SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

CHEMICALS SECTOR TARGET-SETTING CRITERIA PROJECT TERMS OF REFERENCE

Version 1.1

December 2024

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 UK charity, with a subsidiary SBTi Services Limited, which hosts our target validation services (together with SBTi, the “SBTi Group”). Partner organizations who facilitated SBTi’s growth and development 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).

VERSION HISTORY

Version	Change/update description	Publication date
Version 1.0	• Chemicals Sector Guidance Project Terms of Reference V1.0	May 15, 2024
Version 1.1	• Launch timeline updated to Q3 2025.	December 16, 2024

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1. INTRODUCTION

1.1 About this Terms of Reference

This Terms of Reference describes the key information related to the Chemicals Sector Target-Setting Criteria development project. The project has been in active development since late 2021. The remainder of the project is being carried out according to the relevant sections of the Standard Operating Procedure (SOP) for Development of SBTi Standards. To date, the project has been managed in accordance with legacy SBTi procedures.

2. BACKGROUND

The chemicals industry has one of the most complex and diverse value chains of all industrial sectors. Products from the chemicals sector are critical to nearly every aspect of modern life. These products vary from bulk industrial chemicals to highly specialized pharmaceuticals and laboratory reagents. The health care, agriculture, construction, packaging, manufacturing, and transport industries all rely heavily on chemical products. What's more, demand for chemicals is expected to continue to grow in the decades to come[1].

Much of the chemicals value chain is based on the building blocks of carbon and hydrogen. Today, the sector relies heavily on direct fossil-based hydrocarbon feedstocks (e.g. coal, natural gas, natural gas liquids) or feedstocks that are products of crude oil refineries (e.g. naphtha) for the source of these building blocks. For this reason, the chemicals industry is the largest industrial consumer of energy in the world when both feedstocks and fuel consumption are considered[2], and is the third highest emitter of GHGs, after the cement and iron and steel sectors.

Value chain (scope 3) emissions of the chemicals industry are substantial. The fate of the carbon embedded in chemical products must be considered down the value chain, where GHG emissions can occur either during the use phase or at the end-of-life via incineration or decomposition. Additionally, N_2O emissions generated from N-fertilizer application in the field presents a particular challenge for companies producing such fertilizer products. The upstream emissions associated with the extraction and production of the fossil-based feedstocks and fuels, and their alternatives (including land-related and production emissions to obtain biomaterials, emissions from waste recycling processes, and to obtain CO_2 for Carbon Capture & Utilization processes), are just as critical.

For these reasons, the SBTi is developing target-setting criteria to outline criteria for chemical companies to set credible, ambitious, science-aligned climate targets. By following these criteria, chemical companies will demonstrate their commitment to the forward-thinking goal of achieving net-zero emissions by no later than 2050 on a 1.5°C-aligned trajectory by setting both ambitious near- and long-term targets.

[1] International Energy Agency (IEA). Net Zero Roadmap: A Global Pathway to Keep the 1.5ºC Goal in Reach. 2023 Update (2023).
[2] International Energy Agency (IEA). Net Zero by 2050: A Roadmap for the Global Energy Sector (2021).

3. OBJECTIVES

The objective of the Chemicals Sector Target-Setting Criteria development is to establish a sector-specific criteria that will apply to companies operating in the global chemical manufacturing sector to detail the minimum criteria to be followed to set 1.5°C-aligned science-based climate targets. To the extent possible, the developed criteria will cover both near- and long-term target setting, and address all relevant GHGs. For the chemicals sector, GHG's other than CO_2 are especially relevant, in particular N_2O emissions that occur due to the production of nitric acid and from the use of synthetic nitrogen fertilizers. The Chemicals Sector Target-Setting Criteria will be consistent with the SBTi's Corporate Net-Zero Standard and will utilize published sources of data, including sectoral-level emissions scenarios, to inform the development of criteria.

The target-setting criteria's goals are to establish sector-specific criteria for the most significant sources of emissions within the sector, contingent on the availability of appropriate sectoral and product level data on which target-setting methods can be based. This includes sources of emissions that have been identified as significant or worthy of focus during the SBTi's project scoping phase, such as scope 1 and 2 emissions from the production of "primary chemicals"[3] and nitric acid, scope 3 emissions associated with sold nitrogen fertilizers, and scope 3 emissions from the end-of-life of sold chemical products.

4. SCOPE

This project aims to deliver a Chemicals Sector Target-Setting Criteria that contains minimum required criteria, recommendations and guidance for the companies operating globally in the manufacture of chemicals to set 1.5°C-aligned science-based emission reduction targets across scopes 1, 2 and 3. The target-setting criteria is intended to be a supplement to, not a replacement for, the SBTi's cross-sector criteria and Corporate Net-Zero Standard. Therefore, any aspects of the chemicals sector that are not specifically addressed in the guidance would remain subject to all applicable cross-sectoral criteria. The chemicals sector includes the production of many thousands of chemical products, including so called base primary chemicals, intermediate chemical products, specialty chemical products, pharmaceuticals, consumer chemicals, and others. The scope of the sector addressed in the target-setting criteria includes the range of chemical products beginning with primary chemical (and other base chemical) through the production of specialty chemicals, consumer chemicals, pharmaceuticals, and polymers. Excluded from the target-setting criteria is the production of chemicals in oil refineries and final products that are manufactured from chemicals, such as plastic packaging, cosmetics, textiles, detergents, paints, or inks. The applicability of each criteria developed as part of this target-setting criteria will clearly describe the products, processes, and/or segments of the sector to which they apply.

The project will also deliver a target-setting tool to assist companies in setting the targets.

[3] For the purposes of the SBTi Chemicals Sector Target-Setting Criteria, primary chemicals are defined as ammonia, methanol, and high-value chemicals (HVCs). HVCs are ethylene, propylene, benzene, toluene and xylene.

4.1. Geographic application

The Chemicals Sector Target-Setting Criteria will be open for use by organizations headquartered and with emissions and activities anywhere in the world that are active within the chemicals sector.

5. NEED FOR THE CHEMICALS SECTOR TARGET-SETTING CRITERIA

The SBTi is undertaking the Chemicals Sector Target-Setting Criteria development because direct emissions from the chemicals sector are the third highest from all industrial sectors, contributing approximately 4% of global emissions[4]. Existing 1.5ºC-aligned emissions scenarios and pathways for the chemicals sector show that projected emissions reductions from major products of the industry will reduce at a slower rate than the broader economy. This is due to the energy-intensive nature of their production, continued high demand, and technological limitations of low-emissions alternatives. Thus, sector-specific target-setting methods are warranted.

Further, most of the products manufactured by the chemicals sector are produced from carbon-based feedstocks, the vast majority of which come from fossil-based materials such as natural gas, oil, and coal. This embedded fossil carbon can be emitted as CO_2 in subsequent production steps, the use-phase, or the end-of-life of the chemical product, thus generating significant emissions in the value chains of producers. An estimate of the total scope 1, 2 and 3 emissions from the chemicals sector in 2020 is 2.3 Gt CO_2e[5].

When implemented, the Chemicals Sector Target-Setting Criteria will address a gap in the SBTi's sector-specific resources. Alongside existing resources for the cement and iron and steel sectors, the Chemicals Sector Target-Setting Criteria will ensure the SBTi's coverage of these three highest emitting industrial sectors.

6. RELATED STANDARDS AND INITIATIVES

The SBTi is part of a growing ecosystem of standards and initiatives addressing corporate climate change action from different angles. The SBTi recognizes the value of harmonizing its work with other actors in this ecosystem.

There are a range of initiatives which map out the business model transitions that corporates will need to undertake to achieve their science-based targets, such as the Assessing low-Carbon Transition (ACT) initiative, Race to Zero, the Transition Planning Taskforce (TPT) and the Transition Pathway Initiative (TPI). The Greenhouse Gas Protocol's (GHGP) corporate standards provide global frameworks for corporations to calculate base-year

[4] IEA. Net Zero Roadmap: A Global Pathway to Keep the 1.5ºC Goal in Reach. 2023 Update (2023).
[5] Systemiq and Center for Global Commons. Planet Positive Chemicals: Pathways for the chemical industry to enable a sustainable global economy. (September 2022).

greenhouse gas inventories and annual inventories thereafter, as they monitor performance against their science-based targets.

Within the scope of the Chemicals Sector Target-Setting Criteria development, the following organizations are relevant to the extent of the project. This list is not intended to be exhaustive of all initiatives in this subject area.

- TPI assesses companies in the chemicals sector according to the management of their GHG emissions and of risks and opportunities related to the low-carbon transition.
- The International Investors Group on Climate Change (IIGCC) has published, among other resources, a report on the expectations of investors for chemical companies' transition to net-zero.
- The ACT Initiative has published a draft methodology for assessing chemical companies' alignment with a future low-carbon world.
- The Mission Possible Partnership (MPP) has produced a transition strategy for ammonia production, with plans to address additional chemicals as well. MPP's Ammonia Transition Strategy provides a shared vision for the industry's low-carbon future, providing real economy milestones and detailing the industry, policy, and finance action required to get to net-zero on a 1.5°C-aligned pathway.

7. SUSTAINABILITY OUTCOMES

In 2018, the Intergovernmental Panel on Climate Change (IPCC) warned that global warming must not exceed 1.5°C above pre-industrial temperatures to avoid the catastrophic impacts of climate change. Businesses have a vital role to play in driving down GHG emissions and building the resilient, zero-emissions economy we urgently need. This action must be grounded in science. Science-based targets show companies and financial institutions how much and how quickly they must decarbonize to prevent the worst impacts of climate change.

SBTi's theory of change identifies that the corporate emissions reductions needed to achieve our global climate goals can be achieved through the '*diffusion of innovations*' theory. This posits that 10 to 25% of a system's members must adopt an innovation to trigger rapid adoption by the other members. The SBTi works with the assumption that 20% – one fifth – of businesses setting science-based targets in a particular territory or sector equals critical mass. That's the tipping point at which it becomes increasingly difficult for other businesses to do nothing, and more and more join the race to the top.

A key criterion the SBTi uses in prioritizing projects therefore is the impact the project will have in addressing GHG emissions from key sectors or activities. To that end, the Chemicals Sector Target-Setting Criteria development will address the production of chemical products, which is one of the highest contributors of GHG emissions in the industrial sector. Additionally, the production of primary chemicals involve energy-intensive processes that also may produce process emissions, which complicates the strategies for reducing direct GHG emissions. The most important sustainability issues within the scope of the Chemicals

Sector Target-Setting Criteria development are the GHG emissions associated with the production of chemical products, including the downstream value chain emissions associated with sold chemical products. The Chemicals Sector Target-Setting Criteria will establish criteria for companies operating in the sector to set credible, robust, and science-based climate targets.

8. GOVERNANCE STRUCTURE AND DECISION MAKING

The Standard Operating Procedure (SOP) for Development of SBTi Standards sets out in detail the governance and decision making processes that apply to standards development and revisions.

8.1 Decision-making responsibilities

Below is a summary of decision-making responsibilities for standards and guidance development and revision, according to the Standard Operating Procedure for Development of SBTi Standards.

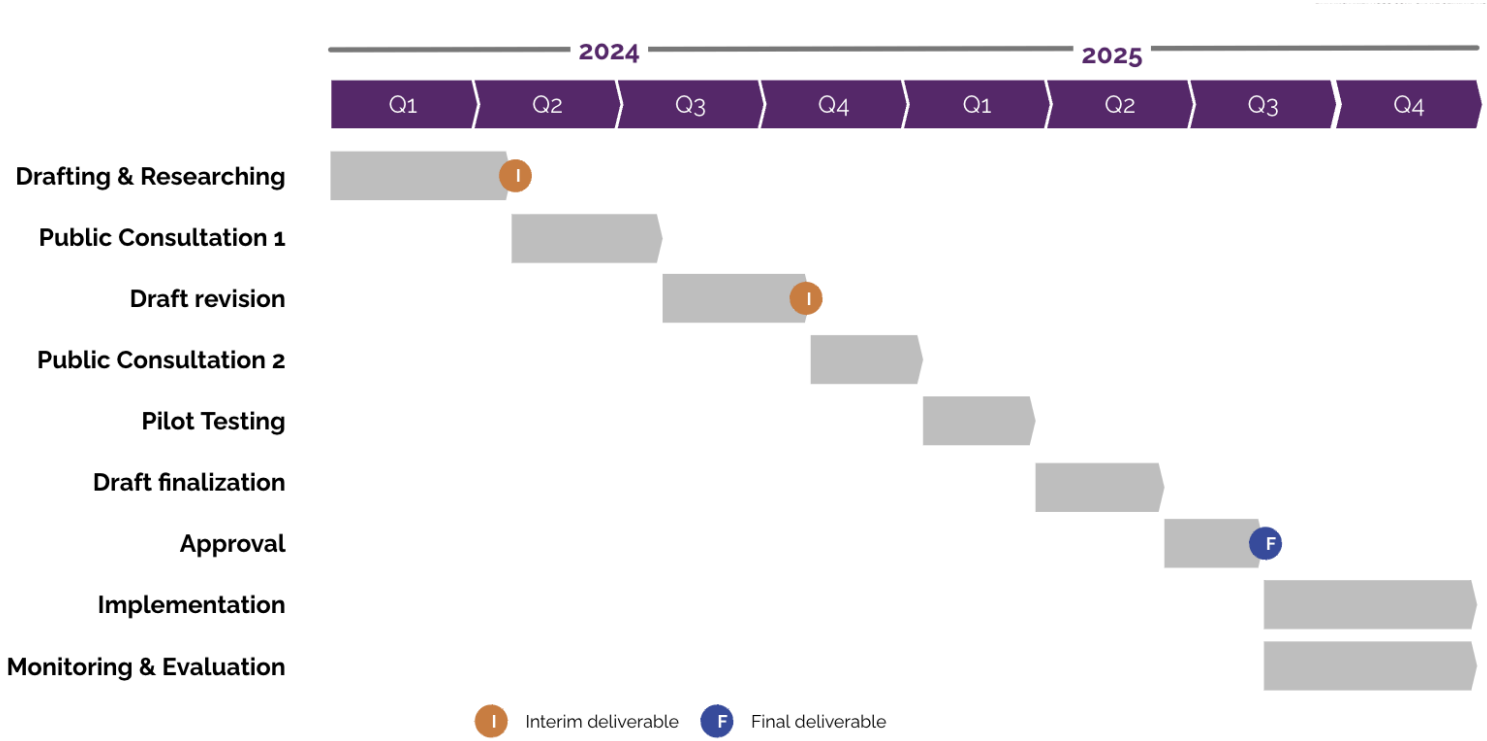
PROJECT GROUP	DECISION-MAKING RESPONSIBILITY
Board of Trustees	• Formal adoption of the final standard or guidance, upon recommendation by the Technical Council.

Technical Council	• Approval for new and revised standards, and major projects, including:
	  ○ Approval of public consultation drafts.
	  ○ Approval of final drafts.

Executive Leadership Team - Chief Technical Officer (CTO)	• Approval of interim external-facing deliverables, for example, the project Terms of Reference, Public Consultation Feedback Report, etc. • Approval of documents to be shared with the Technical Council.
Expert Advisory Group (EAG)	• The EAG is consulted periodically on the development of the project, but is not a governing body and does not have approval over decisions and deliverables. • General input, advice, agreement and contentious issues within the EAG shall be recorded, and main opposing views and rationales noted.
Heads of Teams within Technical Department	• Supports the Project Team in making the relevant day-to-day decisions in conducting the project. • Approval of internal-facing deliverables. • Approval of documents to be shared with the CTO.
Working Group	• The Working Group is consulted throughout the development of the project, but is not a governing body and does not have approval over decisions and deliverables. • General input, advice, agreement and contentious issues within the Working Group shall be recorded, and main opposing views and rationales noted.
Project Team	• The Project Team makes day-to-day decisions on how to conduct the project, but does not have final approval over decisions and deliverables.

9. PROVISIONAL TIMELINE

The proposed timeline for the Chemicals Sector Target-Setting Criteria development is shown below. This includes project deliverable milestones and dates for engagement.



Please note that these timelines are tentative and may be subject to adjustments. Changes can occur due to a variety of factors including but not limited to stakeholder feedback, consensus building process and operational constraints. Significant modifications will be communicated transparently to relevant stakeholders.

10. RISK MANAGEMENT

Factors that could have a negative impact on the ability of the Chemicals Sector Target-Setting Criteria development to achieve its outcomes

RISK	MITIGATION MEASURE
Insufficient adoption by the sector in setting targets.	• The SBTi, through its Engagement and Impact Teams, will continue to inform companies of the benefits of setting science-based targets. • The SBTi will include industry actors in the EAG to ensure sectoral input in the development process.
Lack of expertise to inform development of ambitious, credible emissions pathways.	The SBTi will engage relevant experts through internal and (paid) outsourced expertise, the EAG and via the public consultation process.
Inability to establish criteria for all key segments of the sector.	Via the scoping process, the SBTi will map the critical sector activities to be prioritized, at a minimum, in the guidance and will ensure criteria are developed to facilitate target setting on these activities.

Unintended consequences that could arise from the implementation of the Chemicals Sector Target-Setting Criteria development.

RISK	MITIGATION MEASURE
Adoption of the criteria does not lead to actual emissions reductions in the sector.	The SBTi will follow a robust stakeholder engagement process to inform the development of a credible, ambitious, and adequate guidance that leads to actual emissions reductions.

11. ENGAGEMENT

11.1 How to engage?

The SBTi values stakeholder input to inform the development of its technical outputs.There are a variety of channels through which stakeholders can engage with and input into the development of the Chemicals Sector Target-Setting Criteria.

The SBTi convened an EAG consisting of sectoral experts from industry, NGOs, and academia. The EAG has supported the development of the Chemicals Sector Target-Setting Criteria thus far via an iterative feedback process during the research phase of the project, during which the experts provided input on specific questions posed by the Project Team, and reviewed draft documentation.

The Chemicals Sector Target-Setting Criteria development will go through a minimum of two rounds of public consultation and a period of pilot testing. The first consultation will last the duration of 60 days and the second consultation will last the duration of 45 days. During the consultation period, stakeholders will have the opportunity to submit feedback to the consultation questionnaire via a survey. These resources will be available on the sector webpage. A summary of the feedback results will be publicly available. Stakeholders are also welcome to submit feedback on any SBTi project, or project resource, at any stage of development. The pilot testing phase will involve volunteer organizations utilizing the draft criteria to identify challenges for implementation, gather practical feedback, and to inform the development of clear and applicable criteria, target-setting tool, and guidance.

The Project Team will host webinars to update stakeholders on the development process and provide a detailed overview of the criteria, once complete. Planned dates for webinars are to be determined.

Stakeholders can stay up to date with the Chemicals Sector Target-Setting Criteria development process and planned events by monitoring the SBTi's website for updates, signing up for the SBTi newsletter, and following the SBTi on X and LinkedIn.

For general queries relating to the Chemicals Sector Target-Setting Criteria development and how to engage please contact info@sciencebasedtargets.org.

11.2 Who should engage?

The Chemicals Sector Target-Setting Criteria Project Team welcomes input from the following stakeholders:

- Corporates and financial institutions.
- Governments and regulators.
- Civil society organizations.
- Associations and technical experts.
- Academics and research institutions.
- All other stakeholders with an interest in this project development.

12. LANGUAGES

All documents relating to the Chemicals Sector Target-Setting Criteria development, including consultation drafts, will be published in English (this is the SBTi working language). Translations into additional languages may be considered.

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