges of benchmarking scope 3 emissions to Paris-aligned scenarios further impede the ability to make credible, evidence-based claims of progress towards targets and alignment with global climate goals. Additionally, there is insufficient clarity on how to effectively link actions and interventions that companies undertake to mitigate value chain emissions with their GHG inventories and emissions reduction targets. For example, a company might implement policies and actions to incentivize decarbonization amongst their suppliers to meet their climate targets. While this might be consistent with aligning a company's value chain with the goals of the Paris Agreement, this does not necessarily result in an immediate change in a corporate GHG emissions inventory.

A more extended discussion on challenges around scope 3 target setting can be found in Annex I.

21 Greenpeace. (2023). Automobile Environmental Guide: 2023 Edition.

OPTIONS UNDER CONSIDERATION TO ENHANCE SCOPE 3 TARGET SETTING

OPTIONS UNDER CONSIDERATION TO ENHANCE SCOPE 3 TARGET SETTING

The global ambition to reach a state of net-zero emissions must serve as a guiding star to inform value chain climate mitigation strategies. Emissions are released from a diversity of activities in corporate value chains today and these activities must be rapidly transformed to align with global climate goals.

Scope 3 target setting can be a key lever to catalyze transformation of corporate value chains consistent with limiting warming to 1.5°C. At the time of publication, SBTi CNZS V1.2 continues to be the most recent and valid resource for companies to set net-zero-aligned science-based targets. The areas under consideration discussed in this paper aim to improve the effectiveness of scope 3 target setting with the goal of reconciling the realities of value chains today, including real and perceived barriers that hinder value chain decarbonization, with the ambition needed to deliver the global climate goals and to prevent the worst impacts of global warming.

A MORE COMPREHENSIVE SET OF TOOLS TO ADDRESS VALUE CHAIN EMISSIONS

To develop a more comprehensive approach to addressing value chain emissions, the SBTi is exploring how to expand focus beyond traditional metrics like aggregate scope 3 emissions (as measured in tCO_2e) to include new metrics that assess the alignment of an organization's procurement and revenue generation activities with global climate goals. By integrating these metrics with traditional GHG targets and introducing effective policies, companies and stakeholders can take more informed action, evaluate progress and better communicate climate performance.

The SBTi believes that scope 3 target-setting can be a

key lever to catalyze transformation

of corporate value chains consistent with limiting warming to 1.5°C

Metrics to assess value chain alignment with global climate goals

The term "metric" refers to a quantifiable indicator used to assess, manage, compare and communicate the past, current or intended climate-related performance of an organization. Metrics can be expressed in terms of impact (e.g. GHG emissions released into the atmosphere) or outcome (e.g. percentage of electricity sourced from zero-carbon sources).

Aggregate scope 3 emissions is the main metric used by companies to assess and communicate their impact on the climate, set targets and report progress against those targets. However, given the challenges outlined above, this paper explores a more comprehensive set of metrics that may provide a more effective approach to set targets to address value chain emissions and to measure alignment with global climate goals.

To support the identification of relevant metrics to supplement GHG emissions metrics, a high-level theory of change has been developed. This theory of change identifies key long-term outcomes consistent with reaching net-zero value chain emissions to inform intermediate outcomes and interventions that support achievement of the desired impact (see Annex II: Value Chain Decarbonization Theory of Change).

Considering that the vast majority of value chain emissions can be linked to companies' procurement activities (upstream emissions) and emissions from the processing, use, and disposal of products sold by companies (downstream emissions), the outcome-based metrics being explored to inform the level of an activity's alignment with global climate goals are defined around these two broad categories:

Upstream emissions:

Operational expenditure directed towards entities, activities and commodities that have achieved a level of emissions performance compatible with reaching net-zero emissions at the global level.

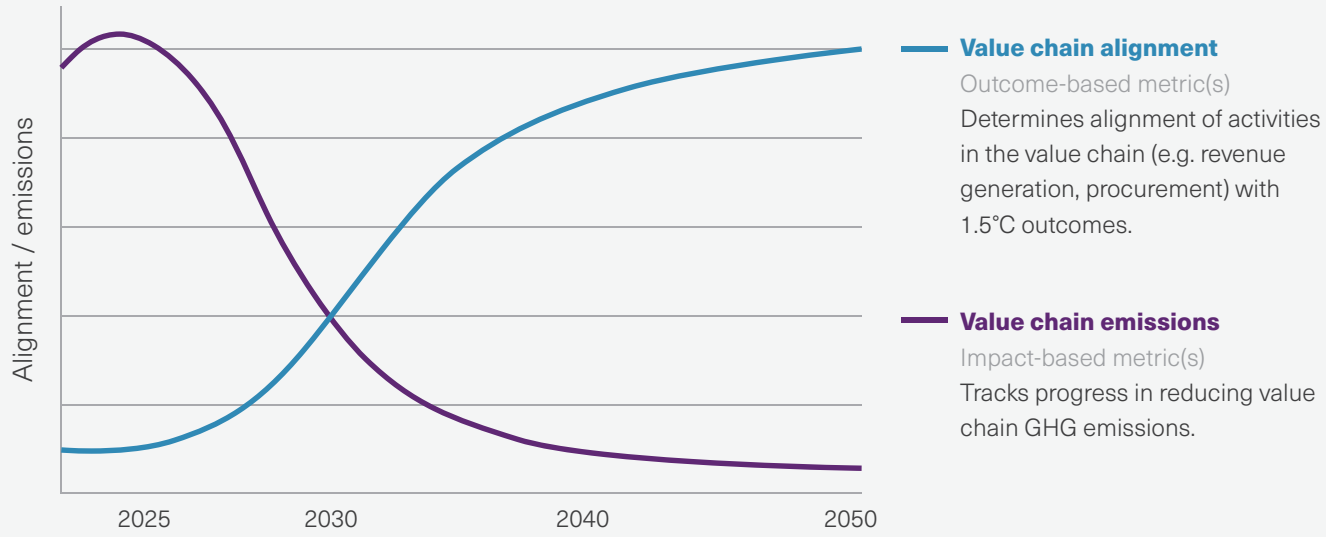
Downstream emissions:

Revenue derived from entities, activities, products and services that have achieved a level of emissions performance compatible with reaching net-zero emissions at the global level.

As the global economy transitions towards a state of net-zero emissions, the proportion of activities that are aligned with reaching net-zero is expected to increase. When the economy has reached net-zero emissions, the products and services that companies buy or sell are expected to reach a level of emissions performance consistent with reaching net-zero emissions globally.

Outcome-based metrics can be used to assess and communicate alignment with global climate goals. However, GHG emissions will continue to play an important role in demonstrating and substantiating emission-related claims, especially as GHG emissions infrastructure matures. Supplementing impact-based metrics with outcome-based metrics may, therefore, enable a more holistic understanding of value chain alignment with global climate goals and related targets, as illustrated in Figure 3.

Figure 3. Illustration of how value chain alignment (outcome-based metrics) and value chain emissions (impact-based metrics) relate over time to enable a more holistic understanding of climate performance.



More information about preliminary thinking on outcome-based alignment metrics can be found in Annex III.

Introduce additional interventions to assess alignment with global climate goals

Additional interventions to drive and assess alignment with global climate goals may also present the opportunity to address value chain emissions beyond emissions reduction targets, which are the main tool used in current SBTi standards. Examples of these interventions include the use of company policies and targets to assess alignment with global climate goals, referred to from here onwards as "alignment targets". These interventions could supplement or provide an alternative to value chain emission reduction targets. This section explains how alignment targets and policies could be used for both upstream and downstream emissions.

Aligning procurement with global climate goals

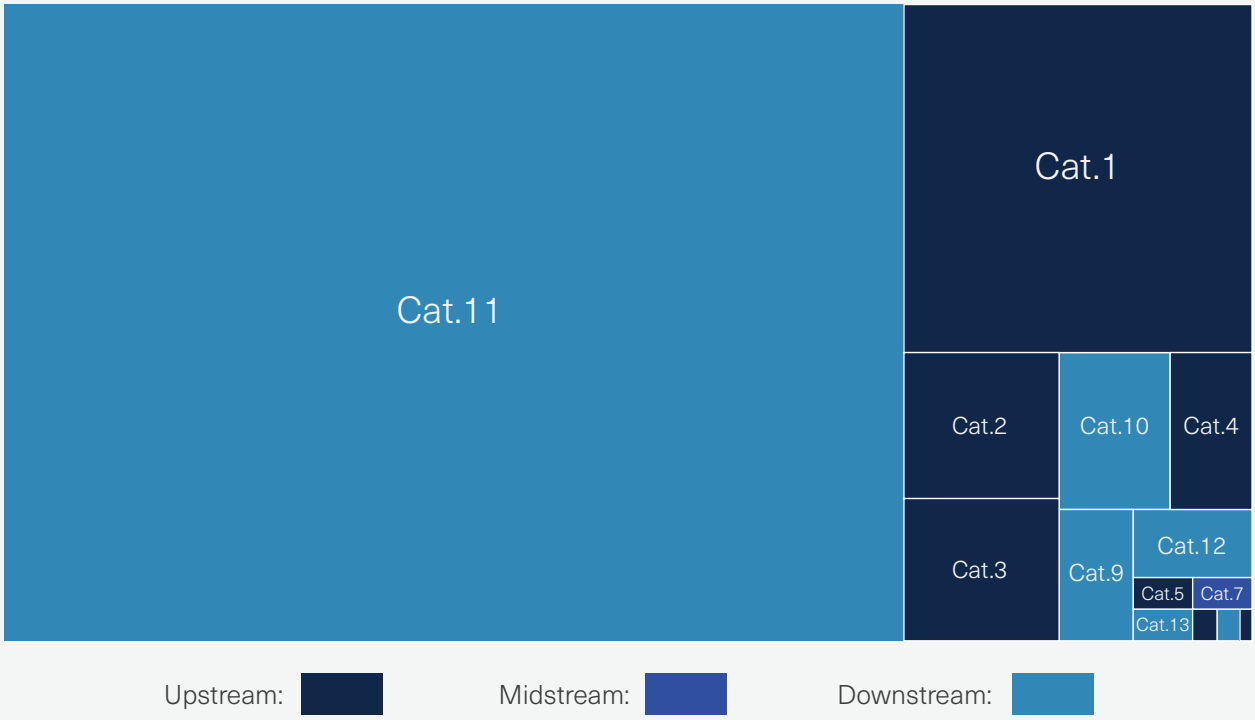
Upstream activities represent one of the largest sources of companies' emissions. These upstream activities encompass emissions associated with purchased goods and services (scope 3, category 1), capital goods purchased by the company (scope 3, category 2), fuel-and-energy related activities not covered in scope 1 and 2 (scope 3, category 3),[22] and emissions associated with upstream transportation and distribution services (scope 3, category 4), amongst others (see Figure 4). Analysis conducted by the London Stock Exchange Group (LSEG) on thirteen sectors concluded that emissions associated with purchased goods and services are within the top two categories for eleven of these sectors.[23]

22 Fuel-and-energy related activities not covered in scopes 1 or 2.

23 LSEG. (2024). Scope for Improvement: solving the scope 3 conundrum.

Figure 4. Scope 3 emissions by category (excluding category 15) [24]

Cat. 1: Purchased goods and services
Cat. 2: Capital goods
Cat. 3: Fuel- and energy-related activities
Cat. 4: Upstream transportation and distribution
Cat. 5: Waste generated in operations
Cat. 6: Business travel
Cat. 7: Employee commuting
Cat. 8: Upstream leased assets
Cat. 9: Downstream transportation and distribution
Cat. 10: Processing of sold products
Cat. 11: Use of sold products
Cat. 12: End-of-life treatment of sold products
Cat. 13: Downstream leased assets
Cat. 14: Franchises



Upstream GHG emissions are sometimes produced from activities controlled by entities with which companies have a direct relationship (i.e. tier one suppliers). In other cases, there are one or more degrees of intermediation between a source of emissions and a company. Some of the most emissions-intensive activities occur upstream in primary sectors, either during the production phase (e.g. land-use-intensive commodities like beef, coffee, rubber), or in the transformation of raw materials (e.g. energy-intensive commodities like basic chemicals, minerals, metals).[25]

24 Source: SBTi analysis based on self-reported emissions data publicly disclosed to CDP.

25 GHG Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard provides guidance on the applicability of downstream scope 3 categories for final and intermediate products, including minimum boundaries and disclosing and justifying exclusions of downstream emissions from sold intermediate goods.

Despite their high environmental impact, upstream activities often capture a smaller share of economic value compared to other stages in the value chain, such as processing, marketing, and retail. Furthermore, these emissions-intensive activities face a much higher "green premium" from the increased costs of decarbonizing production processes in comparison to downstream consumer-facing users of these commodities. For instance, according to the Energy Transitions Commission, the production of low-carbon steel would lead to a cost increase of 25-40% per tonne of steel sold for a steel producer.[26] In contrast, the use of low-carbon steel in a passenger car, a building or a wind turbine is likely to increase the cost of the final product by less than 1%. Therefore, addressing upstream value chain emissions provides an opportunity to align incentives and to share decarbonisation costs and opportunities in an equitable way within the value chain.

Alignment targets for procurement intend to incentivize an increased share of procurement from entities, activities and commodities that demonstrate emissions performance compatible with achieving net-zero emissions by 2050. This encourages companies to align procurement with their climate goals, leveraging their influence to catalyze decarbonization through the supply chain.

The SBTi has already tested a version of alignment targets for upstream emissions through engagement targets, which is currently used for 14% of SBTi-validated targets. While this is already a good foundation for addressing emissions from tier one suppliers, emissions are often deeper in the value chain.

Considering this, the SBTi is also exploring alignment at the activity level (e.g. production or transformation of a commodity). An alignment target for upstream activities may involve increasing the proportion of commodities or activities aligned with reaching net-zero emissions by 2050.

An activity may be considered aligned if it has reached a level of emissions performance consistent with reaching net-zero emissions or is undertaken by an entity that is transitioning towards a state compatible with reaching net-zero emissions. Different tools may be able to establish alignment at the activity level, including emissions-intensity benchmarks (e.g. from Paris-aligned emission pathways), developing climate taxonomies and commodity certification systems.

Standards and certification systems already exist that have embedded the notion of alignment into their systems, and others are in the process of doing so. An example is Responsible Steel, which has integrated progressive 1.5°C-aligned emissions benchmarks into its standards. The role of certification in alignment targets is discussed in more detail later in this paper.

Aligning downstream activities with global climate goals

LSEG concluded that downstream emissions associated with use of sold products are one of the top two categories of scope 3 emissions for nine out of thirteen sectors they analyzed.[27] According to analysis conducted by the SBTi on CDP data (see Figure 4), the top four categories of downstream emissions on average are associated with use of sold products (scope 3, category 11), processing of sold products (scope 3, category 10), downstream transportation and distribution services (scope 3, category 9) and the end-of-life treatment of sold products (scope 3, category 12).

Downstream GHG emissions are in some cases produced from activities controlled by business partners that

26 Energy Transitions Commission and Material Economics for the Mission Possible Partnership's Net-Zero Steel Initiative. (2021). Steeling Demand: Mobilising buyers to bring net-zero steel to market before 2030, version 1.0.

27 LSEG. (2024). Scope for Improvement: solving the scope 3 conundrum.

companies have a direct relationship with (e.g. direct customers). In others, there may be one or multiple degrees of intermediation between the source of emissions and the company (e.g. when a company sells an intermediate product that requires further processing or transformation before reaching the end user).

For downstream emissions, alignment targets intend to incentivize an increase in revenue derived from products, services or entities that meet emissions performance aligned with net-zero goals. This encourages companies to innovate and promote products that support global climate objectives. As with upstream activities, different tools can be used to establish net-zero alignment for downstream emissions, including Paris-aligned emissions-intensity benchmarks, taxonomies and certification systems.

This category of target may be particularly relevant for certain types of products, such as:

- **Fossil fuel products and feedstocks**, e.g. coal products, petroleum products, natural gas, crude oil.
- **Products that rely on fossil fuel combustion during use phase**, e.g. internal combustion vehicles, fossil fuel fired equipment such as furnaces, kilns, boilers, generators.
- **Products that consume electricity during use phase**, e.g. appliances, electric vehicles, electric heaters, air conditioners.
- **Products that emit GHGs during use phase**, e.g. refrigerators, nitrogen fertilizers.

The SBTi has already introduced downstream alignment targets. For example, the SBTi's Land Transport Guidance includes a minimum requirement for automakers to phase out new internal combustion engine (ICE) vehicles in leading markets by 2035 and by 2040 globally or earlier. The SBTi Financial Institutions Net-Zero Standard (under public consultation) is also built on the notion of driving alignment of financial services.

Company policies

Policies provide general objectives and management principles that companies can use for decision-making and development of action plans.[28] Alongside emissions reduction and alignment targets, policies may be an effective tool to strengthen efforts to address emissions sources in a company's value chain. In the context of scope 3 emissions, they can be used to establish guidelines and practices that direct the behavior and decisions of an organization towards achieving a state of net-zero value chain emissions.

Policies may be effective both in driving action towards achieving emissions reduction and alignment targets (e.g. sustainable sourcing policies) and in addressing specific impacts that may not be easily incorporated as part of a target (e.g. no-deforestation policies). We believe that complementing targets by including additional policies that address essential impacts and actions that help achieve outcome metrics can provide greater confidence that the right measures are being taken towards achieving net-zero value chains.

Some examples of policies that could be implemented into the value chain framework include:

- **Policies to address supply chain emissions**: Policies to progressively source input materials, services, and goods from sources that are aligned with global climate goals. Where companies have direct contractual relationships with tier one suppliers, they may be able to leverage direct buying power to positively influence supplier activities, for example through setting sustainable sourcing policies, contract terms and supplier codes of conduct. Policies may also include requirements to cascade beyond tier one suppliers.

- **Travel and transport policies**: Business travel, employee commuting and sustainable leasing policies, to optimize transportation activities and source from zero-emitting sources.

- **Product and service policies**: Policies to increasingly align product and service portfolios with emissions performance levels compatible with reaching net-zero emissions. For example, product reuse and recyclability policies, innovation and research and development policies for net-zero aligned products and services.

- **Policies for climate policy and lobbying**: In line with the United Nations High-Level Expert Group's recommendation for companies to "lobby for positive climate action and not against it", another key area to consider is the implementation of policies in relation to climate policy and lobbying,[29] including policies that could enable a company to reduce emissions in their value chain.

- **Sector-specific decarbonization policies**: For certain sectors or activities, the SBTi may require specific policies because they are essential for decarbonization in line with science. In a limited number of cases, the SBTi already requires policies in its sector-specific standards, such as preventing deforestation and ceasing fossil fuel financing.

28 EFRAG. (2022). Draft European Sustainability Reporting Standard, Appendix VI - Acronyms and glossary of terms.

29 United Nations' High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities. (2022). Integrity Matters: Net Zero Commitments By Businesses, Financial Institutions, Cities And Regions.

REVISE TARGET-SETTING BOUNDARY APPROACH TO PRIORITIZE ACTION ON THE MOST CLIMATE-RELEVANT ACTIVITIES IN THE VALUE CHAIN

Currently, SBTi standards follow a blanket percentage approach to defining the boundary for emission reduction targets, applying the same minimum boundary to all companies and sectors, which can create multiple challenges. To address this, this paper explores a more nuanced approach to defining target boundaries.

To reach net-zero emissions, all emissions sources must be abated. However, given the challenges inherent to decarbonization, especially concerning value chain emissions, companies should address emission reductions strategically. The OECD Guidelines for Multinational Enterprises on Responsible Business Conduct suggest that: "where it is not feasible to address all identified impacts at once, an enterprise should prioritize the order in which it takes action based on the severity and likelihood of the adverse impact."[30]

Considering this, this paper explores an alternative approach to defining target boundaries to enable companies to prioritize and focus action on the most climate-relevant emissions sources. The following parameters are being considered to support the design of an impact-based prioritization process:

- **Magnitude**: The first aspect being considered for prioritizing activities to be included in a target boundary refers to the volume of emissions released by a given activity in the value chain, as defined in relative or absolute terms. Companies are expected to address the most emissions-intensive activities in their value chain.
- **Activities in high-climate-impact sectors**: A second aspect being considered is for companies to address activities in energy-intensive and land-use-intensive sectors, given the significant contribution of these sectors to global GHG emissions and the importance of supporting and incentivizing the transition in these sectors. There are a number of sources that can be used as a reference to identify high-climate-impact sectors.[31] The SBTi has already implemented this approach in the consultation draft of the SBTi Financial Institutions Net-Zero Standard.[32]
- **Activities with high risk of emissions lock-in**: The third aspect under consideration is prioritizing activities that, if left unaddressed, could result in the lock-in of high-emission infrastructure. Such infrastructure may have a lifetime that is incompatible with achieving net-zero emissions by 2050. The SBTi has already introduced requirements to address long-lived emissions sources in the consultation draft of the SBTi Financial Institutions Net-Zero Standard.

Implementing prioritization may require a high-quality emissions inventory and much more granular understanding of emissions sources. Therefore, the feasibility of introducing this approach needs to be further explored in comparison to the current approach to target-setting boundaries.

More information about preliminary thinking on prioritizing activities in high-climate-impact sectors in the value chain can be found in Annex IV.

30 OECD. (2023). OECD Guidelines for Multinational Enterprises on Responsible Business Conduct.

31 Various sources have identified what might be considered high-climate-impact emissions sources, e.g. the EU Technical Expert Group on Sustainable Finance's 2019 report defined nine high-climate-impact sectors; CDP identifies a list of high-impact sectors alongside their most relevant scope 3 categories in a 2022 Technical Note; the Science Based Targets Network has compiled a list of high-impact commodities and classified these by their "material pressures", including climate change; SBTi Financial Institutions Net-Zero Standard (FINZ) provides a model for identifying and prioritizing high-climate-impact value chain emissions.

32 The "emissions intensive" sectors and activities included in the FINZ draft are derived from IEA. (2023). CO2 Emissions in 2022.

CONSIDERATION OF INFLUENCE IN THE TARGET-SETTING FRAMEWORK

Once companies have determined what emissions sources in their value chain are most climate-relevant, the next step is to determine how those emissions sources should be addressed. The extent to which a company can influence an emissions source (i.e. effect measurable change) is a critical factor in determining appropriate targets, policies and other relevant interventions.

The OECD Guidelines on Responsible Business Conduct recognize that there are "practical limitations on the degree of leverage enterprises have or may be able to build to effect change in the behavior of entities with which they have business relationships."[33]

As part of the updated target-setting framework, SBTi has been exploring options to acknowledge the degree of influence companies may have over relevant emissions sources in their value chain. Two possible options for how assessment of influence could be used to integrate this concept into the framework are being explored:

- **Prioritization of emissions sources**: An assessment of influence could be used to prioritize which emissions sources should be addressed through targets, policies and other relevant interventions, focusing efforts where companies can be most effective in driving change. Under this model, emissions sources over which companies have no or limited influence might potentially be excluded from the target boundary.
- **Determining differentiated interventions**: An assessment of influence could be used to inform which interventions companies can use to address their emissions. Under this model, companies might be required to address emissions sources over which they have reasonable influence levers through appropriate interventions (e.g. policies and targets) and to address the impact of emissions sources where companies have no or limited influence through other mechanisms. For instance, through collective action, policy engagement and others.

Both of these options carry potential risks, in part due to the high degree of subjectivity in defining thresholds for "reasonable" versus "limited influence".

The first option also presents a risk that using influence to prioritize emissions sources may lead to relevant emissions sources being ignored, as influence may be decoupled from climate-relevance. A company's degree of influence may also change over time as they engage with new technologies, and in new tactics and relationships. According to OECD Guidelines, where a company does not have sufficient leverage, it should consider ways to enhance its leverage over time.[34] It is likely that the target boundary would therefore require regular re-evaluation to ensure all emissions sources over which a company can effect change are included.

In the second option, defining rules for the selection of differentiated interventions based on levers and levels of influence poses a potential risk of "over-prescriptiveness" and leaving limited flexibility for companies to define their own action plans based on their company, sector and region-specific circumstances as part of their wider transition plans. However, there may be value in providing guidelines that help companies assess the range interventions available, the degree to which the company can effectively use the intervention to effect change and the measurability of the intervention.

33 OECD. (2023). OECD Guidelines for Multinational Enterprises on Responsible Business Conduct.

34 OECD. (2023). OECD Guidelines for Multinational Enterprises on Responsible Business Conduct suggests a number of ways to increase leverage over entities with which a company has business relationships.

EXPLORING THE ROLE OF ENVIRONMENTAL ATTRIBUTE CERTIFICATES IN ADDRESSING VALUE CHAIN EMISSIONS

EXPLORING THE ROLE OF ENVIRONMENTAL ATTRIBUTE CERTIFICATES IN ADDRESSING VALUE CHAIN EMISSIONS

As companies move from target setting to target implementation, more clarity is needed on how to substantiate claims of progress. This section explores how certificates of different kinds, including carbon credits and commodity certificates, might potentially support different types of claims that may be consistent with achieving net-zero emissions at the global level.

This section discusses the potential use of certificates, including commodity certificates and carbon credits, in corporate value chain climate targets and unpacks some of the key concepts that could guide the responsible use of these tools to catalyze net-zero transformation in the value chain and enable robust claims. The section introduces examples of scenarios where these certificates might help to substantiate claims in corporate mitigation strategies that may be consistent with achieving net-zero emissions globally. It also highlights potential risks associated with scenarios that may be more sensitive and suggests measures to mitigate potential risks.

It is important to clarify that this section does not intend to provide preliminary or definitive guidelines or requirements for the potential use of environmental attribute certificates in SBTi standards. The development of SBTi standards, including the definition of any technical aspects or requirements, such as the use of these instruments, is subject to the SOP for Development of SBTi Standards. It is also important to note that the effectiveness of individual types of instruments in meeting our global climate goals is not addressed here. The SBTi is conducting a separate research workstream on this topic.

WHAT ARE ENVIRONMENTAL ATTRIBUTE CERTIFICATES?

Environmental attribute certificates (EACs) encompass a diverse range of instruments that certify and communicate specific environmental or sustainability attributes of a given activity or commodity. By providing evidence that certain environmental standards or sustainability criteria have been met, these certificates enable companies to substantiate their environmental claims, support compliance with voluntary or regulatory schemes and enhance transparency within the value chain.

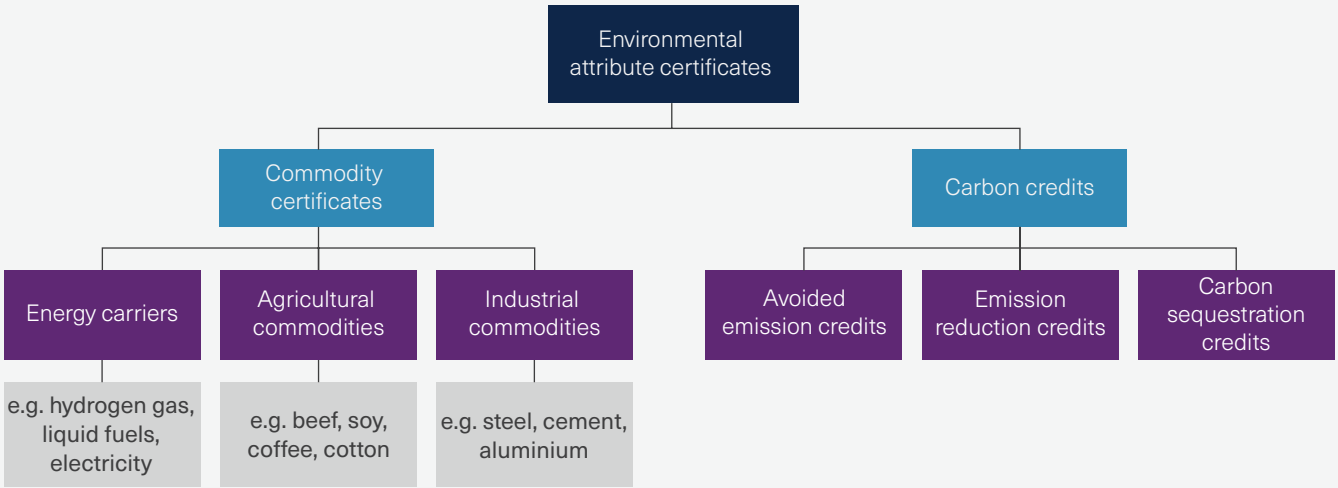
Generally speaking, certificates used to enable climate-related claims by corporates can be classified into two broad categories: commodity certificates and carbon credits (see Figure 5 below).

Commodity certificates are instruments that certify and convey sustainability information about the production process of different commodities. These certificates provide verified data on the environmental and/or social performance of a commodity in conformance with a specific sustainability standard.

Carbon credits are tradable instruments that represent the outcome of a mitigation activity, such as a project, program, or intervention, typically quantified in tonnes of carbon dioxide equivalent. These credits are measured, verified and certified according to established standards. Different certification schemes use different nomenclature for the carbon credits they issue. For example, Verra issues Verified Carbon Units (VCUs), while the Gold Standard issues Gold Standard Verified Emission Reductions (GS-VERs).

Carbon credits can be generated from activities that result in diverse mitigation outcomes. For instance, credits may be produced from activities that avoid emissions, reduce emissions, remove carbon dioxide from the atmosphere, or conserve or enhance existing carbon stocks. Each type of activity contributes uniquely to climate change mitigation and may support different types of claims. Moreover, some activities could result in multiple mitigation outcomes and issue credits for each distinct outcome.

Figure 5. Overview of environmental attribute certificates commonly used to substantiate climate-related claims.



IMPORTANCE OF TRACEABILITY IN SUBSTANTIATING CLIMATE-RELATED CLAIMS

The credibility and robustness of sustainability-related claims depend not only on the integrity of the standard used to assess the sustainability aspects of a given activity but also on the model employed to establish traceability of this activity and substantiate related claims.

Establishing value chain traceability for commodity certificates

Traceability of commodities is commonly established using different chain of custody models. The concept of the chain of custody for a commodity involves documenting, controlling and tracing each stage of the commodity or product's journey along the value chain, ensuring that the material or product's origin, handling, and transformation meet specific standards and regulations. The primary difference between various chain of custody models lies in the separation of certified and non-certified products throughout the supply chain and the extent to which the final product and its related claims can be traced back to its origin.

Different standards provide comprehensive definition of common chain of custody models used in commodity certification, including ISEAL,[35] ISO and the Greenhouse Gas Protocol.[36]

Among the most robust models to establish traceability are identity preservation and physical segregation, where certified commodities can be traced back through every stage in the value chain and are physically segregated from non-certified commodities. With these models, any related claim can be substantiated not only by holding the corresponding certificate but also through physical and contractual means. On the other side of the spectrum lie book and claim models, where certificates are unbundled from the physical flow of commodities and are usually traded separately. In this model, holding the certificate is the only mechanism to substantiate a claim.

Establishing value chain traceability for mitigation activities

Chain of custody models are generally associated with commodity certificates. However, the concept of traceability more widely can also be relevant in the context of carbon credits, and could enhance transparency and support the credibility of claims. Broadly speaking, carbon credits originate either from activities that can reasonably be traced back to the value chain of a company or from activities where association to the value chain of a company cannot be established.

35 ISEAL Alliance. (2016). Chain of custody models and definitions, version 1.0.

36 GHG Protocol. (2022). Land Sector and Removal Guidance. Part 2: Calculation Guidance.

As with commodity certificates, various approaches can be used to establish traceability for mitigation activities in the value chain through certification programs. For example, the Value Change Initiative defines full traceability as the ability to completely trace the mitigation outcomes of an intervention to an activity in the value chain and allocate them accordingly. In contrast, imperfect traceability refers to outcomes from activities where the level of traceability is lower.

The Advanced Indirect Mitigation platform (AIM) categorizes traceability into three main categories: physical association, close association, sector association.

There are not yet widely established norms for determining traceability of mitigation activities to value chains and to substantiate related claims.

More information about certification and environmental attribute certificates in addressing value chain emissions, including a background in commodity certificates and carbon credits, a description of the importance of chain of custody models, and further explanation of potential scenarios, can be found in Annex V.

POTENTIAL USE CASES OF CERTIFICATION AND EACS IN CORPORATE MITIGATION STRATEGIES

This sub-section provides examples of scenarios where certification might help to substantiate claims in corporate mitigation strategies consistent with achieving net-zero emissions globally. It also highlights risks associated with scenarios deemed to be more sensitive. These scenarios are presented solely to illustrate potential uses of certificates in scenarios that the authors have identified as potentially consistent with global climate goals and should be understood as neither exhaustive nor prescriptive. The inclusion of any of these scenarios, or others, in SBTi standards is subject to the standard development process described in the SOP for Development of SBTi Standards.

1 Scenario 1: Use of commodity certificates from value chain activities

Corporations' value chain emissions largely stem from the emissions tied to purchased goods and services, particularly from energy-intensive and land-use-intensive commodities. Reducing these upstream emissions requires both demand-side and supply-side interventions, which involves minimizing the consumption of such commodities as well as ensuring that their production adheres to climate-responsible practices.

Certification systems might be important in supporting value chain mitigation claims by allowing buyers to prove that their sourced commodities or activities meet emissions standards aligned with global climate goals or are produced in a way that is consistent with reaching net-zero emissions. To substantiate any related claims and to validate that certificates genuinely represent the environmental performance of the procured commodities or activities, a robust chain of custody is crucial to enable traceability.

2 Scenario 2: Use of commodity certificates from sources with lower or no value chain traceability

There may be scenarios where, on the pathway to net-zero, sourcing commodities aligned with global climate goals remains unfeasible, or whenever higher traceability cannot be established, due to market, regulatory, or physical barriers. In such cases, using certificates from chain of custody models with lower traceability (e.g. unbundled commodity certificates) could potentially be considered as an interim measure with clear guardrails (e.g. time, volume, etc.), limited to high-quality certificates from sources that can demonstrably lead to comparable net-zero aligned outcomes (e.g. level of finance, level of mitigation, etc.) and with claims that are appropriate to the level of traceability. Table 1 below provides a more detailed description of potential risks and mitigation measures associated with this use case.

Table 1. Potential risks and mitigation measures for the use of unbundled certificates.

RISK	DESCRIPTION	DEFINITION
Impact dilution	Risk that using unbundled certificates does not effectively contribute to additional mitigation efforts. This could occur, for instance, when there is an oversupply of certificates and additional demand does not result in additional low-carbon activity but rather in the reshuffling of attributes from existing low-carbon activities.	Book and claim models could be restricted to certificates and sources where demand can demonstrably lead to comparable transformation and mitigation outcomes, compared to the alternative of sourcing the low-carbon commodity directly.
Finance dilution	Risk that the expenditure on unbundled certificates results in a lower amount of mitigation finance compared to the actual sourcing of a low-carbon activity or commodity. This could occur, for instance, when there is an oversupply of certificates.	Book and claim models could be restricted to certificates and sources where demand can demonstrably lead to comparable mitigation finance, compared to the alternative of sourcing the low-carbon commodity directly.
Mitigation deterrence	Reduced incentive for corporates to remove barriers and to switch procurement towards low-carbon sources.	Unbundled certificates could be limited in volume and time, gradually shifting towards other chain of custody models.
Emissions lock-in	Risk that reliance on unbundled certificates reduces the ability and incentive for upstream suppliers to decarbonize, as downstream business partners may prefer purchasing unbundled certificates over enabling climate-responsible practices from upstream suppliers.	Unbundled certificates can be limited in volume and time, gradually shifting towards other chain of custody models.
Misleading claims	Risk of claims that can potentially mislead stakeholders about the actual environmental performance of activities in the value chain.	Implement a claims system that leads to transparent and accurate claims that prevents misrepresenting the actual impact of activities in the value chain. For instance, if certificates come from sources that cannot be linked to value chain activities, beyond-value chain mitigation claims may be more appropriate.

3 Scenario 3: Use of carbon credits from mitigation activities within the value chain to substantiate value chain emission reduction claims

It is important to note that SBTi standards require that carbon credits are not counted as emission reductions toward the progress of companies' science-based targets. However, this scenario suggests the possibility of carbon credits to support value chain emission reduction claims if they represent emission abatement (i.e. emission reduction within the value chain, as opposed to emissions avoidance or carbon dioxide removal) from sources traceable to the company's value chain, and that these mitigation outcomes are fungible[37] with corporate GHG emissions inventory.

Some of the areas that require further exploration in the use case of carbon credits to substantiate value chain emission reduction claims include:

- Defining and standardizing value chain traceability.
- Accounting adjustments when baseline emissions from the emission source are estimated using secondary data.
- Adjusting for activities issuing multiple certificates that substantiate climate claims (e.g. commodity certificates).
- Adjustments needed to prevent double claiming.

Furthermore, additional guidance is needed on appropriate claims for entities directly mitigating an emission source (e.g. through the provision of finance) versus those with indirect involvement in the abatement activity.

4 Scenario 4: Use of carbon credits to support neutralization of residual emissions

The SBTi Corporate Net-Zero Standard requires companies to neutralize the climate impact of scientifically-defined residual emissions at their net-zero target year and any future emissions by permanently removing and storing carbon from the atmosphere. Scientifically-defined residual emissions are those that remain after the implementation of all possible mitigation measures considered in pathways that limit warming to 1.5°C with no or limited overshoot, covering scope 1, 2, and 3 emissions. Carbon credits from GHG removal activities are a potential means to finance the neutralization of these residual emissions.

The SBTi is conducting research to identify eligible solutions and technologies to ensure that neutralization is achieved through carbon removal and storage with permanence matching the impact of any remaining residual emissions. The SBTi will subsequently work to establish guidelines to ensure the effective and responsible use of these neutralization methods within its standards. Some of the key concepts being explored include:

- **Matching emissions type with storage type (biogenic or geologic)**: This approach would require that the type of carbon removal matches the type of emission, whether biogenic or fossil, to ensure compatibility with the carbon cycle's slow or fast domains.
- **Matching atmospheric lifetime with storage timescale (physical equivalence)**: This approach would require the storage duration to match the atmospheric lifetime of the residual GHGs, allowing short-lived GHGs (e.g. methane) to be neutralized by temporary storage and long-lived GHGs (e.g. carbon dioxide) by long-term storage.
- **Establishing fungibility between removal methods (economic equivalence)**: Other approaches involve creating equivalence ratios to quantitatively value carbon dioxide removal (CDR) with different levels of permanence in carbon removal, balancing the economic benefits of reducing warming temporarily against long-term climate damage costs. However, these approaches carry risks due to potential discrepancies in assessing storage times, costs, and impacts on long-term temperature change.

37 Fungibility is deemed feasible for carbon credits that represent reduction of emissions of an emission source that was actually included in the corporate GHG emissions inventory in the base year. In contrast, emissions avoidance, carbon dioxide removal or reduction of emissions for emission sources not included in the base year GHG inventory may not be deemed fungible.

5 Scenario 5: Use of carbon credits to support beyond value chain mitigation

Businesses can play a critical role in the transition towards a net-zero economy, not only by driving this transformation within their immediate operations and value chains, but also by contributing to the broader societal shift towards net-zero through beyond value chain mitigation (BVCM). Companies can deliver BVCM through a range of instruments including through the purchase and retirement of high-quality carbon credits and direct investments (e.g. equity, debt or project finance).[38]

The traditional practice of offsetting, which implies purchasing carbon credits instead of abating emissions at their source, involves a number of risks, especially considering that all emissions sources, including those within corporate value chains and those beyond, need to be mitigated to achieve a state of global net-zero emissions. However, corporates and corporate decarbonization programs might incentivize and contribute to mitigation finance to support beyond value chain mitigation through carbon markets.

To support this, this paper explores how companies could be incentivized to abate emissions within their value chain while also taking responsibility for unabated emissions through beyond value chain mitigation. Some of the risks that are known about the practice of emissions offsetting and potential mitigation measures are presented in Table 2 below. These mitigation measures may be considered in the use case described in this scenario.

Table 2. Potential risks and mitigation measures for the use of carbon credits from activities beyond a company's value chain.

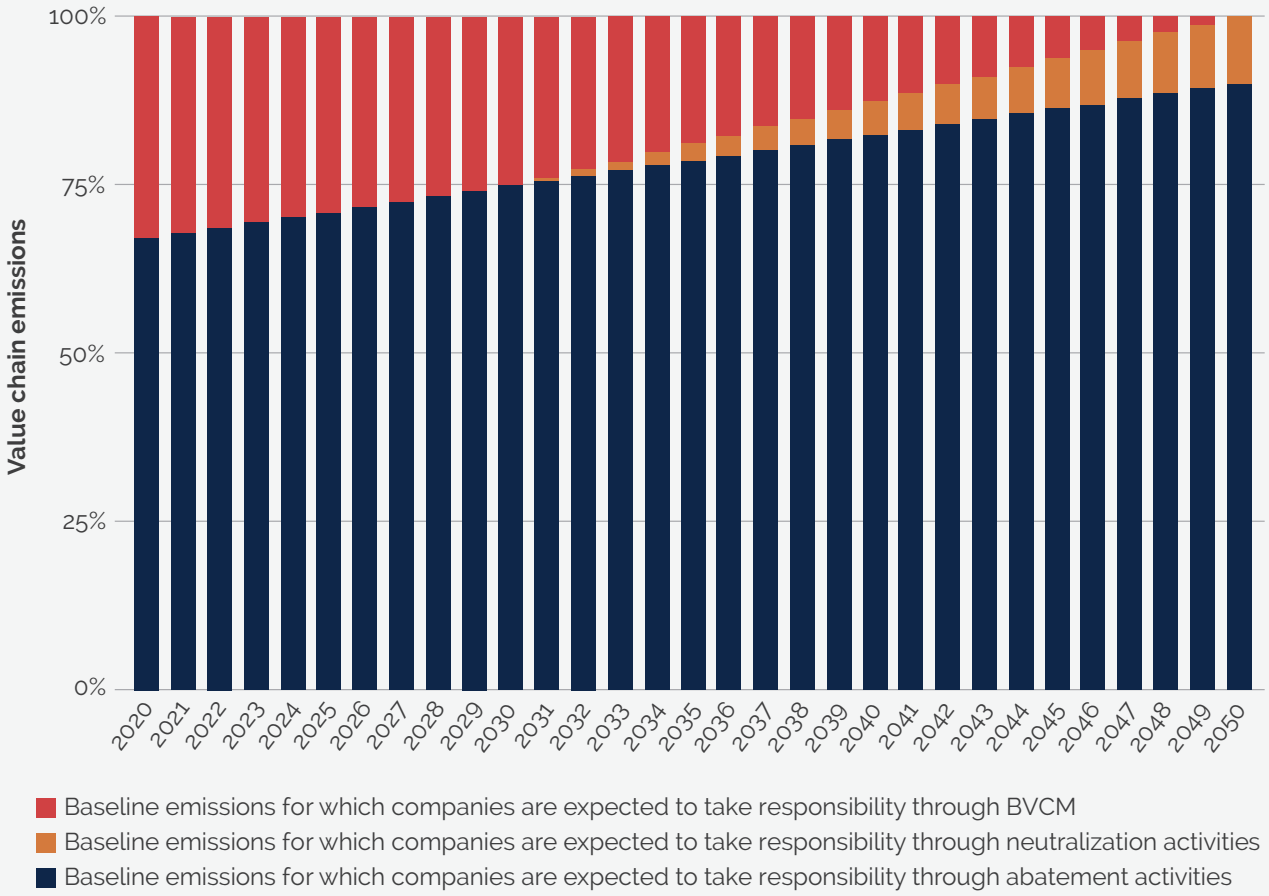
RISK	DESCRIPTION	POTENTIAL MITIGATION MEASURES
Integrity risks	Risk that carbon credit projects lack integrity, leading to stakeholder criticism and reputational damage.	Supply-side quality criteria to ensure that carbon credits represent verifiable, additional and permanent mitigation outcomes. Quality criteria may encompass not only environmental, but also, social and other sustainability aspects to ensure that carbon credits deliver strong sustainability outcomes.
Impact risks	Risk that the purchase of carbon credits does not effectively contribute to additional mitigation efforts. This may occur, for instance, when carbon credits do not adhere to strict additionality criteria or when the purchase of credits does not result in additional mitigation but rather in the reshuffling of attributes from mitigation activities that already occurred.	Supply-side quality criteria to ensure that carbon credits represent verifiable, additional and permanent mitigation outcomes. Additional eligibility criteria, such as limiting the vintage of carbon credits and prioritizing projects with a recent start date, may be considered to incentivize that demand for carbon credits results in additional mitigation projects.

38 SBTi. (2024). Above and Beyond: An SBTi Report on the Design and Implementation of Beyond Value Chain Mitigation (BVCM).

RISK	DESCRIPTION	POTENTIAL MITIGATION MEASURES
Finance dilution risks	Risk that the expenditure on carbon credits results in a lower amount of mitigation finance compared to abatement of emissions at source. This may occur, for instance, when the price of carbon credits does not correspond to the actual abatement cost of the underlying activity or when carbon credits contribute only marginally to the actual abatement costs of the underlying activity.	Different options may be considered, including the use of carbon credits as a supplement to value chain abatement (and not as a substitute). Additional eligibility criteria may also be considered to direct finance towards activities where carbon credits can demonstrably make a meaningful contribution to the underlying abatement costs.
Mitigation deterrence	Reduced incentive for corporates to abate emissions at source or to remove barriers that prevent value chain decarbonization.	Carbon credits from mitigation activities that occur outside of a company's value chain can be used as a supplement to value chain abatement and not as a substitute. For instance, acknowledging that value chain decarbonization is a gradual process and that companies will continue to release GHG emissions while they transition towards a net-zero value chain, carbon credits may serve as a tool for companies to take responsibility for unabated emissions during this transition.
Emissions lock-in	Risk that reliance on carbon credits reduces the ability and incentive for upstream suppliers to decarbonize, as downstream business partners may prefer purchasing carbon credits over enabling climate-responsible practices from upstream suppliers.	Carbon credits from mitigation activities that occur outside of a company's value chain can be used as a supplement to value chain abatement and not as a substitute. For instance, acknowledging that value chain decarbonization is a gradual process and that companies will continue to release GHG emissions while they transition towards a net-zero value chain, carbon credits can serve as a tool for companies to take responsibility for unabated emissions during this transition.
Misleading claims	Risk of claims that can potentially mislead stakeholders about the actual environmental performance of activities in the value chain.	Implement a claims system that leads to transparent and accurate claims that prevents misrepresenting the actual impact of activities in the value chain.

An illustration of a scenario in which companies are incentivized to abate emissions within their value chain, while also being incentivized to finance mitigation beyond their value chains, is presented in Figure 6 below. This scenario is provided for illustrative purposes only.

Figure 6. Illustrative example of a scenario where companies are incentivized to abate scope 3 emissions, neutralize residual emissions, and finance mitigation outside their value chain.



In this illustrative example, companies are expected to abate value chain emissions according to the target boundaries currently used in SBTi standards. The minimum share of emissions that companies are expected to address through abatement within their value chain starts at 67% and gradually increases to 90% by 2050, in line with the SBTi Corporate Net Zero Standard. For the proportion of emissions that are not yet addressed within the target boundary, companies could be incentivized to take responsibility by financing mitigation activities beyond their value chain. Over time, the proportion of emissions that can be addressed through beyond value chain mitigation decreases as the proportion of emissions expected to be abated increases. Additionally, companies are expected to gradually shift

towards neutralization activities for emissions that remain unabated. By the net-zero target year (2050 in this illustrative example), 90% of the emissions are expected to have been abated, with the remaining 10% counterbalanced through appropriate removal activities. In this illustrative example, the shift towards neutralization activities starts from 2030. However, the current SBTi Corporate Net Zero Standard does not yet include interim neutralization milestones.

In this example, companies take responsibility for the totality of emissions in their value chain. Financing mitigation activities outside of the company's value chain acts as a supplement to value chain abatement activities within the target boundary, not as a substitute. Furthermore, the expectation that companies take responsibility for emissions sources not yet included in the target boundary can stimulate corporate finance towards mitigation activities in need of funding and functions as an emissions pricing mechanism. Pricing emissions not yet included in the target boundary can also incentivize companies to set more ambitious abatement targets that exceed the minimum boundary requirements.

OPERATIONALIZING THE PROPOSALS

OPERATIONALIZING THE PROPOSALS

This section presents a description of how the concepts outlined above could potentially be combined into a process for value chain transformation consisting of five key steps that companies could take, as set out in Figure 7. These steps are not intended to be preliminary or definitive guidelines or requirements and are subject to further deliberation as part of the SOP for Development of SBTi Standards.

Figure 7: Five-step process to implement the proposed framework for managing value chain emissions towards net-zero transformation.

Table 3 below elaborates on each of the steps, drawing on the options previously described, and shows how these could be used by companies to develop value chain targets and mitigation strategies to align emissions sources in their value chain with net-zero. The five steps are cyclical, meaning companies would periodically review their value chain net-zero strategies to ensure they address all relevant emissions sources in their targets, policies and other relevant interventions.

Table 3. Summary of potential step-by-step approach to bring concepts outlined in this paper together.

STEP 1: MEASURE AND DISCLOSE GREENHOUSE GAS EMISSIONS ACROSS THE VALUE CHAIN

In line with the current approach to setting science-based targets, this paper proposes that the first step would be for companies to calculate their GHG inventory. The SBTi already requires companies to publicly report their company-wide GHG emissions inventory and progress against published targets annually. The sub-steps below summarize the scope 3 GHG inventory requirements and recommendations that are under consideration in the potential updated framework.

Step 1.1 Develop a GHG emissions inventory as per the Corporate Net-Zero Standard

- Develop a scope 3 inventory based on the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard and the Scope 3 Calculation Guidance.
- Ensure that all relevant categories and emissions sources specified within the minimum boundary in Table 5.4 of the GHG Protocol Scope 3 Standard are included. Additionally, if applicable and within the company's control, include emissions beyond the minimum boundary.
- Break down emissions inventory into individual GHGs, if relevant for the sector (e.g. fossil fuel production and distribution, agriculture, waste management).
- Estimate, describe and disclose any exclusions from the inventory, including scope 3 categories that are considered negligible (either in tonnes of CO_2 equivalent or percentage of total scope 3 emissions).
- Undertake third-party GHG verification by an independent third party (recommended).
- Publicly report the GHG inventory annually.

STEP 2: IDENTIFY AND PRIORITIZE CLIMATE-RELEVANT EMISSIONS SOURCES

This paper explores the possibility of applying three parameters to assess climate impacts to strengthen the current approach to target-setting boundaries. By undertaking an enhanced climate impact assessment, the company could ensure that the climate-relevant areas of its value chain are considered within its target boundary and transition to net-zero. The sub-steps below outline a set of potential actions companies could take to carry out an enhanced climate impact assessment to establish target-setting boundaries.

Step 2.1: Identify the emissions sources that contribute to the GHG inventory

- Break down the inventory by emissions source (i.e. commodities, products, services, activities). For example, a company that has emissions from logistics could break these down into air, sea and road freight.
- The SBTi currently defines a significance threshold of 5%, which may offer a useful rule of thumb to apply to the scope 3 inventory as a minimum threshold for understanding how far the inventory should be broken down.
- Prepare this analysis in a format that can be disclosed for the SBTi validation process and to other stakeholders.

Step 2.2: Assess inventory based on magnitude of emissions

- Prioritize emission hotspots within the value chain, based on magnitude of emissions.
- This could be done by ranking emissions sources from highest to lowest in terms of magnitude.

To support this, the SBTi may:

- Define thresholds by which these emissions sources must be included, for example:

Absolute

- Emissions (e.g. ≥10,000 CO_2e)
- Financial (e.g. ≥$25,000 spend or revenue)

Relative

- Emissions (e.g. ≥5% of total scope 3)
- Financial (e.g. ≥5% spend or revenue)

Step 2.3: Assess inventory against activities in high-climate-impact sectors

- Undertake a check to identify activities in high-climate-impact sectors and eligible exclusions.

To support this, the SBTi may:

- Provide guidance or references to other resources on activities that are associated with high-climate-impact sectors (e.g. energy-intensive and land-use-intensive sectors).
- Define a list of eligible exclusions from low or positive climate impact areas, such as upstream production emissions from selling second-hand items.

Step 2.4: Assess inventory against activities with high risk of emissions lock-in

- The company would then undertake a check against this guidance to identify activities that, if left unaddressed, could result in the lock-in of high-emission infrastructure.

To support this, the SBTi may:

- Provide guidance or references to other resources on activities that may pose a risk of emissions lock-in.

Figure 8. High-level illustrative example of how a company might assess its value chain emissions against the three parameters to identify climate-relevant emissions sources.

		2.2 Magnitude	2.3 High-climate-impact sector	2.4 Risk of emissions lock-in
		Does the emissions source meet the refined thresholds for inclusion in the target boundary?	Is the emissions source associated with activities in energy-intensive and land-use-intense sectors?	Is the emissions source associated with acitivies with high risk of emissions lock-in?
2.1 Emissions sources	A	✓	✓	✓
	B	✓	✓	✗
	C	✓	✗	✗
	D	✗	✗	✗
	E	✗	✗	✓
	F	✗	✓	✓
	G	✓	✗	✓
	H	✗	✓	✗

Step 2.5: Establish target boundary

- Determine where to focus efforts for near-term scope 3 targets addressing the most climate-relevant emission sources based on the three parameters of climate impact assessment hereby described.

This paper outlines four potential options for implementation of this approach to target-setting boundaries that may be considered (see Annex I for further understanding of the challenges related to the current approach to determining the target boundary).

STEP 2: IDENTIFY AND PRIORITIZE CLIMATE-RELEVANT EMISSIONS SOURCES (CTD.)

Table 4. Options being explored for approach to determining the target boundary for near-term targets (see Key Challenge 3 within Annex I, which describes the limitations of the current approach to target boundaries).

DESCRIPTION	PROS	CONS
OPTION 1 **Align near-term boundary with net-zero target boundary requirements (90%), supplemented by climate-relevant emissions sources if necessary.**	• More consistent with current approach • Ensures that climate-relevant emissions sources are addressed • Avoids issues in relation to the current "expansive boundary approach"	• Dependency on GHG emissions metric • Arbitrary % target boundaries • % target boundary poses challenges in relation to tracking progress • Maintaining a % target boundary might lead to misleading claims • May distract focus from climate-relevant emissions sources • Allows for 10% of emissions to remain unaddressed in long-term targets, resulting in additional neutralization measures to reach net-zero
OPTION 2 **Retire percentage target boundary concept. Focus on climate-relevant emissions sources, and require transparent justification for why other emissions sources are not addressed.**	• Directs focus on climate-relevant emissions sources • More comparable across companies with similar business models • Avoids issues with GHG accounting metric • Avoids issues related to percentage boundaries • Enables companies to exclude low or positive climate impact areas	• Need for robust guidance to ensure consistency and credibility in analysis and identification of climate-relevant emissions sources • Need for robust guidance on justifiable exclusions • Need for robust guidance for developing credible claims • Need for continuous reassessment to ensure climate-relevant emissions sources are not neglected
OPTION 3 **Use a 67% near-term target boundary and 90% long-term target boundary as a minimum threshold, supplemented by climate-relevant emissions sources if necessary.**	• Most consistent with current approach • Ensures that climate-relevant emissions sources are addressed	• Dependency on GHG emissions metric • Arbitrary % target boundaries • % target boundary poses challenges in relation to tracking progress • Maintaining a % target boundary may lead to misleading claims • Lack of clarity on how to increase boundary from 67% to 90% over time • Incompatibility in ambition between near-term targets and long-term targets • May distract focus from climate-relevant emissions sources • Allows for 10% of emissions to remain unaddressed in long-term targets, resulting in additional neutralization measures to reach net-zero
OPTION 4 **Select a minimum of the two most relevant scope 3 categories.**[39]	• Directs focus of data collection and intervention efforts • Simple to understand • If effectively implemented, could ensure that on average over 80% of total scope 3 emissions is covered per sector	• Dependency on GHG emissions metric • Prioritization at the scope 3 category level may be too high-level to target effective action (sub-categories may be better) • Climate-relevant emissions sources may be excluded

39 According to LSEG analysis, the two most material scope 3 categories covered at least 72% – and on average 81% – of the overall Scope 3 emissions intensity in each sector analyzed. Source: LSEG. (2024). Scope for Improvement: solving the scope 3 conundrum.

STEP 3: ESTABLISH TARGETS AND POLICIES TO MITIGATE CLIMATE-RELEVANT EMISSIONS SOURCES

Once all climate-relevant emissions sources have been identified and the company has determined where to focus its efforts, the next proposed step in the potential framework presented in this paper is for companies to implement targets and policies to address those emissions sources. The potential steps to do this are outlined below:

Step 3.1: Set a long-term emissions-based target

- Set a long-term emission reduction target for 2050 latest on scope 3 emissions based on current SBTi methods using the aggregated scope 3 metric.

Step 3.2: Set near-term targets on climate-relevant emissions sources

- Select appropriate target-setting methods (emissions-based and/or alignment-based) to provide measurable time-bound goals to mitigate the emissions sources within the target boundary and align upstream and downstream emissions sources with global climate goals.
- Select relevant metrics to quantify and track the share of upstream and downstream entities, activities, commodities, products and services that are aligning or aligned with global climate goals.

Step 3.3: Establish relevant policies that address value chain net-zero transformation

- Publish policies outlining the key steps the company will take to align upstream and downstream entities, activities, commodities, products and services with global climate goals. These may include:
  - Policies to address supply chain emissions.
  - Travel and transport policies.
  - Product and service policies.
  - Policies for climate policy and lobbying.
  - Sector-specific decarbonization policies.

Step 3.4: Develop a clear action plan to support the net-zero commitment across the organization to ensure aligned and coordinated climate action upstream and downstream

- Avoid and prevent adverse climate impacts from operations and business relationships.
- Encourage responsible business practices among partners.
- Mitigate and remediate unavoidable impacts.
- Continuously improve the quality of disclosed data to increase traceability and understand the impact of interventions.

STEP 4: IMPLEMENT ACTIONS TO ACHIEVE TARGETS AND TAKE RESPONSIBILITY FOR EMISSIONS NOT YET INCLUDED WITHIN TARGET BOUNDARY

Once targets and policies have been established to address the most climate-relevant emissions sources, the next step is to implement action plans to achieve the targets. In implementing actions, companies may need to consider the extent to which they can influence the emissions source (i.e. effect measurable change), including through business decisions or applying leverage to effect change in the practices of another party. For the proportion of emissions that are not yet addressed within the target boundary, companies could be incentivized to implement other interventions to take responsibility, e.g. by financing mitigation activities beyond their value chain.

Step 4.1: Develop and implement action plans to prevent or mitigate actual or potential climate impacts within the target boundary.[40] Examples of potential actions for consideration include:

- Assign responsibility for developing, implementing and monitoring plans.
- Consider available levers to address upstream and downstream impacts.
- Support or collaborate with relevant business partners.
- Use leverage to effect positive change through business relationships.
- Where a company does not have sufficient leverage, consider ways to enhance leverage over time, including through cooperating with other actors to build and exert collective leverage, for example through collaborative approaches in industry associations, or through engagement with governments, among other approaches.[41]

Step 4.2: Take responsibility for emissions not yet prioritized

- Consider options to take responsibility for emissions sources not yet addressed within the target boundary, in order to take responsibility for the totality of value chain emissions.
- Options for consideration could include financing mitigation activities outside of the company's value chain, e.g. purchase and retirement of high-quality carbon credits, direct investments, etc.,[42] as well as ways to drive change through cooperating with other actors to build and exert collective leverage.
- IMPORTANT: Financing mitigation activities outside of the company's value chain acts as a supplement to value chain abatement activities within the target boundary, not as a substitute.

40 OECD. (2023). OECD Guidelines for Multinational Enterprises on Responsible Business Conduct.

41 OECD. (2023). OECD Guidelines for Multinational Enterprises on Responsible Business Conduct suggests a number of ways to increase leverage over entities with which a company has business relationships.

42 Companies can deliver beyond value chain mitigation through a range of instruments, which are described in the SBTi's BVCM report. Above and Beyond: An SBTi Report on the Design and Implementation of Beyond Value Chain Mitigation (BVCM).

STEP 5: MEASURE EFFECTIVENESS OF INTERVENTIONS AND COMMUNICATE PROGRESS

The final proposed step of the potential framework presented in this paper is disclosure and continuous reassessment to ensure effectiveness of interventions and transparency. Potential sub-steps to include in the framework are outlined below.

Step 5.1: Measurement and reporting

- Clear and comprehensive public annual reporting of progress, including whether progress is on track, an analysis of trends or significant changes in the performance, and, if applicable, a strategy for addressing deficits in the future.
- Disclose justification of approach to setting targets (methodologies and significant assumptions used to define targets) and policies.
- If applicable, disclose why excluded emissions sources are not addressed.
- Disclose a transition plan, including information on actions planned.

Step 5.2: Continuous reassessment

- Embed continuous reassessment of emission source to ensure any emissions sources that were previously identified as not relevant, but that are now relevant, are covered by targets, policies and other relevant interventions.
- Ensure robustness and transparency related to ambition and performance throughout the net-zero journey.

CONCLUSIONS AND NEXT STEPS

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AREAS FOR FURTHER WORK

Some of the concepts discussed in this paper require further research, testing, learning, and refinement before they reach the necessary level of maturity for broader adoption. We expect that this discussion paper will stimulate further development of these concepts not only within SBTi but also within the broader ecosystem to enable net-zero-aligned transformation within corporate value chains.

Some of the key areas for further development include:

- Research on methods to determine benchmarks for outcome-based metrics consistent with reaching global climate goals.
- Research to assess the feasibility of introducing and standardizing the concept of influence in a target-setting framework.
- Further exploration into:
  - The use of different tools, including certification and taxonomies to define science-based benchmarks to inform alignment of procurement and products with global climate goals and to enable interoperability between commodity level and entity-level certification over time;
  - Evolving GHG accounting methods and alignment with best practices;
  - The use of carbon credits from abatement activities within the value chain to substantiate value chain emission reduction claims;
  - The effectiveness of different environmental attribute certificates to drive mitigation and transformation outcomes consistent with reaching global climate goals when used under a book and claim model.
- Rigorous examination of the credibility of potential claims related to value chains that will be enabled by the CNZS V2.0.
- An in-depth risk assessment of potential areas for improvement in the scope 3 target-setting framework.
- Further research of equity considerations in the design of scope 3 target-setting requirements.

To achieve this, the SBTi will engage with a broad range of stakeholders to gain diverse perspectives on the concepts discussed in this paper and will undertake further research including feasibility assessment and pilot testing of potential changes.

CONCLUSION

Since the SBTi first introduced initial requirements for scope 3 target setting almost a decade ago, widespread adoption of scope 3 targets has helped to drive a paradigm shift towards companies taking responsibility for emissions across their entire value chains. Mainstreaming scope 3 target setting has brought with it a growing recognition of the challenges associated with decarbonizing value chains and the need to rethink the scope 3 target-setting approach to effectively manage greenhouse gas emissions in the value chain.

This paper has set out the key challenges associated with the existing target-setting framework, which stem primarily from deriving metrics and methods from aggregated scope 3 emissions, which are subject to optionality, volatility and data reliability constraints, and may not easily be linked to Paris-aligned emissions trajectories, as well as limited consideration of the climate impact of emissions sources within the target boundary and companies' ability to effect change on those sources.

The purpose of this paper was to set out the challenges and opportunities with scope 3 target setting and share the SBTi's initial thinking on potential changes being explored around scope 3 target setting. Implementing the proposed enhancements may lead to a more actionable, transparent and impactful framework that supports the SBTi in delivering its mission "to drive science-based climate action in the corporate sector consistent with limiting warming to 1.5°C". Despite this, this paper identifies various risks with the conceptual framework that has been proposed, which must be further explored as described above.

CALL FOR STAKEHOLDER FEEDBACK

The SBTi encourages stakeholders to provide feedback on the proposed approach and preliminary options to improve the value chain framework. Please consult the SBTi website for details on how to submit feedback.

GLOSSARY

GLOSSARY

The comprehensive glossary of SBTi terminology is available online. For the purposes of clarity and to ensure a thorough understanding of the terminology introduced in this paper, we have provided the following definitions that are not contained within the online SBTi glossary. These definitions are preliminary and may be subject to further refinement before formal inclusion in the SBTi glossary.

TERM	DEFINITION
Actions	Activities that are undertaken to ensure that the company delivers against a specific policy objective or a target.
Alignment	Consistency with outcomes that are compatible with achieving net-zero emissions by 2050, in line with limiting global warming to 1.5°C by 2100.
Emissions sources	Commodities, products, services and activities that release greenhouse gas emissions.
Impacts	Long-term effects (direct or indirect, intended or unintended) on the sustainability issue produced as the result of an intervention.[43]
Intervention	Policies, targets, and actions that companies put in place to address emissions in their value chain.
Metrics	A target-setting metric is a quantifiable indicator to assess, manage, compare and communicate the past, current or intended climate-related performance of an organization. Metrics can be expressed in terms of impact or outcome: • Impact-based metrics measure the actual effects or results of an organization's activities on the climate (e.g. greenhouse gas emissions released into the atmosphere). • Outcome-based metrics measure the extent to which an organization's strategies, operations, and business model are aligned with global climate goals (e.g. percentage of electricity sourced from zero-carbon sources).
Net-zero value chain	A net-zero value chain means that all stages of the value chain – from raw material extraction, through to production and distribution, to product use and disposal – must operate without resulting in the accumulation of GHGs in the atmosphere. Meeting this goal, aligned with the Paris Agreement, requires mitigation in line with pathways that limit global warming to 1.5°C with no or limited overshoot to reach net-zero by 2050.
Outcomes	The short-term and medium-term effects of an intervention on the sustainability issue in question.[44]
Policies	A set or framework of general objectives and management principles that the company uses for decision-making.[45]
Value chain	A value chain encompasses the activities, resources and relationships the undertaking uses and relies on to create its products or services from conception to delivery, consumption and end-of-life.[46]

43 3keel. (2020). Performance metrics for key sustainability issues.
44 3keel. (2020). Performance metrics for key sustainability issues.
45 EFRAG. (2022). Draft European Sustainability Reporting Standard, Appendix VI - Acronyms and glossary of terms.
46 EFRAG. (2024). EFRAG IG 2: Value Chain Implementation Guidance.

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ANNEX I: KEY CHALLENGES RELATED TO CURRENT TARGET-SETTING METHODS

ANNEX I: KEY CHALLENGES RELATED TO CURRENT TARGET-SETTING METHODS

The following appendix provides additional detail on the five key challenges associated with scope 3 target setting. By exploring these challenges in detail, we aim to provide a comprehensive understanding of the complexities involved and offer insights into potential solutions.

KEY CHALLENGE 1: USE OF AGGREGATE SCOPE 3 EMISSIONS AS THE PRIMARY METRIC FOR MANAGING VALUE CHAIN IMPACTS

Optionality in GHG accounting and calculation approaches

Scope 3 emissions can be difficult to measure directly because they occur outside companies' operational control. To accommodate for this challenge, GHG reporting standards provide optionality in how companies calculate their scope 3 emissions, offering a range of potential methods with different levels of specificity.[47] Scope 3 emissions calculations vary significantly due to the variability in assumptions, methodological choices and data sources.

To calculate scope 3 emissions, companies may use either primary or secondary data. Primary data includes data provided by suppliers or customers that directly relates to specific activities within a company's value chain. Secondary data includes industry averages or other generic data that is not from specific activities within a company's value chain.

Primary and secondary data can be used as inputs to calculate emissions using a variety of different methods. For example, to calculate emissions from purchased goods and services, companies may select from four potential methods (supplier specific, average data, spend based, hybrid), which use different types of underlying primary and secondary data sources with different levels of granularity and accuracy.

47 According to GHG Protocol: "If a calculation method is specific to a company's activity, the calculation is based on data relating directly to the particular activity in question, such as data collected from a transport provider relating to journeys carried out. In contrast, less specific methods use data that does not directly relate to the activity, such as industry average emission factors." Source: GHG Protocol. Technical Guidance for Calculating Scope 3 Emissions, Greenhouse Gas Protocol, version 1.0

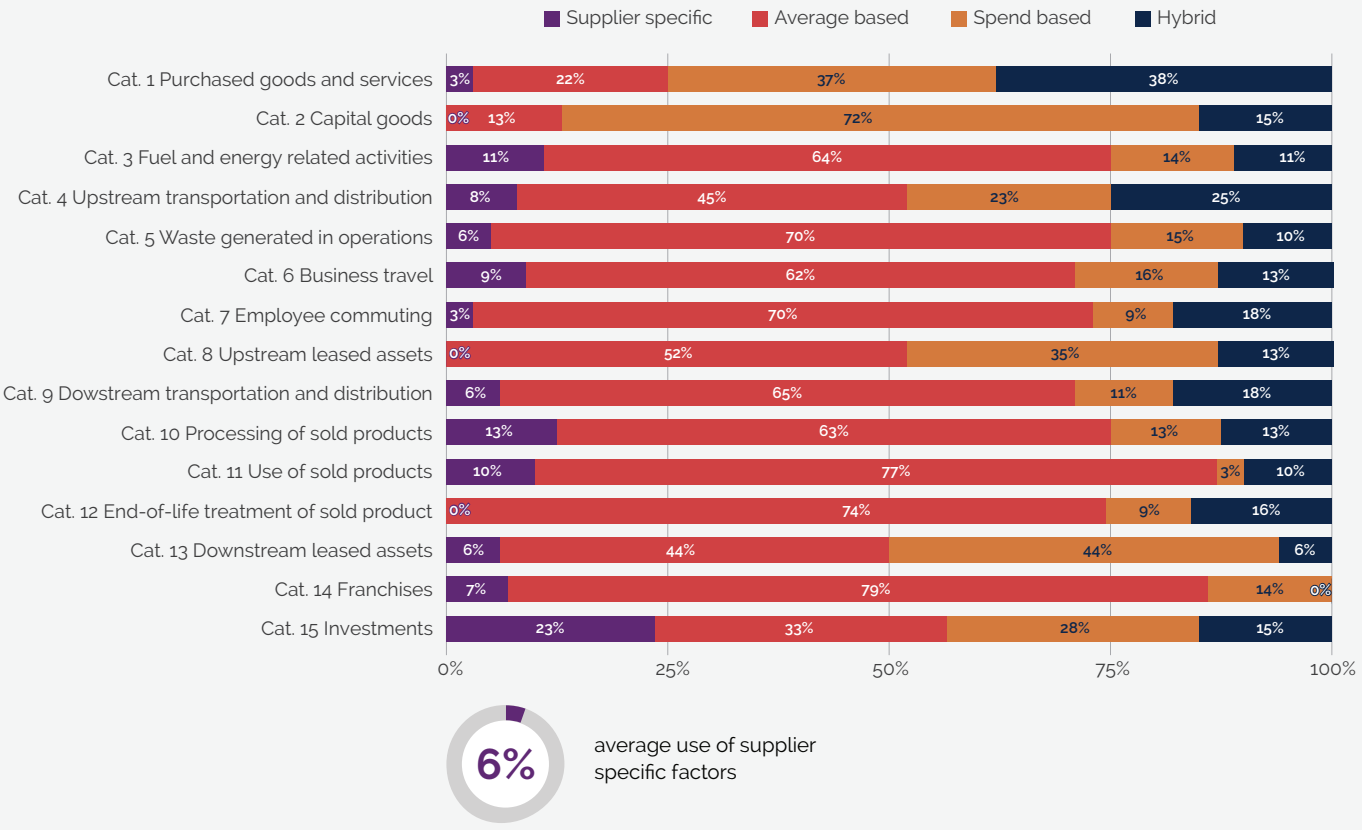
The choice of calculation method and emissions factors can result in significant variation in the company's scope 3 inventory. According to a report by the London Stock Exchange Group, over half of disclosed scope 3 values vary at least 20% year-on-year and over a third vary at least 50% year-on-year.[48] The decision to use one emissions factor database over another, for example, or to use a regional versus global emissions factor could significantly influence the size of a company's scope 3 inventory (see illustrative example from passenger car emissions below).

This variability in GHG accounting standards and the absence of more detailed guidelines may limit both the ability to accurately compare baseline emissions between two companies with similar conditions at the same point in time, as well as the ability to assess the progress of an individual company between two different points in time.

Limited availability of reliable data

As demonstrated in Figure 9, most companies currently rely on the average data or spend-based method to estimate scope 3 emissions, which often draw on low-quality secondary data from public databases. The use of secondary data can result in staticity of the reported scope 3 inventory over time, as changes in real-world emissions intensities of activities in a company's value chain (including as the result of mitigation efforts) are not reflected in global or industry average emissions factors.

Figure 9. Variability in GHG accounting approach used for baseline emissions.[49]



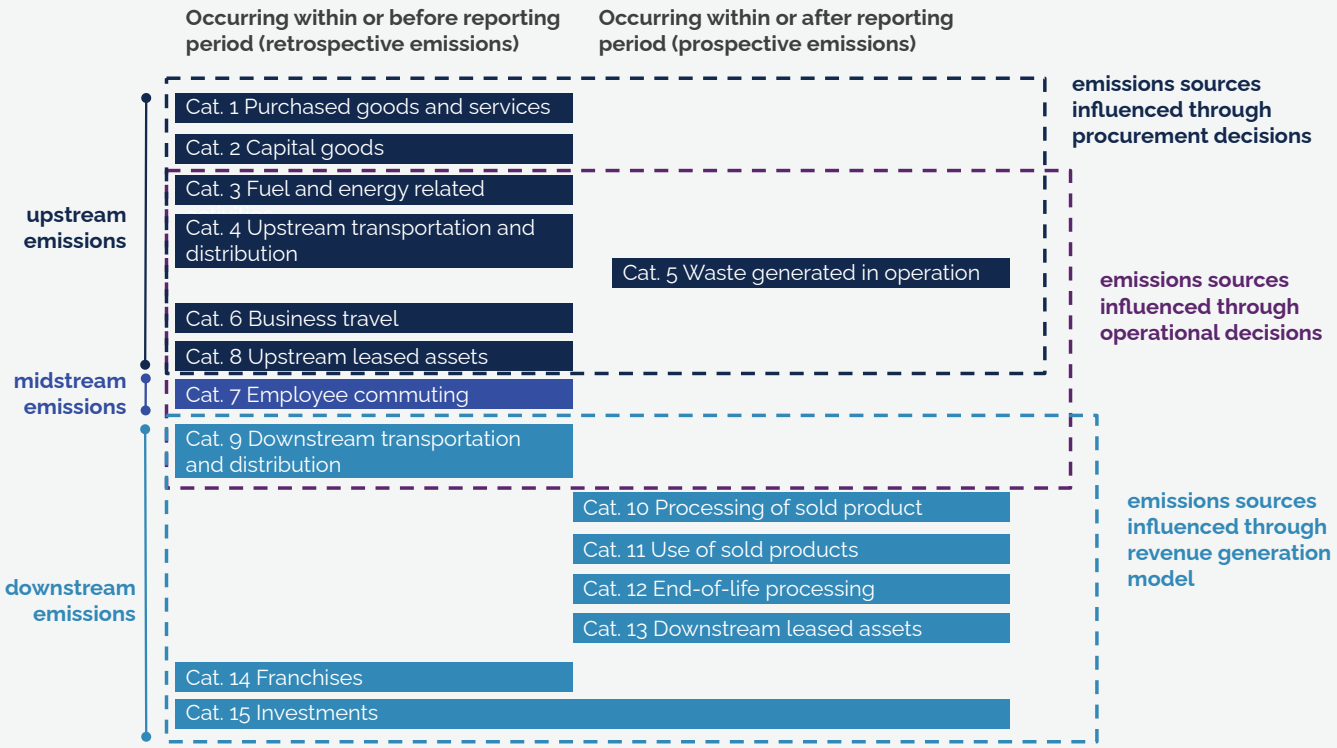
48 LSEG. (2024). Scope for Improvement: solving the scope 3 conundrum.
49 SBTi. (2023). Catalysing Value Chain Decarbonization: Corporate Survey Results.

Usability of an aggregated emissions metric

Scope 3 is an aggregate metric, which combines diverse emissions sources across 15 categories into a single metric. As such, it encompasses multiple, complex underlying components without distinguishing between their individual characteristics at the aggregate level.

Setting targets using an aggregated metric in this way may divert attention from specific relevant emissions sources and obscure important nuances between categories relating to the different time periods in which they occur (see Figure 10), the measurement approaches required and the specific mitigation levers available.

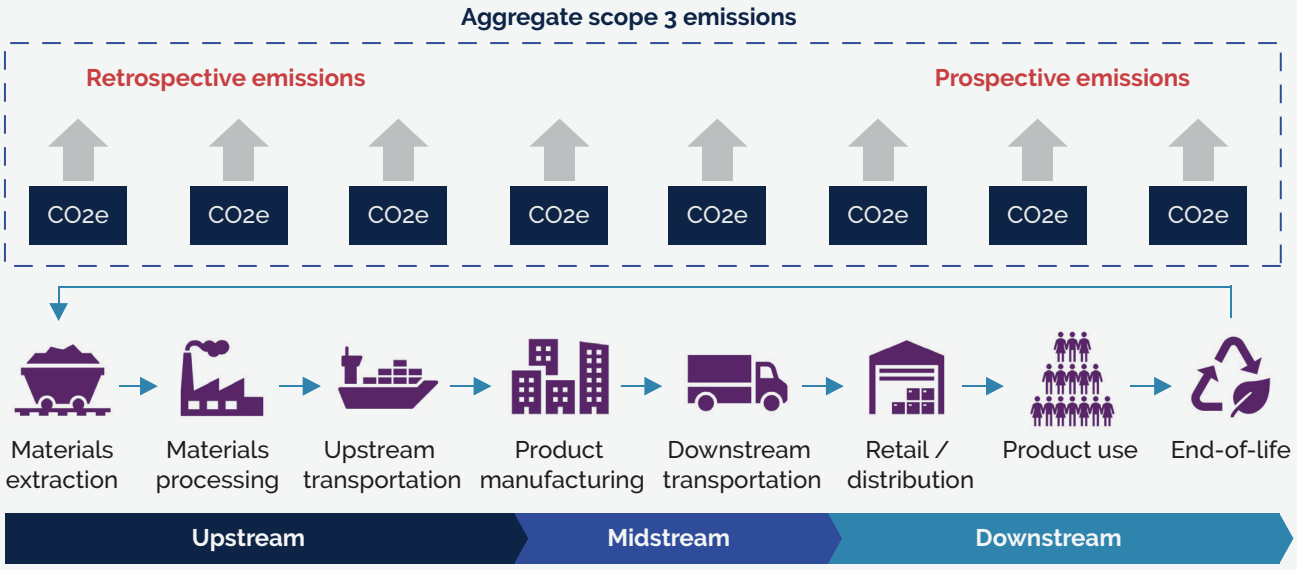
Figure 10. A visualization of the distinction between retrospective and prospective emissions across the scope 3 categories.



The time period in which emissions occur affects the calculations and underlying assumptions companies make when estimating emissions, subsequently affecting how progress can be tracked. As shown in Figure 10, upstream emissions that relate to purchasing activities, such as purchased goods and services (category 1) represent historic emissions from the extraction and production of materials embedded in a product and occur in the past or during the reporting year. Companies often use historical activity data, such as spend or volume purchased, combined with industry average intensities for the products and services sourced to calculate retrospective emissions. In contrast, emissions from downstream activities that are connected to revenue generation, such as use of sold products (category 11), are expected to occur in the future or during the reporting year. Calculating downstream emissions often relies on future projections such as the total lifetime of products, consumer use patterns and the way in which products are treated at end-of-life.

Across the 15 scope 3 categories, there are also different levers of influence that companies can use to address emissions, as shown in Figure 11. Upstream emissions sources might be influenced through procurement decisions, such as the products and services they purchase, which suppliers they choose to work with and the terms included in their supplier contracts and sourcing policies. Downstream emissions sources might be influenced through revenue generation decisions relating to what companies sell, how products and services are designed and how they engage with their customers.

Figure 11. Examples of variety of levers that may impact scope 3 emissions along the value chain



- Sourcing policies
- Contractual/ cascading arrangements
- Minimize use of energy-intensive/ emissions-intensive materials and services
- Shift to zero- or low-carbon materials and services
- Incentives, capacity building, finance mechanisms

- Business travel policies
- Remote work policies
- Waste minimization
- Optimization of energy use
- Switch to clean energy carriers

- Contractual arrangements
- Licensee or franchisee arrangements
- Minimization of direct and indirect energy use in sold products
- Shift to products that do not release GHGs during use-phase
- Use of materials that avoid / minimize GHGs at end-of-life
- Circular business models
- Maximization of product lifetime

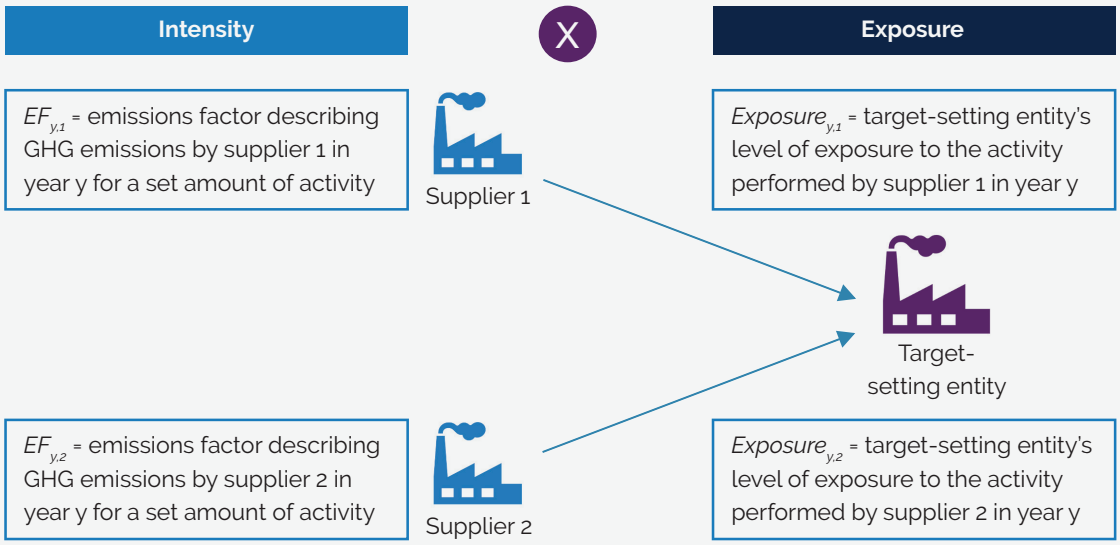
KEY CHALLENGE 2: LIMITATIONS WITH CURRENT TARGET-SETTING METHODS

Existing scope 3 target-setting methods using absolute emissions and emissions intensity require companies to first establish an emissions baseline. An expected rate of change over time is then applied, based on benchmarks derived from Paris-aligned emission trajectories.[50] As described below, this approach presents conceptual and practical challenges, which relate primarily to the difficulty in defining science-based benchmarks for scope 3, the volatility of the scope 3 metrics, and the limited nuance offered for activities that are already net-zero aligned.

Difficulty in defining science-based benchmarks for scope 3

Pathways derived from climate scenarios can be used to set science-based targets that define the rate of change in emissions over a given timeframe to reach the desired end state (i.e. net-zero emissions by 2050). For scopes 1 and 2, specific emissions pathways define the rate of change. For scope 3, however, the rate of change may not be obvious since scope 3 emissions most often represent the combination of two elements: i) the emissions intensity of a given emissions source (e.g. processing of a raw material), often represented by an "emissions factor", and ii) the level of exposure of a company to that emissions source (e.g. volume of raw material procured), often referred to as "activity data".[51]

Figure 12. Scope 3 emissions represent the combination of the emissions intensity of a given activity and the level of exposure of a company to that activity.



$$Scope\ 3_y = (EF_{y,1} \times Exposure_{y,1}) + (EF_{y,2} \times Exposure_{y,2})$$

As illustrated in Figure 12 above, companies can manage their scope 3 emissions through either decreasing the emissions intensity of the underlying source of emissions, or by reducing their exposure to that source. This makes it challenging to define a science-based rate of change for scope 3 emissions to reach net-zero.

50 For example, Company A might set a target to reduce absolute scope 3 emissions by 28% by 2030 from a 2020 base year, while Company B might set a target to reduce scope 3 emissions intensity per unit of revenue by 30% by 2030 from a 2017 base year.

51 GHG Protocol. Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

While the emissions intensity of a given activity can be informed by Paris-aligned emission trajectories that respond to a carbon budget allocation logic, such as those set out in the SBTi's Sectoral Decarbonization Approach (SDA), this logic does not necessarily extend to setting Paris-aligned trajectories for a company's exposure to the source of emissions.

Furthermore, scope 3 emissions for some categories may increase or decrease or do not exist in a reporting year due to the changes of exposure to a given activity (e.g. variation in volumes procured), without necessarily implying any real-world decarbonization of the underlying activity itself. Because of this, defining a science-based rate of change for scope 3 emissions towards reaching the desired net-zero performance is challenging, given that for one of the underlying elements – exposure – there is limited clarity in how to establish science-based thresholds for specific entities as they transition.

In addition, the aggregated scope 3 emissions metric combines categories of emissions that occur across different time periods, i.e. retrospective and prospective emissions. Using methods to set targets on aggregate scope 3 emissions at single points in time may cause some confusion, as real-world emissions across scope 3 categories are not occurring at the same point in time.

Metric volatility

A company's reported scope 3 GHG inventory can fluctuate significantly year-on-year due to the dynamic nature of value chains. Even with real-time access to perfect data, the aggregate scope 3 emissions metric is in constant flux due to changing market conditions, the types and volumes of materials used, supplier selection decisions, product portfolio adjustments and changing volumes of sales, among other factors. Even if it were conceptually accurate to set rate of change benchmarks on aggregated scope 3 metrics, the suitability of the scope 3 metric to accurately track progress against those benchmarks at a specific point of time would be limited due to the metric's volatility.

Limited nuance for net-zero aligned activities

Current methods, which depend on companies achieving scope 3 emissions reduction benchmarks over time, have been criticized for allocating the remaining emissions budget exclusively among existing companies and for penalizing new, more efficient companies that may legitimately grow emissions as part of the net-zero transition.[52] For example, companies developing solution technologies required for the net-zero transition, such as a photovoltaics company, could see their emissions grow in the near term.

Current target-setting methods based on reducing aggregate scope 3 emissions may therefore unintentionally disincentivize 1.5°C-aligned growth. By considering more holistic metrics, such as the alignment of the service, products, and investments with transition needs, there may be an opportunity to provide a more reliable assessment of a company's alignment with global climate goals.

52 Robiou du Pont, Y. et al. (2024). Corporate emissions targets and the neglect of Future Innovators, Science, 384(6694).

KEY CHALLENGE 3: LIMITATIONS WITH CURRENT APPROACH TO TARGET-SETTING BOUNDARIES

Potentially misleading target formulation

An unintended consequence of the flexibility offered within scope 3 target boundary setting is that it may have the potential to mislead stakeholders in relation to the emission reductions that the company intends to achieve.

The SBTi does not currently require companies to disclose the coverage of scope 3 emissions within its target language, but instead requires a description of the scope 3 emission categories covered by the target (see "ABC Corporation" example below). The required scope 3 target language is described in Table 1 of the Procedure for Validation of SBTi Targets as "*[Company name] commits to reduce absolute scope 3 GHG emissions from [name scope 3 categories] by [percent reduction]% by [target year] from a [base year] base year.*" Furthermore, if a target is covering a portion of all categories reported, it is not required to describe the categories covered by its scope 3 targets within the target language (see "XYZ Ltd." example below).[53]

Because the SBTi does not currently require companies to disclose the target boundary coverage within target language, company target language could potentially mislead stakeholders to believe that the total scope 3 emission reductions that will actually be achieved by the target are greater than they appear. This is demonstrated in the illustrative examples below.

53 SBTi. (2024). Procedure of Validation of SBTi Targets, version 1.1

Illustrative examples: Potentially misleading target formulation

ABC Corporation

ABC Corporation's SBTi-approved target language states that "ABC Corporation commits to reduce absolute scope 3 GHG emissions from purchased goods and services, capital goods, and business travel by 50% by 2030 from a 2020 base year". However, the emissions from the three emission categories described only cover 67% of emissions, which is not disclosed in the target language.

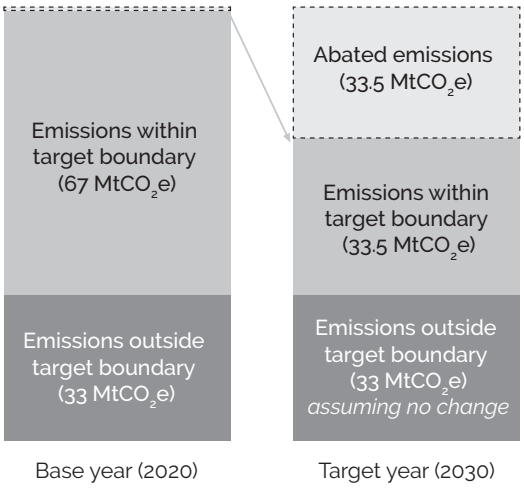
By including only 67% of its emissions within the target boundary, one third of its emissions may not be addressed. Assuming that the emissions excluded from the base-year target boundary stay the same, this would only lead to an actual reduction in total scope 3 emissions of 34%, rather than the 50% reduction that is stated in the target language.

XYZ Ltd.

XYZ Ltd.'s SBTi-approved target language states that "XYZ Ltd. commits to reduce absolute scope 3 GHG emissions by 20% by 2030 from a 2022 base year." The emissions covered by the scope 3 target cover 70% of scope 3 emissions across all categories, which is not disclosed in the target language.

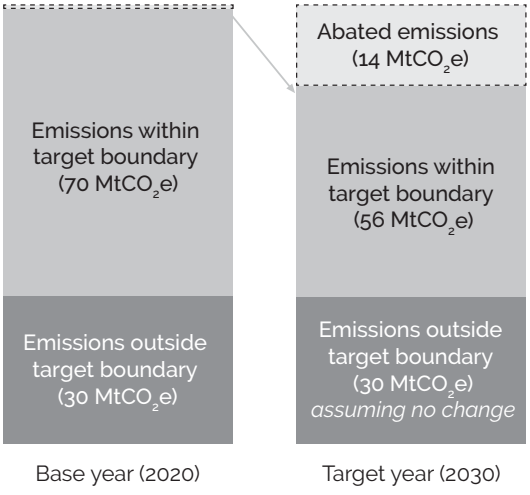
By including only 70% of its emissions within the target boundary, this means that 30% of its emissions are not addressed. Assuming that the emissions excluded from the base-year target boundary stay the same, this would only lead to an actual reduction in total scope 3 emissions of 14%, rather than the 20% reduction that is stated in the target language.

Figure 13. A visual representation of ABC Corporation's total scope 3 emission reductions when including 67% of base-year emissions within the target boundary.



50% reduction in emissions within the target boundary
34% reduction in total scope 3 emissions

Figure 14. A visual representation of XYZ Ltd.'s total scope 3 emission reductions when including 70% of base-year emissions within the target boundary.



20% reduction in emissions within the target boundary
14% reduction in total scope 3 emissions

Excluding emissions from the target boundary may lead to a potentially inaccurate representation of the emission reductions that the company aims for and reductions may appear more substantial than they actually are in comparison to the full GHG inventory. In light of recent regulatory developments and the increasing risk of climate litigation, the SBTi recognizes an opportunity to develop solutions to prevent potential misleading claims associated with the current scope 3 boundary approach.

Exclusion of high-climate-impact activities

The minimum 67% scope 3 target boundary may also lead to the potential exclusion of high-climate-impact activities. The SBTi's Corporate Net-Zero Standard provides complete flexibility in the emissions sources that are covered within the 67% minimum boundary. Therefore, emissions sources that are critical to address in the near-term for the net-zero transition could potentially be ignored.

The NewClimate Institute's 2024 Corporate Climate Responsibility Monitor identified that coverage of relevant emissions sources within company targets was a key issue with corporate climate targets.[54] This was either because there was a lack of transparency in target boundary coverage, and therefore it was unclear whether relevant emissions sources were included, or that relevant emissions sources were indeed not covered. This issue is illustrated in the example below.

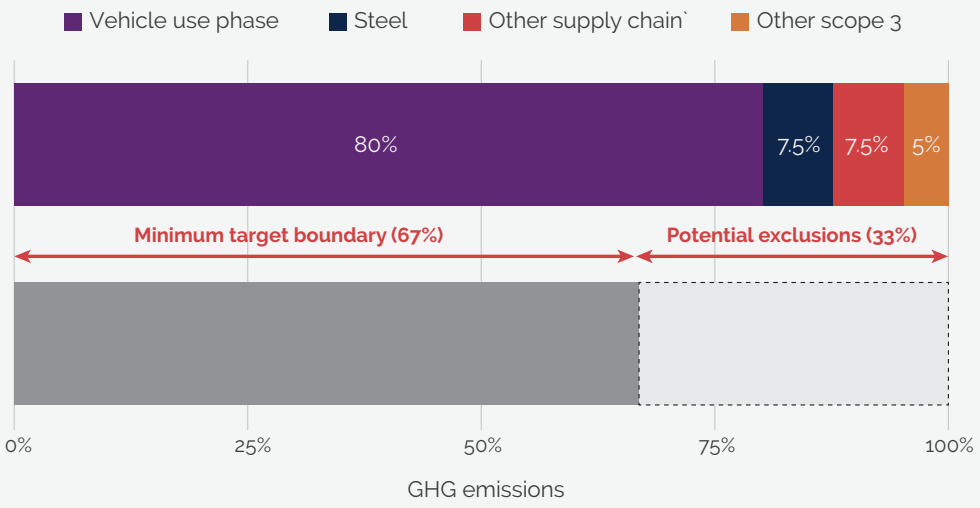
Illustrative example: Automaker

For an automotive company making internal combustion engine (ICE) powered vehicles, around 80% of scope 3 emissions may come from the "use phase" of these vehicles (scope 3, category 11: use of sold products). However, a significant source of the company's upstream emissions come from steel production (approximately 7.5%).[55]

Steel is a commodity that is critical to decarbonize in the transition towards net-zero, and essential for automakers to address to reach long-term net-zero goals.[56] The automaker sector is responsible for 12% of global steel consumption, and the second most significant end-user of steel behind the building sector.[57] Therefore it is important that companies in this sector send demand signals for low-carbon steel through their supply chains.

The SBTi's current minimum boundary of 67% could mean that automakers are not incentivized to address this critical source of emissions in sufficient time which could, in turn, have significant impacts for this important sector's transformation that would be necessary to align with a 1.5°C pathway.

Figure 15. A visual representation of an example automaker's GHG emissions footprint in comparison to the required minimum boundary requirements.



54 NewClimate Institute. (2024). Corporate Climate Responsibility Monitor 2024.
55 Greenpeace. (2023). Automobile Environmental Guide: 2023 Edition.
56 Greenpeace. (2023). Breaking The Mold: The Role of Automakers In Steel Decarbonisation.
57 Statista. (2024). Distribution of steel end-usage worldwide in 2022, by sector.

In addition, excluding emissions complicates comparisons with other entities. Some companies may omit the most material sources of scope 3 emissions in their inventories and focus on reporting sources that are easier to measure but less material. For example, business travel (scope 3, category 6) emissions are disclosed by 87% of companies that disclose scope 3 data, though it represents under 1% of total emission disclosed by all companies.[58] Depending on which emissions sources companies include in their inventory in the reporting year, and the calculation approaches used, certain less relevant categories may appear inflated relative to other categories and are therefore included in the target boundary over other potentially more material emissions sources.

Different emissions sources may also enter or leave the 67% boundary, which can further complicate companies' efforts to focus on relevant emissions sources in order to meet their targets.

Lack of clarity on how to increase the target boundary from 67% to 90% over time

While the SBTi's current target-setting boundaries provide a framework for companies to include a significant portion of their scope 3 emissions, the lack of clarity on transitioning from a minimum of 67% coverage in near-term targets to 90% coverage in long-term targets poses a challenge. This approach may lead to incompatibility of near-term targets with a long-term net-zero aligned trajectory.

As illustrated in the example below, excluding a greater proportion of emissions from the target boundary in the near term may result in companies having to course correct to reach their long-term targets. The SBTi is therefore interested in exploring how to integrate both near-term and long-term target boundaries effectively to ensure alignment of immediate efforts with future net-zero goal.

Illustrative example: Incompatibility of near-term and long-term target boundary thresholds

Acme Corporation has a scope 3 emissions footprint of 100,000 tCO_2e, and has set near-term scope 3 targets for 2030 and long-term targets for 2050 using a 2020 base year. Assuming that the company sets near-term and long-term targets with a consistent level of ambition in alignment with reducing emissions by 90% by 2050, the company aims to reduce its emissions at an annual rate of 3%. This results in a near-term target to reduce emissions by 30% by 2030 on the 2020 baseline.

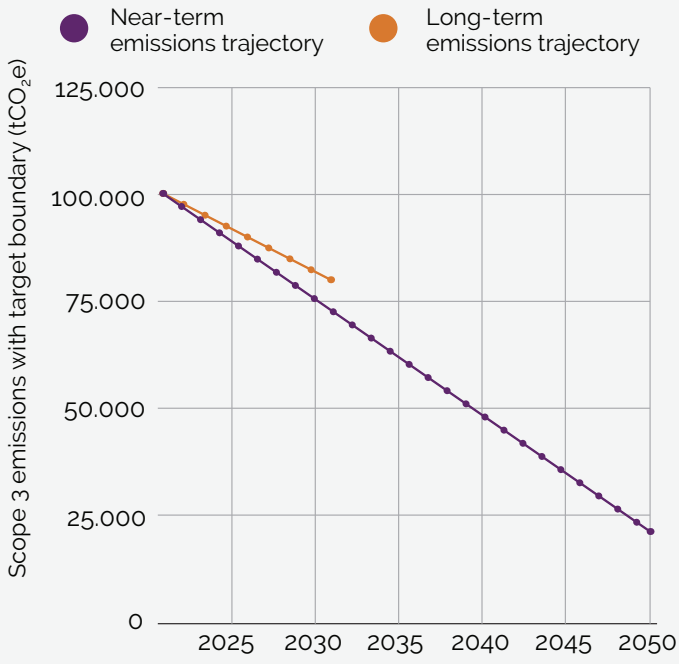


Figure 16. Illustrative example of the impact of different boundary thresholds between near-term and long-term targets on expected total scope 3 emissions.

58 LSEG. (2024). Scope for Improvement: solving the scope 3 conundrum.

This company sets its near-term targets using the minimum for 67% of its scope 3 emissions in the near term. As a result, and assuming that emissions excluded from the target boundary remain consistent, the company's total expected scope 3 emissions, including those outside of the 67% target boundary for 2030 are 79,900 tCO_2e.

When looking at the emissions trajectory to reach its long-term target, the expected emissions reductions at year 2030 including those outside of the 90% target boundary are 27,000 tCO_2e. This means that the total scope 3 emissions reduction as a result of the near-term reductions (20,100 tCO_2e) figure is 6,900 tCO_2e (26%)lower than the necessary reductions to align with the long-term trajectory. This therefore means that Acme Corporation would subsequently need to correct for this discrepancy in order to reach its long-term goal.

KEY CHALLENGE 4: LIMITED NUANCE AROUND LEVELS OF INFLUENCE AND APPROPRIATE LEVERS TO ADDRESS VALUE CHAIN EMISSIONS SOURCES

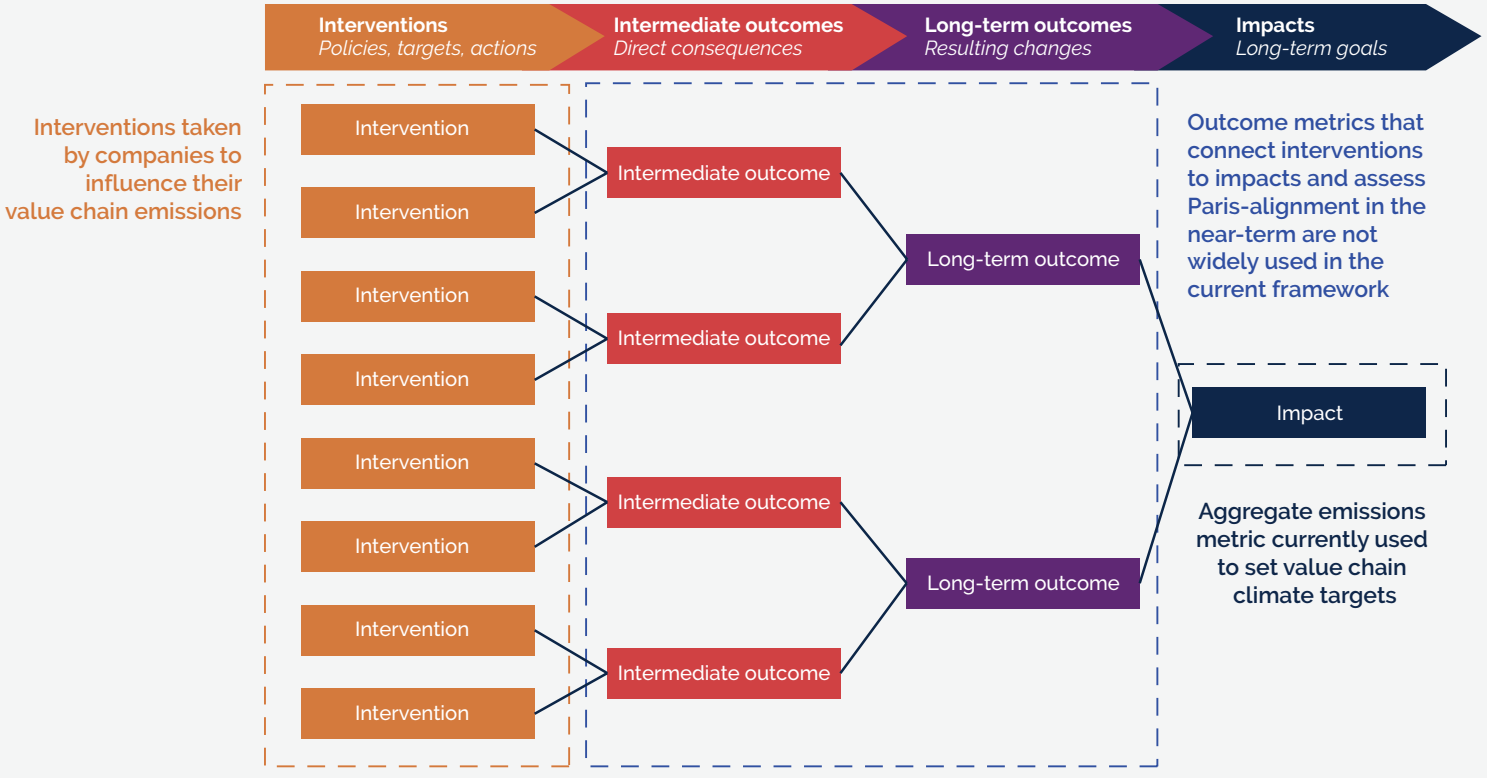
The SBTi's current approach to scope 3 target setting treats all emissions sources the same and does not take into account the varying degrees of influence available to companies to address emissions sources in their target boundary. Importantly, the climate impact of emissions sources may be decoupled from influence, i.e. there may be emissions hotspots within a company's value chain over which it has limited influence.

A company's capacity to influence emissions in its value chain may be determined by multiple factors, including whether the emissions source can be influenced directly through business decisions (e.g. product design choices, or buying from low-carbon sources) or through applying leverage to effect change in the practices of another party (e.g. consumer use of sold products, or decarbonization of supplier manufacturing processes). A company's ability to exercise leverage over other actors in the value chain may vary according to, for example, the market power of the company, the type of relationship between the target-setting entity and the value chain partner (direct vs indirect), the relative position of the target-setting entity in relation to the source of emissions (e.g. upstream vs. downstream emissions), and inherent challenges in abating a particular emission source (e.g. technological barriers).

KEY CHALLENGE 5: CHALLENGES IN ASSESSING PROGRESS TOWARDS VALUE CHAIN DECARBONIZATION TARGETS

Scope 3 accounting is intended to help companies understand their full value chain impacts.[59] Impacts refer to the long-term effects (direct or indirect, intended or unintended) on the climate produced as the result of an intervention.[60] Aggregate metrics like the scope 3 absolute GHG metric may therefore be useful in summarizing the long-term effects of multiple interventions in a single figure. However, they may be less effective in measuring the near-term effects, or "outcomes",[61] of targeted interventions taken by companies to address disaggregated sources of emissions in their value chain, which ultimately add up to drive a change in the overall impact metric. This may lead to an inability to accurately measure progress against targets and assess the alignment of companies' value chains with global climate goals in the near term. Consideration of a more holistic set of outcome-based metrics may represent an opportunity to provide a more reliable reflection of a company's overall climate ambition.[62]

Figure 17. The current scope 3 approach emphasizes impact metrics, which may appear disconnected from interventions and may not adequately reflect the outcomes of interventions.



59 GHG Protocol. Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

60 3keel. (2020). Performance metrics for key sustainability issues.

61 3keel. (2020). Performance metrics for key sustainability issues.

62 Robiou du Pont, Y. et al. (2024). Corporate emissions targets and the neglect of Future Innovators, Science, 384(6694).

ANNEX II: VALUE CHAIN DECARBONIZATION THEORY OF CHANGE

ANNEX II: VALUE CHAIN DECARBONIZATION THEORY OF CHANGE

DEFINING NET-ZERO GHG EMISSIONS AT THE GLOBAL LEVEL

There is well-established scientific consensus that anthropogenic GHG emissions, including emissions from energy, industrial activity, transportation and land-use are responsible for the accumulation of GHGs in the atmosphere and the resultant warming. In its Sixth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) estimates that human activities have contributed to approximately 1.07°C of global warming since pre-industrial levels.[63]

Human activity must be transformed significantly and rapidly to prevent further warming and limit the associated climate-related impacts for natural and human systems. This transformation involves reducing GHG emissions and scaling-up anthropogenic carbon dioxide removals to the point where human activities no longer contribute to the accumulation of GHGs in the atmosphere to achieve a state of net-zero emissions. The IPCC defines net-zero GHG emissions as the "condition in which metric-weighted anthropogenic GHG emissions are balanced by metric-weighted anthropogenic GHG removals over a specified period."[64]

The IPCC emphasizes that pathways to limit global warming to 1.5°C with no or limited overshoot necessitate rapid and extensive transformations across the entire economy, including energy, land, urban infrastructure and industrial systems. Aligning with these pathways requires deep emissions reductions in all sectors, deploying a broad array of mitigation strategies and significantly scaling up investments in these options. The IPCC highlights that options are available now in every sector that can at least halve emissions by 2030.[65]

DEFINING NET-ZERO GHG EMISSIONS AT THE VALUE CHAIN LEVEL

The European Financial Reporting Advisory Group (EFRAG) defines value chain as "the full range of activities, resources and relationships related to the undertaking's business model and the external environment in which it operates. A value chain encompasses the activities, resources and relationships that the undertaking uses and relies on to create its products or services from conception to delivery, consumption and end-of-life."[66] The Greenhouse Gas Protocol, the predominant standard used for accounting for corporate GHG emissions in their value chains, defines value chain as "all of the upstream and downstream activities associated with the operations of a company, including the use of sold products by consumers and the end-of-life treatment of sold products after consumer use."[67]

63 IPCC.(2021). Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis.
64 Annex VII: Glossary.
65 IPCC.(2023). Climate Change 2023: Synthesis Report.
66 EFRAG.(2024). EFRAG IG 2: Value Chain Implementation Guidance.
67 GHG Protocol. Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

In understanding that the concept of net-zero can also apply to entities, activities, commodities, products and services the scientific principles behind global net-zero can guide the definition of net-zero at the value chain level. A net-zero value chain means that all stages – from raw material extraction, through to production and distribution, to product use and disposal – must operate without resulting in the accumulation of GHGs in the atmosphere. Meeting this goal, aligned with the Paris Agreement, requires mitigation in line with pathways that limit global warming to 1.5°C with no or limited overshoot to reach net-zero by 2050.

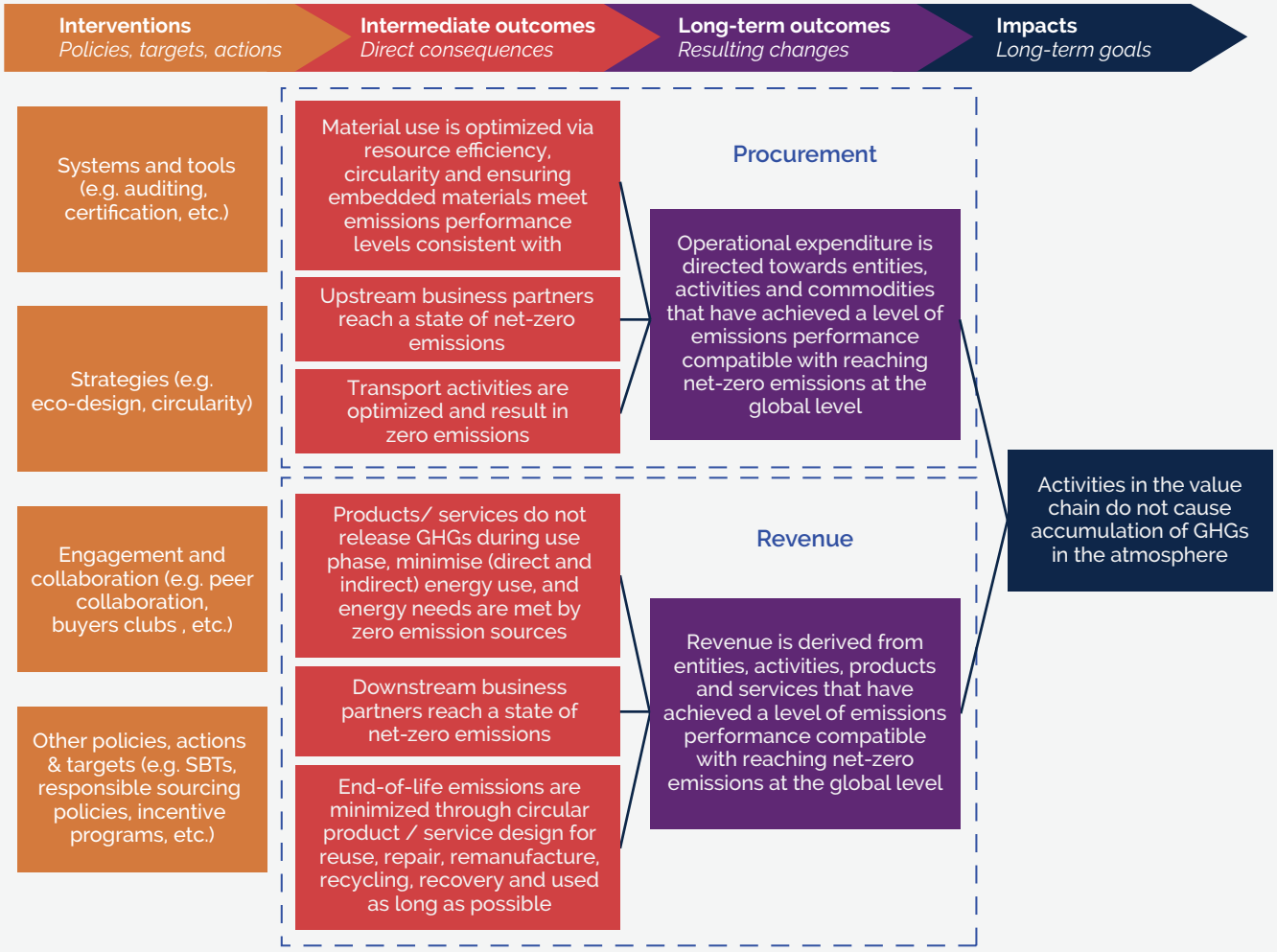
THE THEORY OF CHANGE BEHIND THE SBTi NET-ZERO VALUE CHAIN FRAMEWORK

To inform the potential evolution of scope 3 target setting, this paper introduces a high-level theory of change for value chain decarbonization. This theory of change defines a long-term goal, directly derived from global climate goals. Based on this long-term goal, a set of key outcomes have been identified to guide companies in determining interventions to achieve net-zero value chain emissions by 2050 at the latest. These key outcomes are also intended to define alternative metrics to measure, assess and communicate progress towards the long-term goal of reaching net-zero value chain emissions, potentially supplementing emission-based metrics and targets.

The high-level theory of change behind the framework presented in this paper focuses on outcomes covering two broad categories that account for the vast majority of value chain emissions: i) emissions from procurement activities (upstream emissions); and ii) emissions from the processing, use and disposal of products and services sold by companies (downstream emissions).

The theory of change is illustrated in Figure 18 below. Under this proposed framework a company is expected to implement interventions that lead to intermediate outcomes (i.e. direct consequences) and longer-term outcomes (i.e. significant changes in the company resulting from the intermediate outcomes) that in the end achieve the desired ultimate impacts (i.e. long-term goals as a result of the interventions). For example, to address emissions from procurement activities, a company might implement ecodesign interventions into product development. This in turn would drive the intermediate outcome of ensuring material use is optimized and meets performance levels consistent with net-zero. This would support achievement of the long-term outcome to direct operational expenditure towards entities, activities and commodities that have achieved a level of performance compatible with reaching net-zero. Achievement of this long-term outcome will subsequently drive progress towards the ultimate goal of ensuring procurement-related activities in the value chain do not cause accumulation of GHGs in the atmosphere.

Figure 18. The theory of change combines impact- and outcome-based metrics to drive 1.5˚C alignment in the value chain.



Apart from serving as a basis in the design of metrics to measure alignment with global climate goals, these long-term outcomes can also guide the design of strategies and targets to achieve these outcomes, as well as shorter-term actions to implement these strategies and to deliver on targets.

ANNEX III: PRELIMINARY THINKING ON OUTCOME-BASED ALIGNMENT METRICS

ANNEX III: PRELIMINARY THINKING ON OUTCOME-BASED ALIGNMENT METRICS

Metrics and target-setting methods play a pivotal role in the process of setting science-based targets as the foundation for defining, measuring, and tracking achievement against targets. The term "metric" refers to a quantifiable indicator to assess, manage, compare, and communicate the past, current, or intended climate-related performance of an organization.

Metrics can represent various aspects and can be expressed in terms of impact (e.g. GHG emissions released into the atmosphere) or outcome (e.g. percentage of electricity sourced from zero-carbon sources). Target-setting methods refer to a mathematical formula or algorithm that can be used to determine the benchmark, threshold, or desired performance of a counterparty using a relevant metric. These benchmarks serve as a reference for defining requirements for setting targets in SBTi Standards.

Informed by other frameworks (e.g. ISO Net-Zero Guidelines, European Sustainability Reporting Standards), the SBTi is currently evaluating a range of metrics in relation to best practices in several sectors and what is required globally to achieve the Paris goals.[68, 69, 70] These include both emissions-based metrics that measure "impact" and non-emissions-based metrics that measure "outcomes".

As defined in a report commissioned by the ISEAL Alliance, impacts are the "long-term effects (direct or indirect, intended or unintended) on the sustainability issue produced as the result of an intervention".[71] Outcomes are instead "the short-term and medium-term effects of an intervention on the sustainability issue in question".

Long-term impacts are achieved because nearer-term outcomes are met. Metrics that measure outcomes can give early signals into future performance against impact metrics and can therefore help to causally connect the immediate interventions companies take and the expected contribution towards reaching the desired long-term end-state.

SBTi standards already include several requirements focused on near-term outcomes, which have been widely adopted by companies (i.e. supplier engagement and renewable electricity targets). These approaches rely on "non-emissions-based" ways of assessing alignment with net-zero outcomes, using percentage progress towards performance benchmarks.

68 ISO. (2022). Net-zero Guidelines, 42:2022.

69 European Union. Regulation (EU) 2023/2772 of the European Parliament and of the Council of 31st of July supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards.

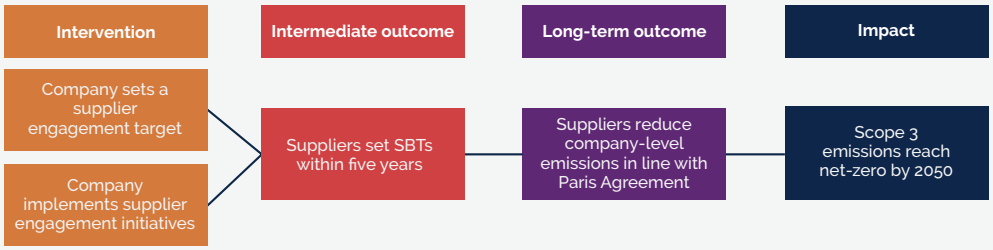
70 Robiou du Pont, Y. et al. (2024). Corporate emissions targets and the neglect of Future Innovators, Science, 384(6694).

71 3keel. (2020). Performance metrics for key sustainability issues.

Examples of the SBTi's existing use of outcome metrics

Percentage of suppliers and/or customers setting science-based targets.
Companies setting scope 3 targets using the SBTi Corporate Net-Zero Standard can use the "engagement target" method, which focuses on engaging a defined set of suppliers or customers in the near term to set their own science-based targets on all applicable scopes and categories.[72] This method is already used in approximately 14% of scope 3 targets and follows its own theory of change.

Figure 19: Supplier engagement as an outcome-based approach and its theory of change.

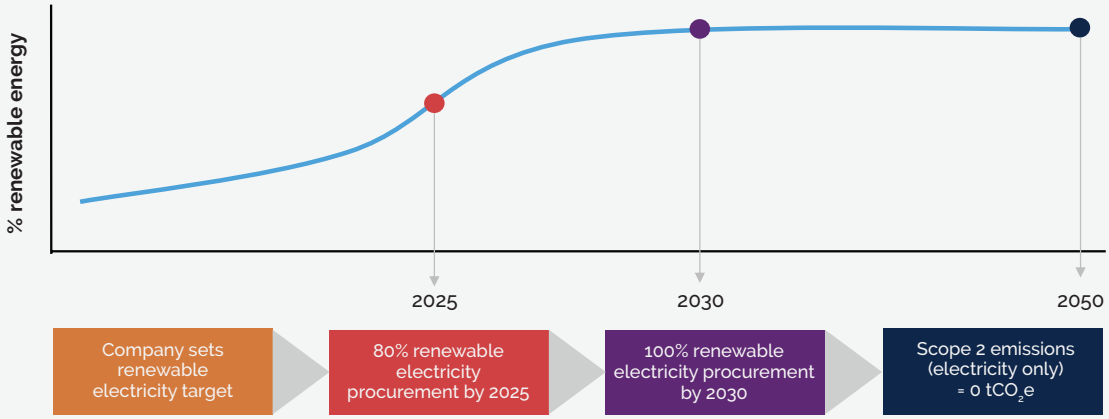


The key metric used to track progress against the mid-term outcome is the percentage of suppliers or customers that have set their own science-based targets. This approach to setting targets and tracking progress enables companies to influence decarbonization efforts within their value chains and provides a "non-emissions-based" alternative metric to using the aggregated scope 3.

Percentage of renewable electricity sourcing (scope 2)

The SBTi's Corporate Net-Zero Standard provides the option for companies to set near-term targets to actively source renewable electricity at a rate consistent with 1.5°C scenarios..[73] his approach uses thresholds in line with the recommendations of RE100 to set the expected rate of change, for example 80% renewable electricity procurement by 2025, 100% by 2030, and maintenance of 100% renewable electricity procurement beyond 2030.[74]

Figure 20: Renewable electricity targets track percentage procurement over time.



72 SBTi. (2023). Engaging Supply Chain on the Decarbonization Journey, version 1.0

73 SBTi. (2024). Corporate Near-term Criteria, version 5.2

74 RE100 guidance states that setting a 100% renewable electricity target by 2030 at the latest shows a strong level of leadership. Source: RE100. (2024).4RE100 Reporting Guidance 2024, version 8.0

METRICS TO MEASURE ALIGNMENT WITH GLOBAL CLIMATE GOALS

To support a science-based approach to value chain target setting, the outcomes introduced as part of the updated target-setting framework must lead to measurable transformation consistent with limiting warming to 1.5°C and credible, evidence-based claims. For the purpose of this paper, we use the term "alignment" to mean consistency with achieving net-zero emissions by 2050, in line with limiting global warming to 1.5°C by 2100. Aligning value chains with climate goals involves incentivizing both demand-side measures (i.e. procurement activities) and supply-side measures (i.e. revenue generation activities).

On the demand-side, this paper considers how to incentivize companies to align their purchasing of high-climate-impact activities and materials (such as cement, steel, etc.) with global climate goals. Whenever relevant, it is important to establish targets or policies to reduce emissions from the use of these commodities (e.g. through material efficiency, switching to lower carbon alternatives, etc.) or to source these commodities from aligned suppliers.

On the supply-side, this paper considers how to focus company action on reducing emissions from all products or services that either directly generate emissions in their use, or indirectly generate emissions to ensure that all products and services become aligned over time.

The degree of alignment of a value chain could therefore be understood in terms of the extent to which both upstream procurement and downstream revenue are aligned with 1.5°C outcomes. The intended final outcome is that operational expenditure is directed towards, and revenue is derived from, entities, activities, commodities, products and services that have achieved a level of emissions performance compatible with reaching net-zero emissions at the global level.

What qualifies as aligned also changes over time, as the entities and activities in the value chain have to decarbonize along 1.5°C pathways and reach a net-zero emission performance level by 2050. Therefore, what it takes for an entity or activity to be aligned today will be different from what it takes to be aligned in 2040.

According to this model, the percentage of upstream and downstream activities that are aligned should increase gradually over time to 100% by 2050 at the latest. As the share of procurement from aligned sources and share of revenue from aligned products and services increases, the impact of these outcomes will be reflected as a reduction in overall scope 3 emissions over time (i.e. the impact metric).

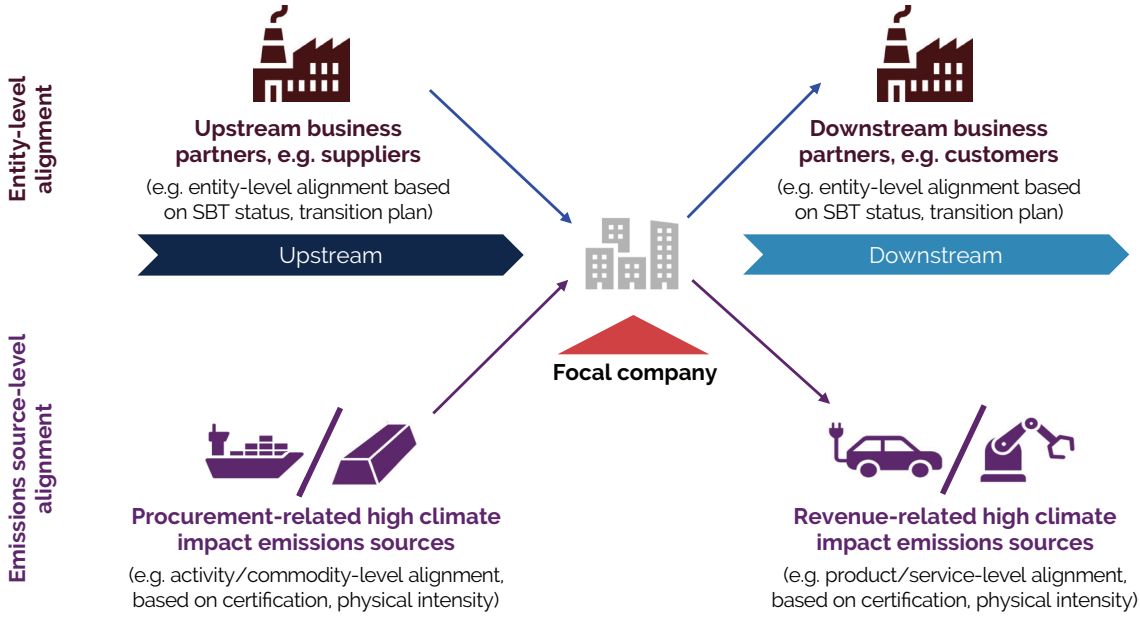
Progress against outcome-based alignment can therefore be utilized to forecast likely changes in the impact-based metrics (i.e. scope 3 emissions). This provides early signals of potential shifts in scope 3 emissions in the future with the advantage that it enables stakeholders to use actionable, tangible outcome-based metrics and targets that can be adjusted and tracked easily in the short term to achieve the desired long-term impact.

CONSIDERING ALIGNMENT WITH GLOBAL CLIMATE GOALS AT THE ENTITY AND EMISSION SOURCE LEVELS

For the purpose of this paper, we consider value chain alignment at two levels; the entity level and the emission source level:

- Alignment of the **entities** with which the company has a business relationship (e.g. suppliers or customers).[75] An entity might be considered to be aligned if it has a credible entity-level ambition consistent with limiting warming to 1.5°C and is transitioning towards or has reached a net-zero end state in alignment with the requirements of SBTi Standards. Alignment at the entity level might be assessed based on the ambition and eventual progress against targets.
- Alignment of the specific **emissions source** (commodities, products, services and activities) that comprise a company's value chain. An emissions source might be considered to be aligned if it is transitioning towards or has reached an end state of net-zero lifecycle emissions at a rate consistent with limiting warming to 1.5°C. Alignment at the emissions source level might be assessed based on low-carbon certification or against appropriate physical intensity benchmarks that are aligned with sector or product specific science-based pathways.

Figure 21. Value chain alignment could be assessed at both the entity and emissions source level.

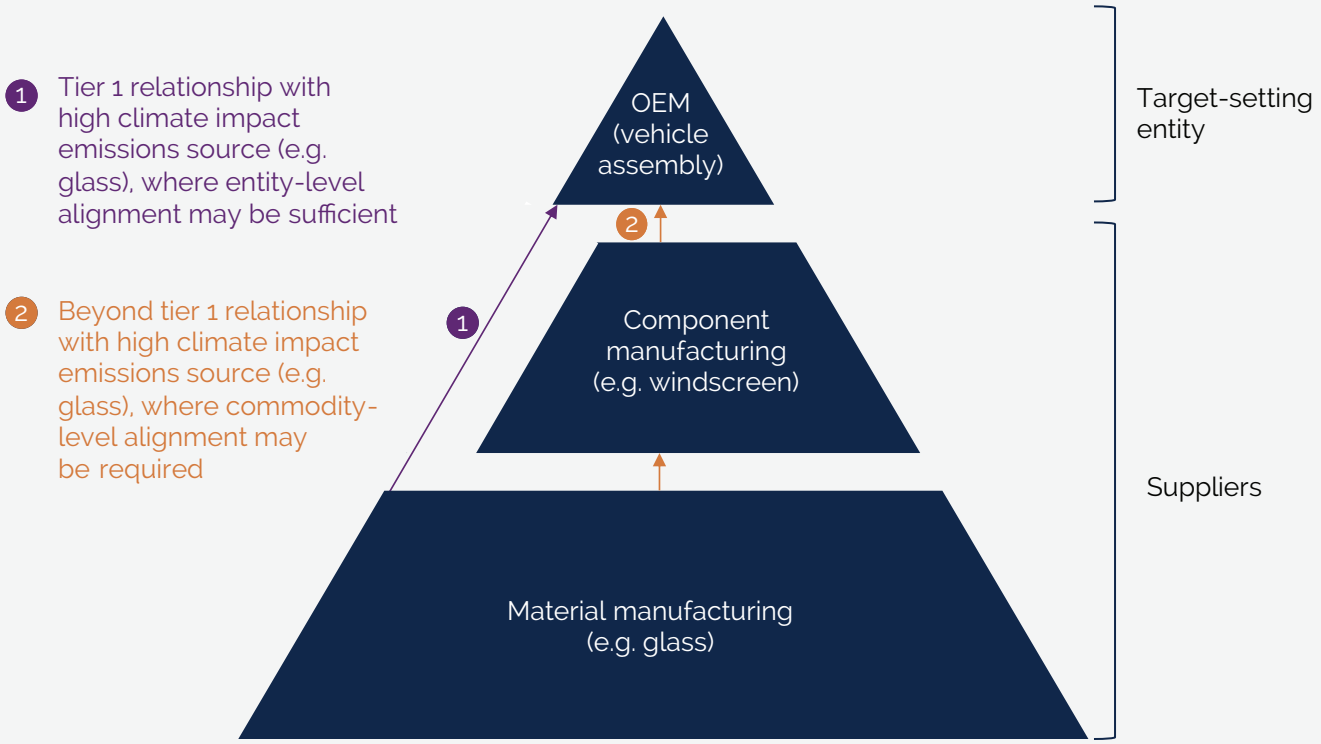


75 ANNEX to the Commission Delegated Regulation (EU) .../... supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards defines business relationships as "The relationships the undertaking has with business partners, entities in its value chain, and any other non-State or State entity directly linked to its business operations, products or services. Business relationships are not limited to direct contractual relationships. They include indirect business relationships in the undertaking's value chain beyond the first tier, and shareholding positions in joint ventures or investments.' Source: Council of the European Union. (2023). Interinstitutional File 2021/0104(COD), ANNEX to the Commission Delegated Regulation (EU) .../... supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards.

In order to measure value chain alignment, outcome-based metrics could be used to assess the alignment of both the focal company's business relationships (initially focusing on tier one suppliers and customers) and at the specific emissions source level for high impact emissions sources identified deeper in their value chains.

Where a company identifies high-climate-impact emissions sources in its direct business relationships (e.g. purchasing glass directly from a tier one supplier), it may be sufficient for the target-setting entity to simply assess the alignment of the entity where the emissions source occurs. However, if the high-climate-impact emissions source occurs beyond a direct business relationship (e.g. the company purchases a windscreen, of which glass is a component), the target-setting entity may need to ensure alignment at the level of the specific commodity, product, service or activity. The example of purchasing glass by an automotive supplier is illustrated in Figure 22 below.

Figure 22. Simplified example of an automotive supplier pyramid and application of potential entity-level and emissions source-level alignment approaches.



EXPANDING THE USE OF OUTCOME METRICS

In a fully decarbonized value chain, each step in the provision of all company's goods and services achieves a level of emissions compatible with achieving a climate stable net-zero economy. The disaggregation of relevant scope 3 emissions sources and assessment of climate impact, could enable sharper focus on driving and measuring outcomes that directly address high-climate-impact emissions sources across the value chain, thereby aligning a company's value chain with 1.5°C outcomes.

The final selection of potential outcome metrics to measure alignment must follow a rigorous process to assess their suitability. In the following table we provide some examples of potential outcome metrics for further exploration.

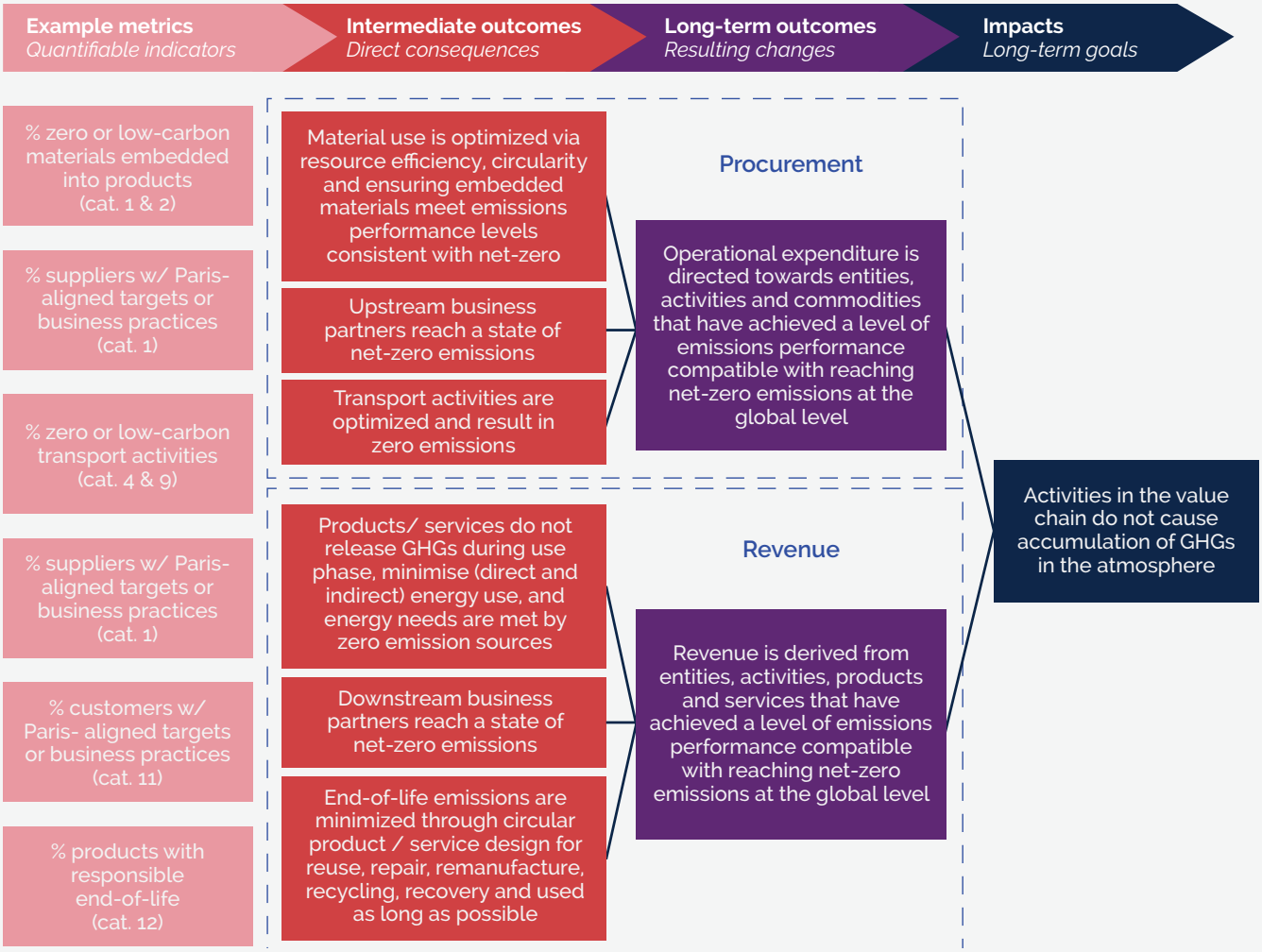
Table 5: Description of potential outcome metrics for further exploration.

METRIC TYPE	METRIC	APPLICABLE CATEGORY	UNITS	DEFINITION
Impact	Absolute scope 3 emissions	Can be aggregated across categories or disaggregated by category/ activity	Tonnes CO_2 equivalent	Measures the total annualized absolute scope 3 GHG emissions
Impact	Average scope 3 emissions intensity	Can be aggregated across categories or disaggregated by category/ activity	Tonnes CO_2 equivalent per unit of measure (e.g. $ revenue)	Measures the total annualized absolute scope 3 emissions per unit of measure
Outcome	Supplier science-based target coverage	Supplier related upstream scope 3 categories	Percent suppliers with SBTs	Measures the share of suppliers with SBTs, relative to all suppliers in the portfolio
Outcome	Customer science-based target coverage	Customer-related downstream scope 3 categories	Percent customers with SBTs	Measures the share of customers with SBTs, relative to all customers in the portfolio

METRIC TYPE	METRIC	APPLICABLE CATEGORY	UNITS	DEFINITION
Outcome	Zero- or low-carbon materials coverage	Purchased goods and services	Percent materials procured from zero- or low-carbon sources	Measures the share of materials meeting zero- or low-carbon requirements (e.g. certification or emissions intensity performance benchmarks), relative to all materials purchased
Outcome	Zero- or low-carbon products coverage	Use of sold products	Percent products that are zero- or low-carbon	Measures the share of products meeting zero- or low-carbon requirements (e.g. certification or emissions intensity performance benchmarks), relative to all products
Outcome	Zero or low-carbon transportation activity share	Upstream transportation and distribution; downstream transportation and distribution	Percent transportation carried out with zero- or low-carbon activities	Measures the share of transportation activities carried out with zero- or low-carbon activities, relative to all transportation activities
Outcome	Zero- or low-carbon business travel	Business travel	Percent business travel carried out with zero- or low-carbon activities	Measures the share of business travel activities carried out with zero- or low-carbon activities, relative to all business travel activities
Outcome	Responsible end-of-life options	End-of-life treatment of sold products	Percent products with responsible end-of-life options	Measures the share of products with responsible end-of-life options, relative to all products

The examples set out in Figure 23 below provide illustrations of how these might be used to measure progress towards upstream and downstream-related outcomes in the theory of change. As scope 3 categories 1 (purchased goods and services) and 11 (use of sold products) represent 84% of reported emissions, the example metrics below focus on these two categories.[76] Scope 3 category 4 (upstream transportation and distribution) is also included as an illustration of a potential high-climate-impact activity.

Figure 23. Example metrics to measure progress towards outcomes in the theory of change.



76 World Economic Forum. (2023). The "No-Excuse" Opportunities to Tackle Scope 3 Emissions in Manufacturing and Value Chains; derived from CDP data, Source: Extracted from CDP and Capgemini Invent, From Stroll to Sprint: A Race Against for Corporate Decarbonization, July 2023; CDP, CDP Technical Note: Relevance of Scope 3 Categories by Sector, 2022.

ESTABLISHING SCIENCE-BASED TARGETS USING OUTCOME METRICS

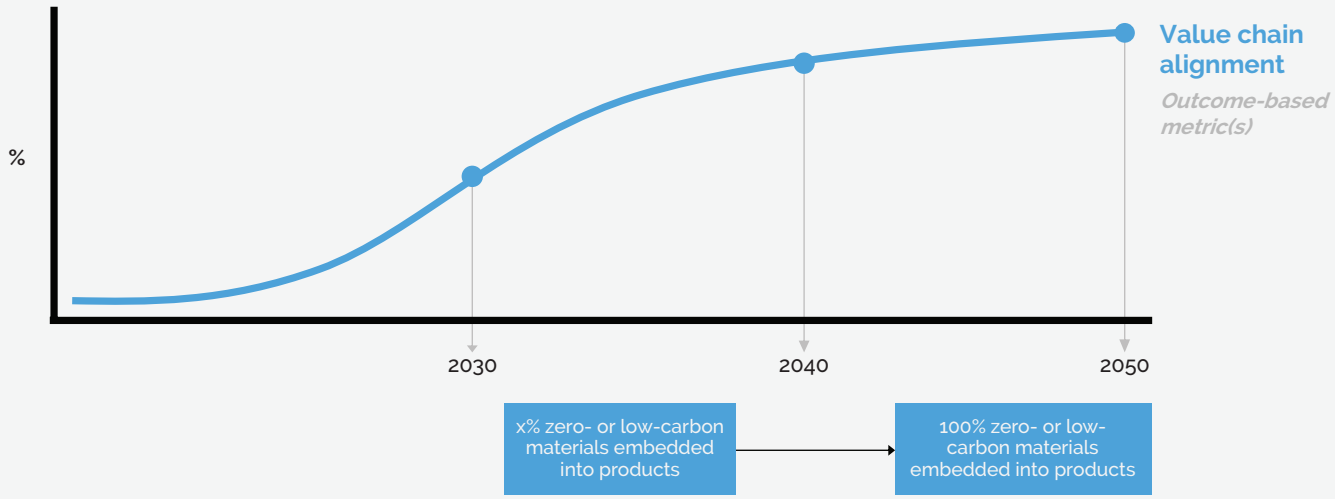
Pathways derived from climate scenarios can be used to set science-based targets that define the rate of change in emissions over a given timeframe to reach the desired end state (i.e. net-zero emissions by 2050). Because scope 3 emissions are a function of both emissions intensity and exposure there may not, however, be a clear method for defining a science-based rate of change for scope 3 emissions.

This paper explores the use of outcome-based metrics as an actionable way to measure the extent to which a given emissions source (e.g. material production, product use, transport type) or entity (e.g. supplier, customer) in a company's value chain has a level of climate performance consistent with limiting warming to 1.5°C. For value chain targets, a method must then be applied to define the future benchmarks by when the target-setting entity must ensure all activities and entities are aligned, as measured using outcome metrics. A science-based end state is clearer to define, as all value chain activities would need to have achieved net-zero by 2050.

Interim benchmarks, however, may be less obvious. While science can tell us the timeline and the shape of the emissions curve, it may not provide the requisite understanding of how companies should act to address their emissions. For many outcome metrics, such as the share of procurement spend going to suppliers with science-based targets, or the share of high-emitting commodities that are net-zero certified, the benchmarks for determining future performance levels may not be directly derived from climate science. This is due to the exposure element being directly incorporated into the outcome metric. The benchmarks for these outcome metrics may need to be informed by other theories of change of how to drive action across value chains.

This paper explores potential methods for alignment for value chains, which are likely to vary depending on the outcome metric. This area requires further research. One example approach could be to adopt an s-curve model of change to set performance benchmarks, as illustrated in Figure 24.

Figure 24. Example of s-curve model to set rate of change performance benchmarks for percentage aligned materials embedded into products.



ANNEX IV: PRIORITIZING ACTIVITIES IN HIGH-CLIMATE-IMPACT SECTORS

ANNEX IV: PRIORITIZING ACTIVITIES IN HIGH-CLIMATE-IMPACT SECTORS

Certain commodities, products, services and activities that have a high emissions intensity, and degradation of carbon sinks, are associated with relatively higher climate impacts and merit greater attention in climate strategies.[77] The SBTi wants to ensure that activities that are most important for the global transition to net-zero are addressed and is therefore exploring the option of assessing the value chain emissions against those activities that are determined to be critical for this transition.

To enable a clearer understanding of climate impacts, it is useful to break down the GHG inventory at a more granular level, looking at emissions from specific activities and resources that make up each scope 3 category. For example, a company could break down its emissions from business travel emissions (scope 3, category 6) at the activity level into flights, trains, buses and passenger cars. Companies typically calculate emissions at an activity level (as a function of activity multiplied by the relevant emission factor) so this is simply a matter of disaggregating these emissions.

To enable this assessment, the SBTi could provide tools or guidance on activities, as well as hard (i.e. extracted) and soft (i.e. cultivated) commodities, that are deemed to have a high climate impact. There are various sources that have identified what might be considered to be high-climate-impact emissions sources, for example:

- The EU Technical Expert Group on Sustainable Finance's 2019 report defined nine high-climate-impact sectors.[78]
- CDP identifies a list of high-impact sectors alongside their most relevant scope 3 categories in a 2024 Technical Note.[79]
- The Science Based Targets Network has compiled a list of high-impact commodities and classified these by their "material pressures", including climate change.[80]

The consultation draft of the SBTi Financial Institutions Net-Zero Standard (FINZ) provides a model for identifying and prioritizing high-climate-impact value chain emissions. Drawing on the IEA's CO2 Emissions in 2022 report, the FINZ draft includes "emissions intensive" sectors and activities.[81, 82] Given their significant contribution to global emissions of approximately 70%, the FINZ Standard draft requires financial institutions to include any financing activities associated with these sectors within their target boundaries, subject to an exclusion threshold of a contribution of 5% of emissions.

77 OECD, (2023). Managing Climate Risks and Impacts Through Due Diligence for Responsible Business Conduct: A Tool for Institutional Investors.
78 EU Technical Expert Group on Sustainable Finance. (2019). TEG Final Report on Climate Benchmarks and Benchmarks' ESG Disclosures.
79 CDP. (2022). CDP Technical Note: Relevance of Scope 3 Categories by Sector.
80 Science Based Targets Network. (2023). High Impact Commodity List, version 1
81 IEA. (2023). CO_2 Emissions in 2022.
82 The nine sectors included in the FINZ Standard draft are cement, oil and gas, power generation, steel, automotive, aviation, shipping and buildings.

ANNEX V: OVERVIEW OF ENVIRONMENTAL ATTRIBUTE CERTIFICATES AND CHAIN OF CUSTODY MODELS

ANNEX V: OVERVIEW OF ENVIRONMENTAL ATTRIBUTE CERTIFICATES AND CHAIN OF CUSTODY MODELS

COMMODITY CERTIFICATES

Some of the most commonly used certificates employed by corporations to substantiate climate-related claims include:

1. **Energy certificates**: There are a variety of certificates for different energy carriers that either convey the emissions profile of the energy carrier directly or provide characteristics that help define the emissions profile, such as the type of feedstock source (e.g. in the case of gas, liquid, or solid fuels), or the type of technology employed (e.g. in the case of electricity). Some of the most commonly used energy certificates include:
    - **Electricity**: Renewable electricity certificates or Guarantees of Origin (GOs) establish that an amount of electricity has been generated from renewable or other zero emissions sources, helping companies substantiate claims related to zero emissions electricity use.
    - **Gas**: Certificates such as Renewable Gas Certificates (RGCs) or Green Gas Certificates verify that the gas has been sourced from renewable or low-carbon sources, like biogas or synthetic methane.
    - **Hydrogen**: Green hydrogen certificates verify that hydrogen has been produced from renewable sources or through low-carbon processes.
    - **Biofuels**: Biofuel certification establishes that biofuels meet specific sustainability and emissions reduction criteria, aiding companies in validating their use of renewable fuels.
    - **Sustainable aviation fuel (SAF)**: As a type of biofuel, SAF certificates verify that aviation fuel has been produced from renewable sources and meets sustainability criteria.
2. **Agricultural commodity certificates**: These include certifications that provide assurance that agricultural products have been produced in a sustainable way, enabling either zero-deforestation or other environmental claims.
3. **Industrial commodity certificates**: These encompass certifications for materials such as steel, aluminum and cement, which may include verification that these industrial commodities have been produced from sources that have reached a level of emissions performance compatible with Paris-aligned trajectories.

CARBON CREDITS

The following section describes the different types of carbon credits by type of mitigation outcome:

Avoidance credits

Avoidance credits[83] refer to certificates issued from activities that prevent potential future emissions compared to a counterfactual baseline scenario.[84] The amount of credits eligible for issuance in any given year results from comparing the emissions performance of an activity with the level of emissions in the counterfactual scenario in that year. For instance, a greenfield zero- or lower-carbon electricity project may generate carbon credits provided that, in the absence of revenue from the sale of carbon credits, a higher emissions alternative would have been built and operated instead. According to the University of Oxford's Smith School of Enterprise and the Environment, avoided or emission reduction credits represent over 80% of credits issued in 2023.[85]

Emission reduction credits

Emission reduction credits refer to certificates issued from activities that reduce GHG emissions compared to the emissions in a reference or base year. The amount of credits eligible for issuance in any given year, result from comparing the emissions performance of an activity in a given year with the level of emissions in the base year. Examples of activities that generate emission reduction credits include energy efficiency measures (e.g. in buildings or industrial processes) or switching from higher-carbon to lower-carbon fuels.

Figure 25. An illustration of how avoidance credits function.[86]

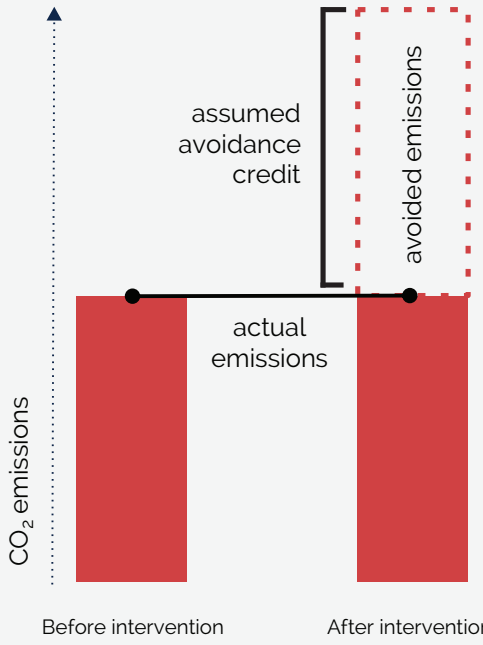
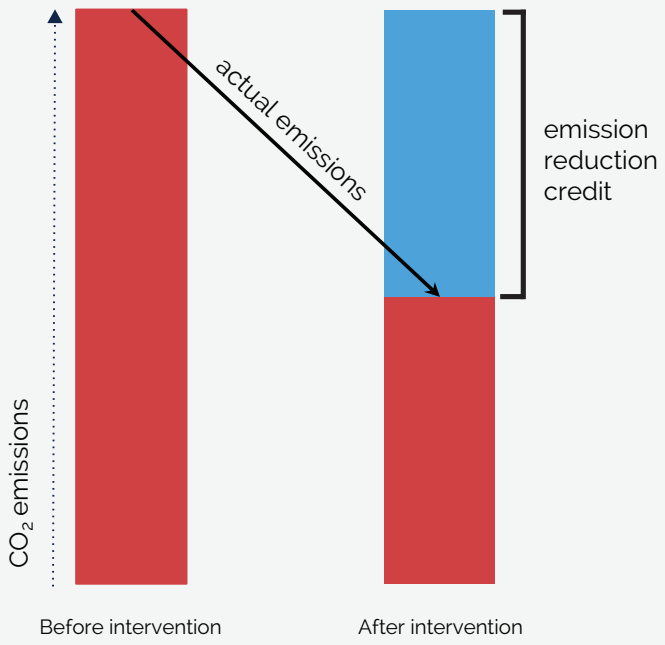


Figure 26. An illustration of how emission reduction credits function.[87]



83 While this section discusses the use of instruments in voluntary frameworks, it is worth noting that in the context of the United Nations Framework Convention on Climate Change (UNFCCC), Parties recently agreed to defer discussion on whether emission avoidance could qualify for crediting in Article 6.2 and 6.4 until 2028, while clarifying that emission avoidance is not permitted under Article 6.

84 The word "avoidance" is used in a number of different contexts. "Avoid" is the first step in the mitigation hierarchy and due diligence frameworks, signaling that companies should first take measures to prevent an impact from occuring in the first place (e.g. manufacture of zero emission vehicles instead of internal combustion engines). However, in this context, "avoidance" refers to comparing the emissions performance of an activity against the emissions level in a hypothetical counterfactual scenario.

85 Smith S.M. et al. (2024). The State of Carbon Dioxide Removal

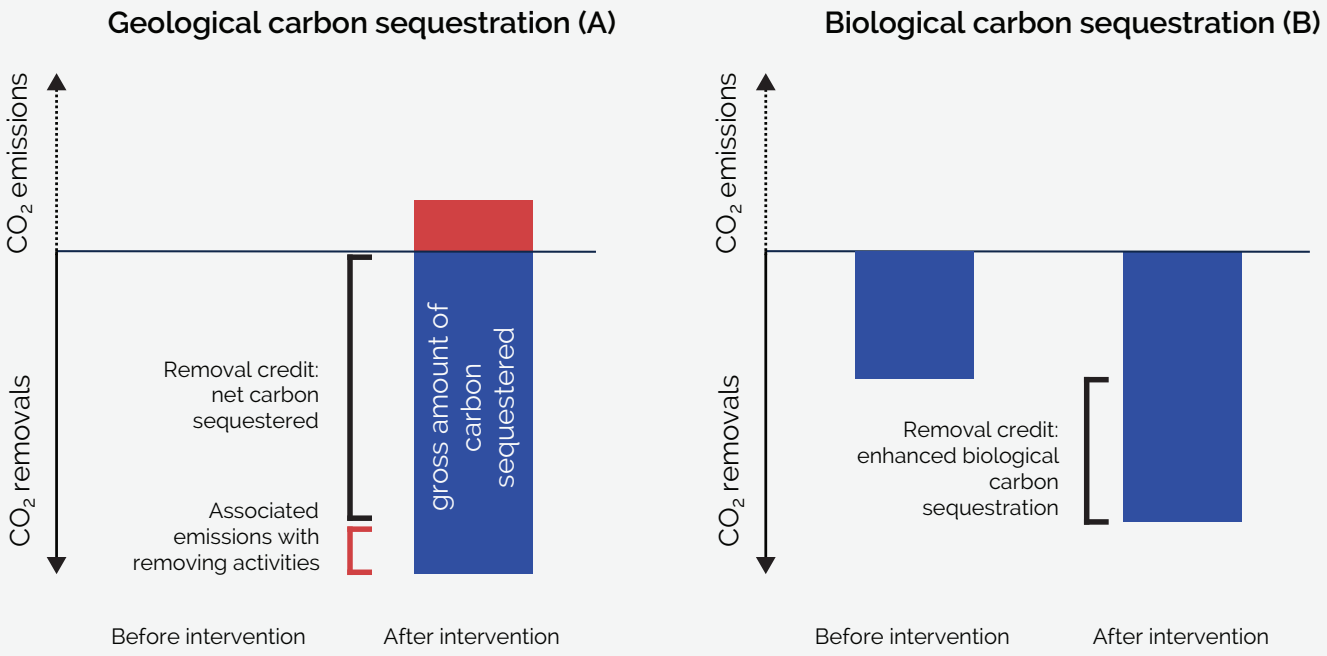
86 Elaborated by the SBTi based on Aragones M.P. et al. (2022). The Carbon Credits Conundrum: Why Governments Need To Regulate Carbon Removal And Voluntary Markets. Guidance for Policy Makers

87 Elaborated by the SBTi based on Aragones M.P. et al. (2022). The Carbon Credits Conundrum: Why Governments Need To Regulate Carbon Removal And Voluntary Markets. Guidance for Policy Makers

Carbon removal credits

Removal credits originate from carbon removal and storage activities that, according to the Oxford University Net-Zero Aligned Principles,[88] involve "sequestering carbon from the atmosphere and storing it in biological or geological reservoirs". The number of carbon credits eligible for issuance in a given year is determined by measuring the increase in stored carbon as a result of the activity, compared to the baseline level of carbon stored before the activity began. Examples of biological carbon sequestration include restoring or enhancing natural carbon stocks or the sequestration of carbon in soil. Geological sequestration typically involves capturing carbon dioxide directly from the atmosphere and storing it in underground geological reservoirs or through mineral carbonation, where carbon dioxide is converted into stable mineral compounds.

Figure 27. An illustration of how removal credits function in case of geological sequestration (A)[89] and biological carbon storage (B).



88 University of Oxford. (2024). Oxford Principles for Net Zero Aligned Carbon Offsetting

89 Elaborated by the SBTi based on Aragones M.P. et al. (2022). The Carbon Credits Conundrum: Why Governments Need To Regulate Carbon Removal And Voluntary Markets. Guidance for Policy Makers

MODELS FOR CHAINS OF CUSTODY AND TRACEABILITY

The most stringent level of assurance regarding the origin and attributes of the product is provided by the **identity preserved** chain of custody model. This model ensures that a product's specific attributes and origin are maintained throughout the supply chain and each batch of the product is kept separate from other batches, preserving its unique identity. Products from different sources cannot be physically mixed and must be documented accordingly.

The **physical segregation** model ensures that the certified product is kept separate from non-certified sources but does not prevent mixing the product from different certified sources with the same standard. In this sense, the characteristics of a product are maintained from the initial input to the final output, but there is no unique identification of the source.

Mass balance is a model where certified and non-certified products can be physically mixed, which reduces the ability to trace the product back to its origins. Under this model, a certain volume of certified products enters the supply chain and an equivalent volume of product that leaves the operations can be sold as certified. The physical traceability of the certified product depends on the mass balance of operations. In particular, the GHG Protocol distinguishes between controlled blending, which allows the establishment of physical traceability on the certified share of product, and mass balance, which does not ensure physical traceability to a specific origin.

Finally, under the **book and claim** model, physical products – whether certified or not – are not tracked and flow in the same supply chain. Instead, certificates or credits are traded separately according to the amount of certified product fed into the supply chain (i.e. the certificates or credits are “unbundled”).

The Advanced Indirect Mitigation platform (AIM) categorizes traceability into three main categories:[90]

- **Physical association**: This level refers to interventions that can be physically traced to specific activities within a company’s value chain.
- **Close association**: Applies to activities with reasonable, albeit lower, levels of traceability. This might involve sourcing from areas where physical segregation of certified and non-certified resources is not feasible.
- **Sector association**: Used for interventions that may not be physically traceable to specific activities in a company's value chain but can still have a comparable impact due to their relevance to the sector.

Although there are no widely established norms yet for using carbon credits to support value chain mitigation claims, several initiatives and standards have conducted foundational work in this area. These include the Value Change Initiative, the Gold Standard landscape intervention accounting guidelines and Verra´s scope 3 program, amongst others.

Some of the parameters that may be important to substantiate value chain mitigation claims through the use of carbon credits from mitigation activities within the value chain include:

- **Quality criteria**: This ensures that the carbon credit represents mitigation outcomes that are measurable, verifiable, and permanent.

90 AIM. (2024). AIM Platform Criteria

- **Degree of association**: This parameter refers to both the physical and temporal connection between the activity from which the carbon credits originate and the entity making the claim. It is important to substantiate that the credits effectively represent a mitigation outcome traceable to activities and emissions sources within the company's value chain and within the GHG inventory of the company.
- **Fungibility**: This parameter refers to the compatibility of a carbon credit with a corporate GHG inventory to ensure that both instruments can be used in conjunction to substantiate value chain emission reduction and/or removal claims. For example, a carbon credit that represents abatement of emissions (i.e. mitigation within the company value chain) may be suitable for substantiating value chain emission reduction and/or removal claims, as it could help establish the emissions performance of the activity before and after a mitigation action. In contrast, a credit representing avoided emissions may not be suitable for such claims because it compares the actual performance of an activity against a counterfactual hypothetical scenario.

Carbon credits from mitigation activities outside the value chain

A significant portion of climate-related claims made by companies today are based on carbon credits that originate from activities that cannot be traced back to the company's value chain, either physically or temporally. The practices surrounding the use of carbon credits vary widely, leading to diverse outcomes and impacts and potentially requiring much more nuanced claims. Despite this diversity in current practice, claims are generally categorized into either compensation claims or contribution claims.

Contribution claims communicate to audiences that an organization has provided support or financing to actions beyond the company's value chain that are expected to result in climate mitigation outcomes. Importantly, these claims do not suggest that such support directly reduces the company's environmental impact on the climate. In contrast, **compensation claims** imply that purchasing carbon credits is equivalent to reducing emissions within the organizational boundary or value chain of a company. This implied equivalence is the basis for the practice of offsetting, whereby a company purchases carbon credits instead of reducing emissions at the source.

The practice of offsetting and the implied equivalence between reducing value chain emissions and purchasing and retiring carbon credits from beyond the value chain has been at the heart of the increased scrutiny, criticism and controversy surrounding carbon credits, their use and related claims. Some of the concerns surrounding this practice are related to the supply-side of carbon credits, while others focus more on the use of the instrument.

On the supply-side, some of the most common concerns relate to whether carbon credits truly represent the mitigation outcomes they convey, the permanence of these mitigation outcomes, and various social and environmental aspects associated with the projects and activities from which carbon credits originate. On the demand-side, concerns often center around potential mitigation deterrence when companies purchase carbon credits instead of abating emissions, potential finance dilution due to the differential between the price of carbon credits and the cost of abating emissions, and the alignment of this practice with transition pathways consistent with achieving net-zero emissions globally. Additionally, there are concerns about the non-fungibility between GHG inventories, which represent actual emissions, and carbon credits, which often represent avoided emissions, as well as the integrity of the claims surrounding this practice.

On the other hand, there are a number of arguments in support of this practice, including the role that carbon markets can play in channeling private sector finance towards mitigation activities and the role that carbon finance can play for activities for which alternative finance mechanisms are lacking. Some projects that issue carbon credits can also provide co-benefits, such as biodiversity conservation or community development. Finally, some stakeholders perceive the use of carbon credits as a lower entry barrier for entities to participate in climate action efforts.

ANNEX VI: POTENTIAL RISKS AND MITIGATION APPROACHES

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In addition to the potential risks and mitigation measures for the use of carbon credits from activities beyond a company's value chain set out above, this section sets out other potential unintended consequences of the concepts presented in this paper and potential approaches to mitigate these risks.

Table 8. Potential risks and mitigation options identified for the proposals presented within this paper.

RISK AND DESCRIPTION	POTENTIAL MITIGATION MEASURES
Increased complexity: Undertaking the proposed assessment of climate-relevant emissions sources will require companies to understand their emissions sources at a more granular level. Although companies often already use a breakdown of commodities, products, services and activities to calculate their GHG inventories, companies do not typically disclose their GHG inventories at this level. Furthermore, introducing additional metrics may increase the complexity of value chain reporting. While the aim of alignment metrics is to provide a way to assess climate performance in a more actionable way that provides a more holistic view of progress towards net-zero emissions alongside scope 3 metrics, the use of multiple assessment approaches may introduce new challenges in terms of data collection, analysis and interpretation.	• To minimize burden on companies, the SBTi could stipulate a minimum threshold for breaking down emissions inventory using the SBTi's current significance threshold of 5%. • Analyze potential metrics against pre-defined selection criteria, including ensuring metrics are simple, decision-useful and practical to collect. • Pilot the new approach with companies to check efficacy and feasibility. • Provide practical guidance and training to support companies with data collection, analysis, and reporting.
Technology prescriptiveness: If granular alignment metrics are not carefully selected, there could be a risk that companies prioritize investments in technologies and solutions that align with the specific metrics used to measure alignment, instead of considering switching to other technologies or solutions that might be more efficient or effective in reducing emissions. While a benefit of introducing alignment metrics is that they can support the flow of capital towards lower carbon entities, activities and commodities, establishing standardized alignment metrics across industries or sectors could inadvertently favor certain technologies or approaches, effectively locking in specific technologies as the de facto standard for achieving climate goals. This may create barriers to entry for alternative technologies or solutions that do not align with the prescribed metrics, limiting competition and innovation in the marketplace.	• Design metrics to ensure they are not technology specific, flexible and adaptable to a variety of technology options and approaches for emissions reduction. • Focus on defining performance-based benchmarks that incentivize outcomes rather than dictating methods, allowing companies to choose the most suitable and cost-effective technologies for their specific circumstances while still achieving climate goals.

RISK AND DESCRIPTION	POTENTIAL MITIGATION MEASURES
Favoring supply chains from high-income countries: Requiring companies to select suppliers that are aligned with global climate goals could inadvertently favor suppliers in high- and medium income countries due to their countries' Nationally Determined Contributions (NDCs), climate policies and regulations compared to middle-income and low-income countries. These policies may include stricter emissions reduction targets, stronger regulatory frameworks, and more extensive support for renewable energy and sustainability initiatives. As a result, suppliers in high and medium income countries may find it easier to meet requirements, giving them a competitive advantage in the selection process.	• Alignment metrics could be assessed against the equity principle to ensure that the differentiated responsibility, impact, capabilities, and influence of entities of varying sizes, types, sectors, and geographies are considered to promote a just transition towards net-zero value chains. • Work to ensure fair representation of organizations from low and lower-middle income countries in the consultation and piloting process. • Ensure implications for suppliers in low and lower-middle income countries are understood through pilot testing.
Certification may mask wider sustainability impacts: The use of commodity certification to demonstrate alignment may lead to unintended negative consequences if buyers focus too narrowly on the emissions performance of a specific commodity without taking into account the wider emissions performance of the entity producing it. For example, a supplier may be producing one commodity that is certified as being aligned with global climate goals, while the majority of its product portfolio is highly emissions intensive and its entity-level emissions are increasing. In addition, there may be risks associated with relying on third party certification schemes, each of which may have its own inherent strengths and weaknesses. Furthermore, overemphasis on the emissions performance of a commodity could result in an incomplete understanding of overall sustainability performance and neglect other important aspects such as biodiversity conservation, ecosystem health, or community well-being.	• Assess alignment at both the entity level and the commodity level to accurately determine the alignment of purchased commodities • Consider developing criteria on the suitability of third party certification for use against a specific SBTi alignment metric • Buyers integrate supplier selection criteria that encompass a range of sustainability factors beyond emissions performance, e.g. biodiversity conservation, ecosystem health, social responsibility, and economic viability.

RISK AND DESCRIPTION	POTENTIAL MITIGATION MEASURES
Disincentivizing longer-term innovation: There may be a risk that outcome metrics that focus company action on aligning their value chains in the near-term may detract attention away from longer-term innovation and systemic interventions. This is because longer-term innovation and systemic interventions involve more complex and strategic initiatives aimed at fundamentally reshaping value chains, building coalitions and changing industry practice that may not be immediately "actionable".	• Design outcome metrics that incentivize both actionable short-term interventions and longer-term systemic changes to encourage companies to pursue immediate emission reductions as well as forward-looking transformative initiatives. • Require disclosure of transition plans that set out a time-bound action plan for how companies will pivot existing assets, operations, and business models towards net-zero transformation. • Supplement near-term targets with long-term emissions reduction targets to reach net-zero. • Consider the need for safeguards to avoid incentivising companies to disengage with emissions intensive sourcing areas in the near-term, where longer-term engagement to address emissions might be more effective.
Credible claims: Although issues in relation to credible claims have already been identified with the current approach to scope 3, integration of additional metrics and the focus on high-climate-impacts may introduce new challenges to ensure that SBTi standards enable claims that ensure companies do not inadvertently mislead stakeholders regarding the approach taken to value chain mitigation, but also incentivize companies to take greater responsibility for value chain impacts.	• Ensure claims clearly distinguish between the interventions (i.e. targets and policies) taken to address value chain emissions. • Ensure claims distinguish between mitigation that occurs within, associated with and outside the value chain. • Require justification for emissions sources that are not addressed by interventions.

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