

# Science Based Targets for Chemical Companies

Chemicals Sector Scoping Publication Launch

Nate Aden, Kylee Chang, Michiel Stork  
December 16, 2020

Online Webinar

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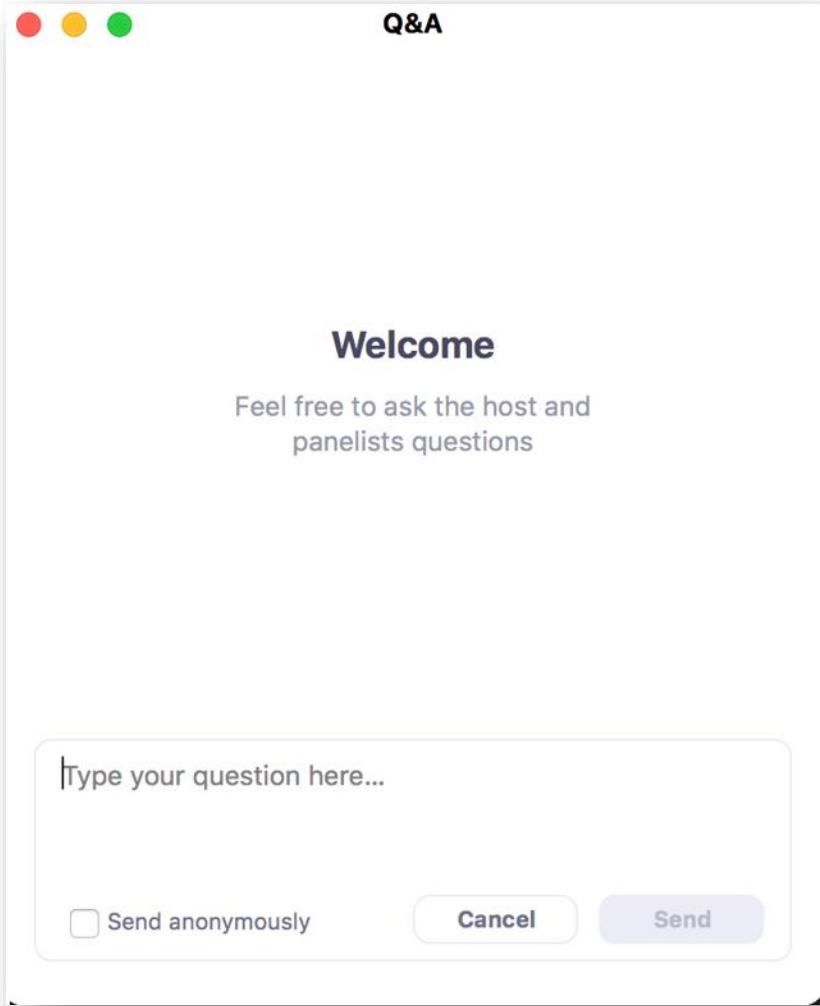


# Welcome!

This webinar is being recorded. Slides and recording will be posted to our website. They will also be emailed to you.

There will be time for questions at multiple points throughout the webinar.

**Please type your questions into the Q&A box.**



A screenshot of a web application window titled "Q&A". The window has a white background and a thin grey border. At the top left are three colored window control buttons (red, yellow, green). The title "Q&A" is in the top right corner. In the center, the word "Welcome" is displayed in a bold, dark font, followed by the text "Feel free to ask the host and panelists questions" in a smaller, lighter font. At the bottom, there is a text input field with the placeholder text "Type your question here...". Below the input field, on the left, is a checkbox labeled "Send anonymously". On the right are two buttons: "Cancel" and "Send".

# Today's Speakers



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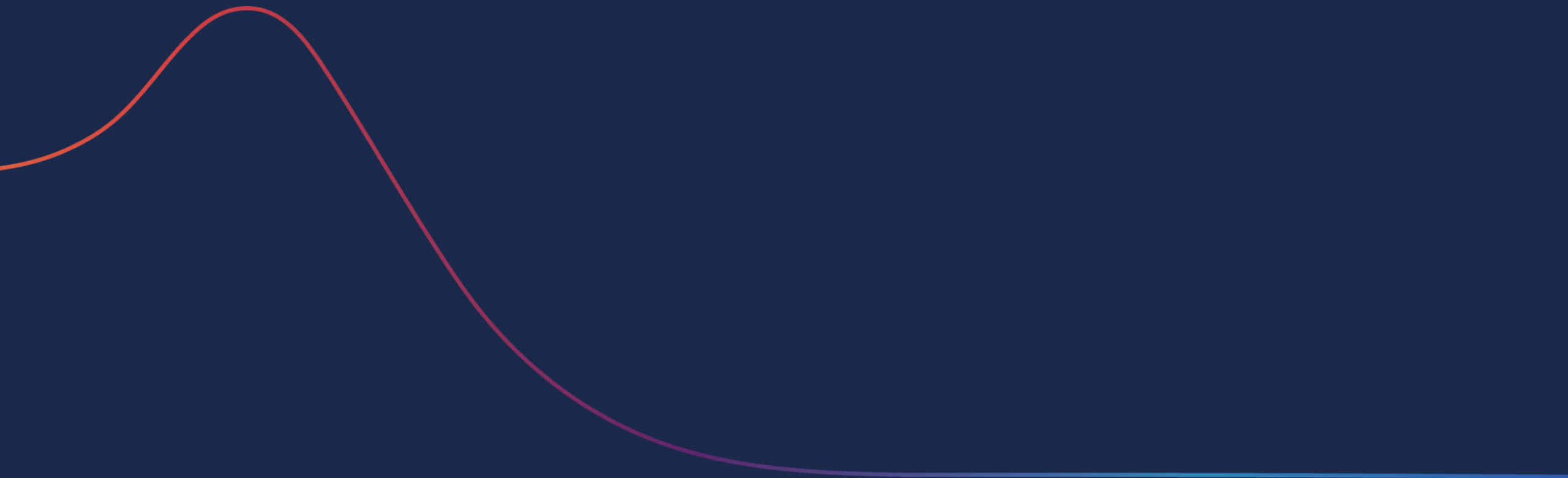


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# Today's Agenda

Topic	Time
Introduction: Project Overview & SBTi Update	15 min
Summary of Stakeholder Survey & SBTi Response	10 mins
Proposed Chemicals Sector Boundary	10 mins
End-of-Life Emissions Options	10 mins
Next Steps	5 mins
Q&A	10 mins

# Project Overview



# SBTI CHEMICALS SCOPING PROJECT

The SBTi is pursuing this project to better understand challenges to setting SBTs using existing methods. The project scoping document recommends options for revising these methods and developing additional resources.

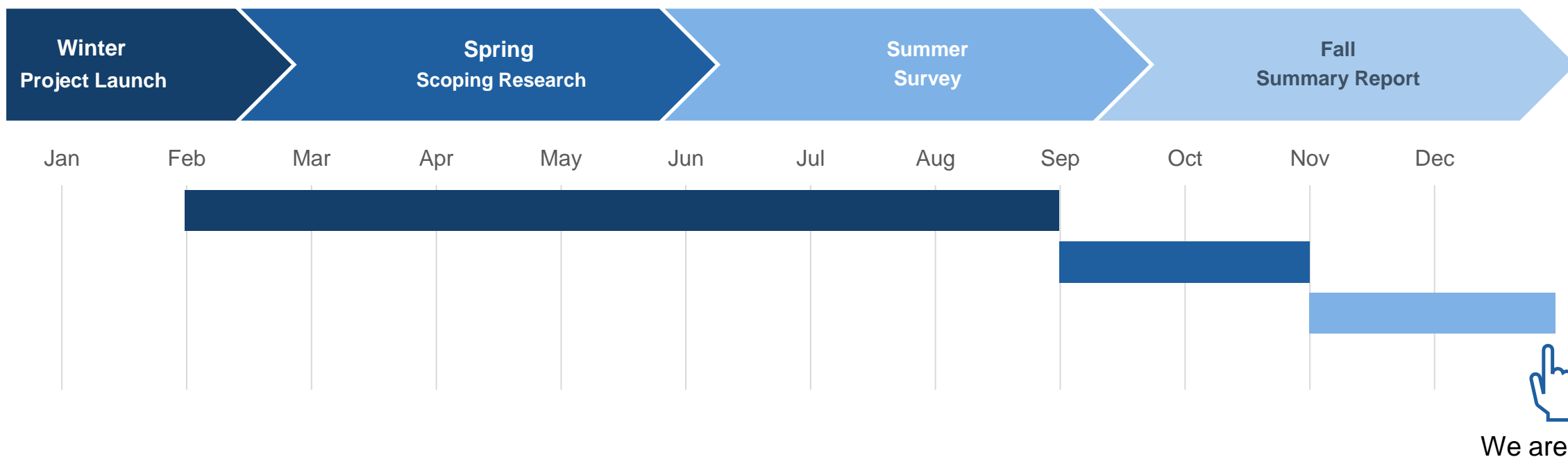
The project audience includes chemical companies, industry associations, and other stakeholders.

WRI gratefully acknowledges financial support from 3M Foundation for this project.





# SBTi CHEMICALS 2020 PROJECT TIMELINE




## March-October: Scoping Research, Stakeholder Survey, and Interviews

- Online survey distributed to chemical companies, industry associations, and stakeholders
- EAG webinar with summary of survey responses
- EAG webinar discussing key issues specific to the chemical industry

## November-December: Synthesis Document

- Present draft of summary document to EAG and gather feedback
- Publish final document on SBTi website
- Broader chemical sector convening (webinar)


# SCOPING DOCUMENT TO BE DISTRIBUTED IN THE NEXT WEEK



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## Barriers, Challenges, and Opportunities for Chemical Companies to Set Science Based Targets

December 2020





This document presents the results of the Science Based Targets initiative's chemicals sector scoping project with considerations for further target-setting method development. To summarize current resources and support further work, the document provides an overview of current chemical company science-based targets, a proposed sector boundary for company activities, results of a stakeholder survey, and considerations for further research.



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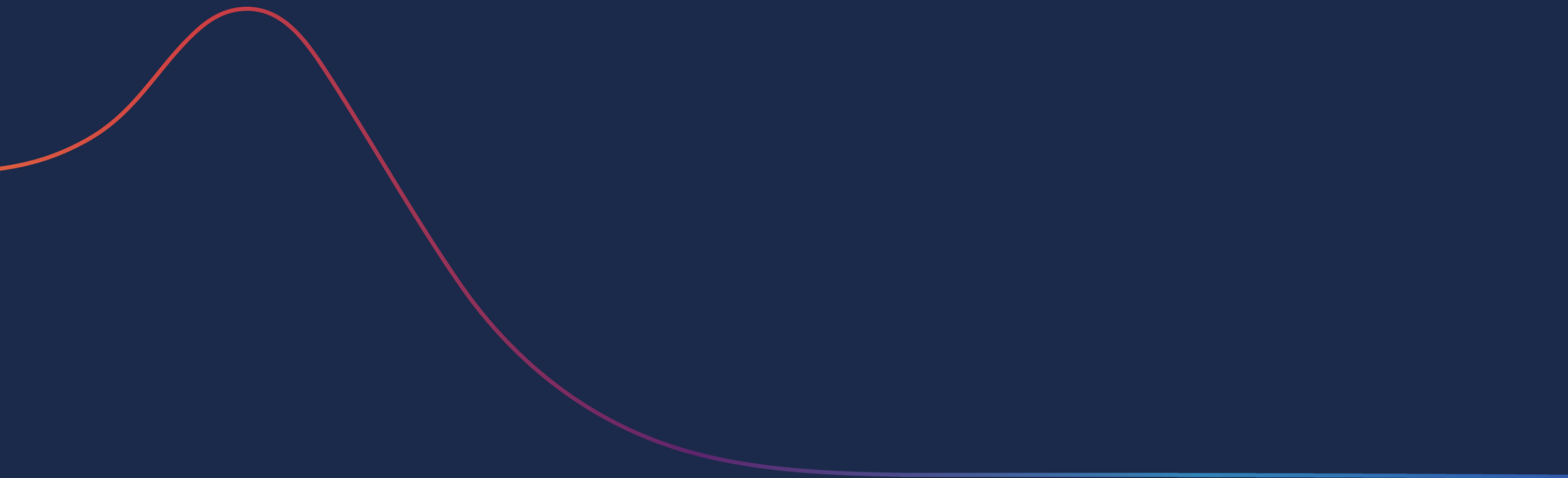
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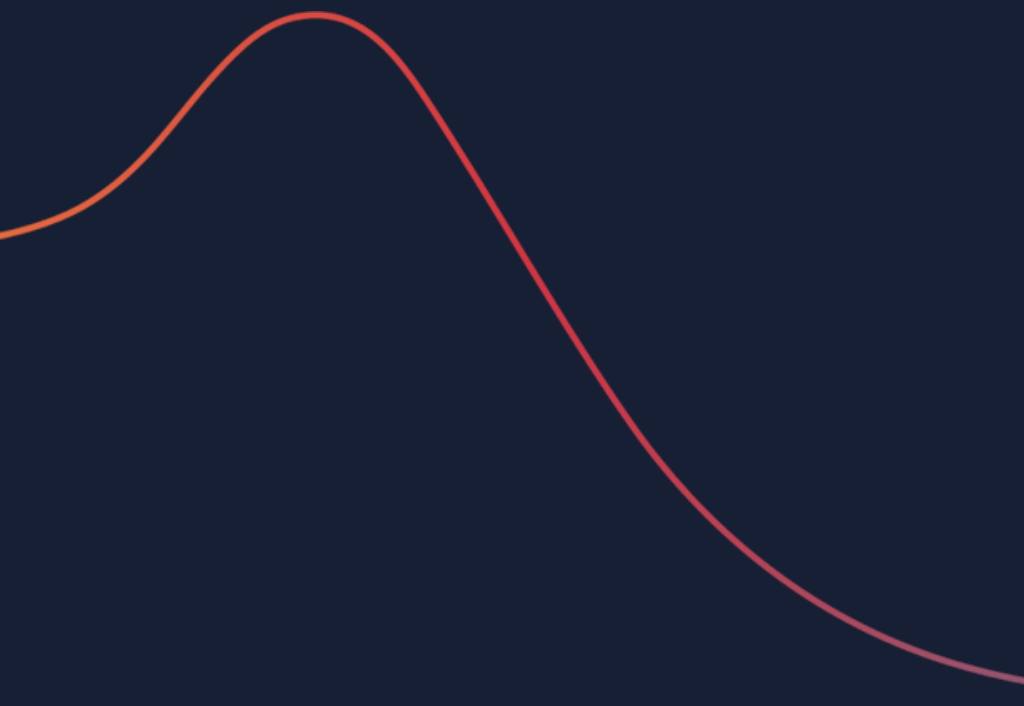
SBTi Chemicals Scoping Document  
December 2020



# SBTi Update



# The SBTi in Numbers



**1,106**

Companies committed to science-based targets

**542**

Companies with approved to science-based targets

**285**

2°C or well-below 2°C targets  
approved  
(scopes 1 and 2)

**254**

1.5°C-aligned  
targets approved (scopes 1 and 2)



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# A GLOBAL GROUP OF 28 CHEMICALS COMPANIES HAVE COMMITTED TO SETTING SBTS

- Air Liquide Group
- AkzoNobel
- **Borregaard AS**
- Croda International
- **Ecolab**
- Group Fu Plastic Co., Ltd
- Gujarat Fluorochemicals Ltd. (GFL)
- **International Flavors & Fragrances Inc.**
- Linde plc
- **Novozymes AS**
- Orbia Advance Corporation
- Polygenta Technologies Limited
- PT Ecogreen Oleochemicals
- Reliance Chemical Products Ltd.
- **Royal DSM**
- **Sekisui Chemical Co., LTD**

- **Sumitomo Chemical Co., Ltd.**
- **Syngenta**
- **Tata Chemicals Limited**
- Univar Solutions

## Recently Added

- Arkema
- **Bayer \***
- Clariant AG
- Godrej Industries
- Hempel A/S
- **Sabará Participações**
- Solvay
- United Phosphorus Ltd.
- Yingyang (China) Aroma Chemical Group

\*Note that Bayer self-classified as a pharmaceutical company for target-review purposes.

**Companies in bold** have approved SBTS

List as of December 2020; for additional information see <https://sciencebasedtargets.org/companies-taking-action/>

# METHODS AVAILABLE FOR CHEMICAL COMPANIES TO SET SBTS

A snapshot of adoption of SBTs by chemical companies

Company	Target Classification	Scope 1 and 2	Scope 3	Other Targets
Novozymes A/S	1.5C	Absolute	Absolute	Renewable Energy
Ecolab	1.5C	Absolute	Supplier Engagement	
Borregaard A/S	WB2D	Absolute	Absolute	
International Flavors & Fragrances Inc.	WB2D	Absolute	Supplier Engagement	
Syngenta	WB2D	GEVA	GEVA	
Tata Chemicals Limited	WB2D	Absolute	NA	
Royal DSM	2C	Absolute	Intensity	
Sumitomo Chemical Co., Ltd.	2C	Absolute	Supplier Engagement	
Sekisui Chemical Co., Ltd	2C	Absolute	Absolute	

- **Absolute Emissions Contraction** – An overall reduction in the amount of GHGs emitted to the atmosphere by the target year, relative to the base year (e.g., reduce annual CO<sub>2</sub>e emissions 35% by 2025, from 2018 levels).
- **Economic Intensity** - Greenhouse Gas Emissions per Value Added (GEVA) - An intensity reduction of tCO<sub>2</sub>e/\$ value added, where companies are required to reduce their GEVA by 7% per year.
- **Physical Intensity** – A reduction in emissions relative to a specific business metric, such as production output of the company (e.g., tonne CO<sub>2</sub>e per tonne product produced).
- **Supplier Engagement** – A company commits to drive the adoption of SBTs amongst its suppliers or customers. Engagement targets may be set around any relevant upstream or downstream scope 3 category.

# Results of Stakeholder Survey

## SBTi Chemicals Survey Basics

Survey Respondents

**59**

Respondents working for a  
chemical company

**40**

Chemical companies produce  
products that do not result in end  
of life emissions

**8**

Some companies had multiple  
respondents



# Overview of Survey Results

Barriers and challenges identified by respondents to setting SBTs

## 1. Low Scope 3 Data Availability

- SBTi will consider how to provide more resources to improve limited and low data quality

## 2. Wait for Sector Specific Methods

- SBTi intends to develop further resources, but does not view lack of sector-specific methods as an excuse for company inaction

## 3. Decarbonization is Complex & Challenging

- Including technological readiness, business model uncertainty, and policy links
- SBTi is exploring how to best address these issues, including net-zero standard development

## 4. Cooperation Over the Value Chain

- SBTi recognizes that increased engagement with investors, advocacy groups, and other stakeholders will be important for catalyzing broader cooperation across the value chain

## 5. Other Issues Not Specified in Survey

- High demand growth, timeframe of SBTs and company size

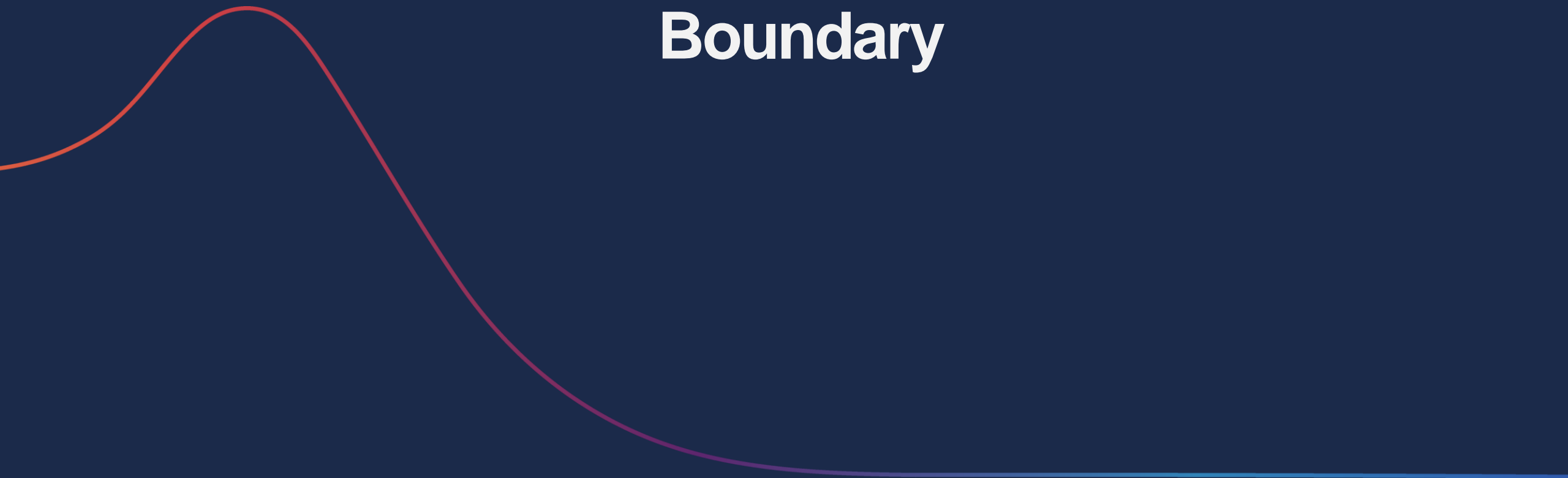
## 6. Scope 1 and 2 Emissions Data Are Available

- On CHP, self-generated electricity, process emissions, and fugitive emissions (partially), but these cannot be easily bundled together when considering emissions reductions
- SBTi provides suggestions for addressing each of these emissions sources separately in the Scoping Document





# Proposed Sector Boundary



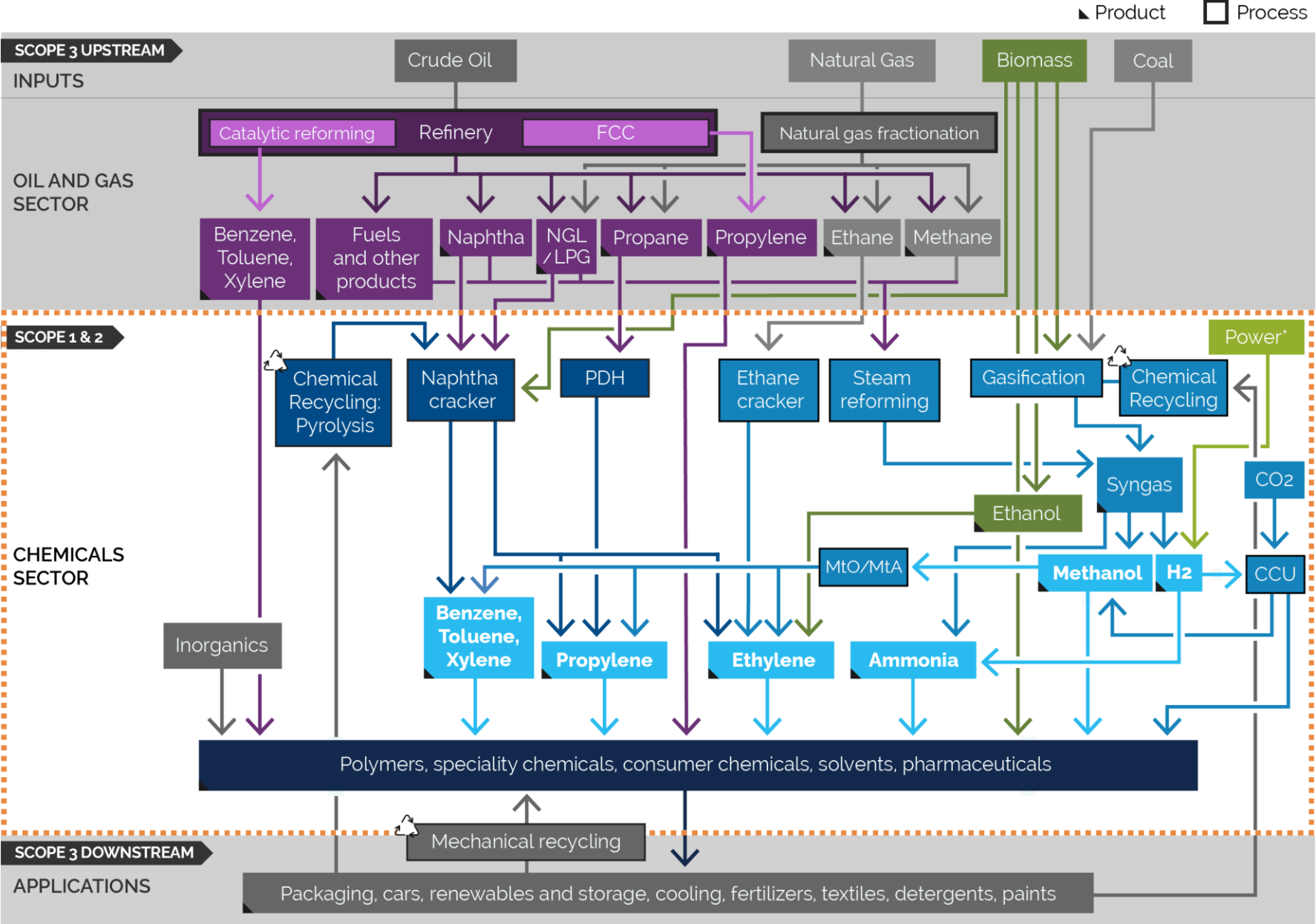
# CHEMICALS SECTOR: DEMARCATION AND DISAGGREGATION

Clear demarcation of the sector is relevant

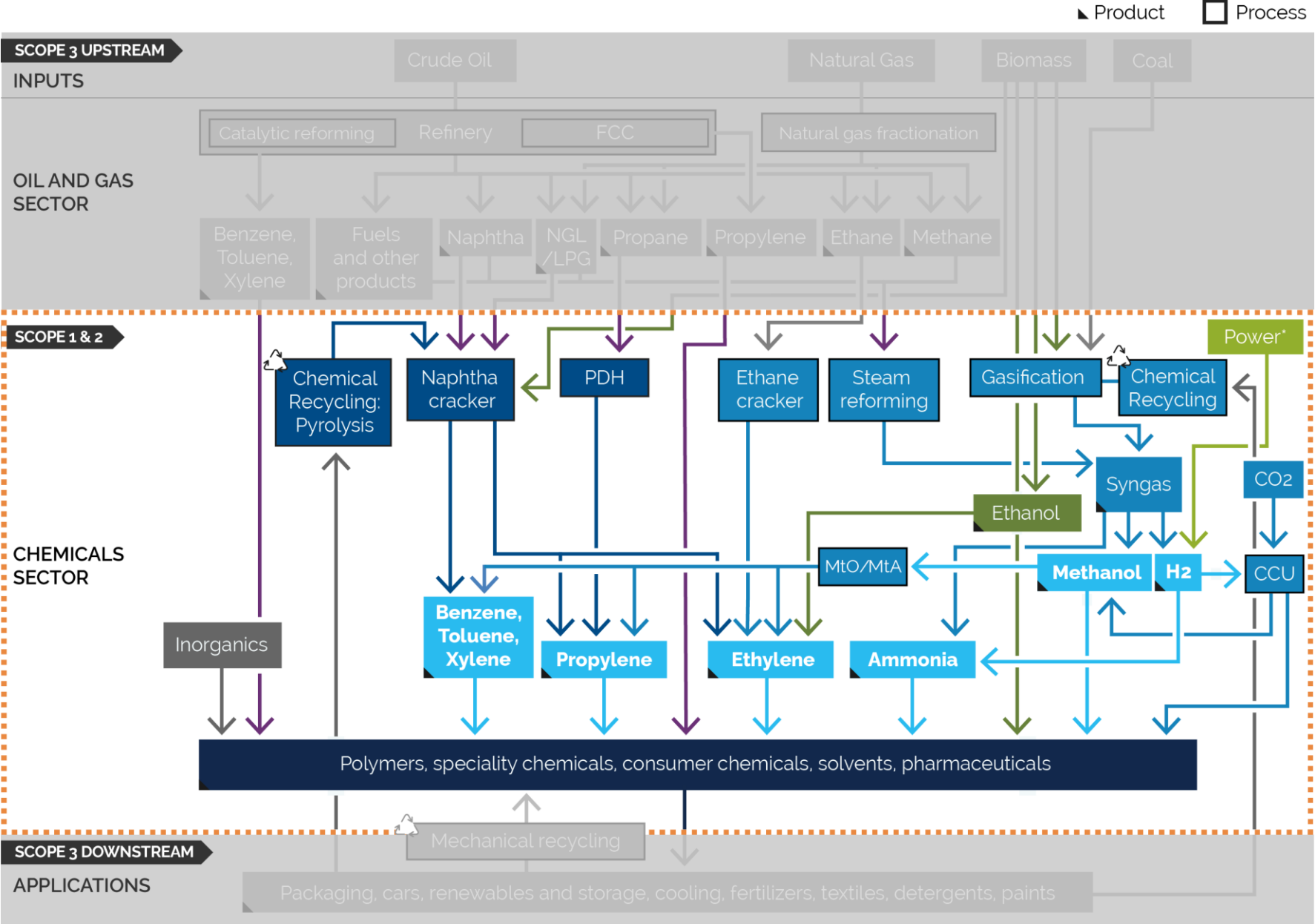
1. **No clear preference for specific taxonomy in survey**
  - Preference to include biofuels and pharmaceuticals in the chemical sector
2. **The Expert Advisory Group considered lack of one overarching taxonomy to be a barrier for setting targets**
3. **SBTi currently uses the International Energy Agencies' Energy Technology Perspectives modelling in its SDA method**
  - ETP Uses International Standard Industrial Classification (ISIC) (United Nations Department of Economic and Social Affairs 2008) with the chemicals sector covering Divisions 20 and 21
  - Chemical sector includes pharmaceuticals but does not include biofuels
4. **Sub-sector indicated preference to be covered as separate (sub) sector**



# CHEMICALS VALUE CHAIN



# CHEMICALS SECTOR BOUNDARY



# CHEMICALS SECTOR: DEMARCATATION AND DISAGGREGATION

## Disaggregation

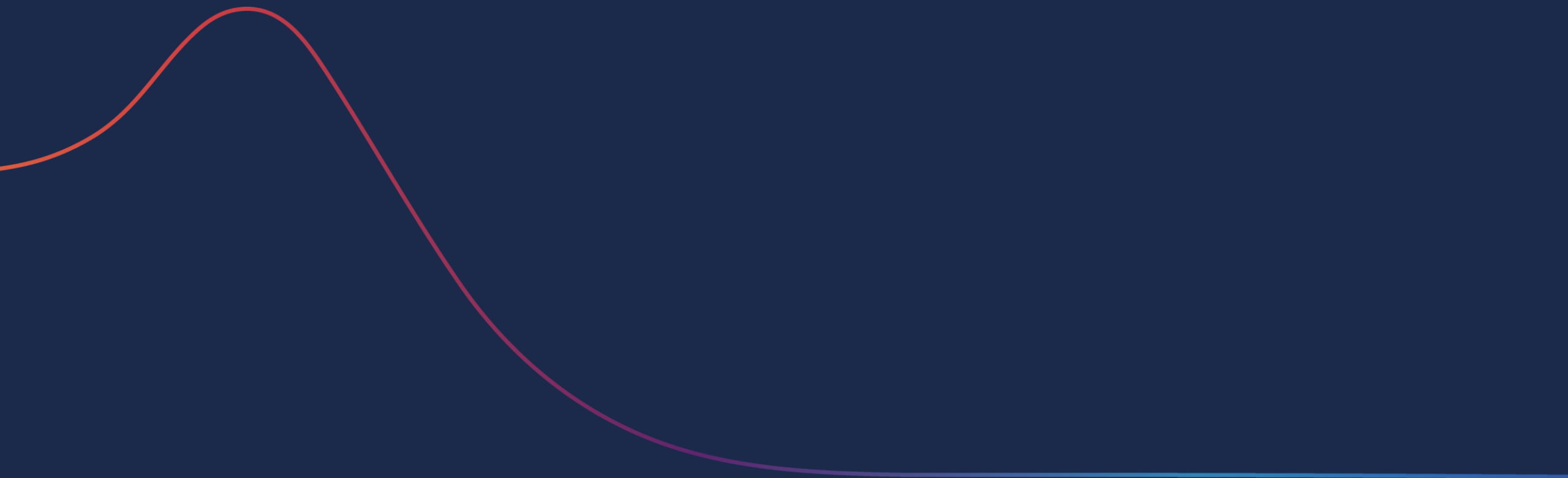
1. Split into sub-sectors / product groups
2. Carve out specific products:
  - Ethylene
  - Propylene
  - Benzene, Toluene, Xylene (BTX)
  - Ammonia
  - Methanol
  - H<sub>2</sub>

## Upstream boundary

Refineries	Chemicals
<ul style="list-style-type: none"><li>• Naphtha production</li><li>• Propylene in FCC</li><li>• BTX in catalytic reforming</li></ul>	<ul style="list-style-type: none"><li>• Steam crackers</li><li>• Steam methane reforming</li></ul>

*“Options to maintain consistency could include moving all production routes for given products to a particular sector.”*

# End of Life Emissions



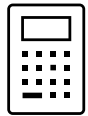
# End of life vs Circular feedstock

## Durable plastic status

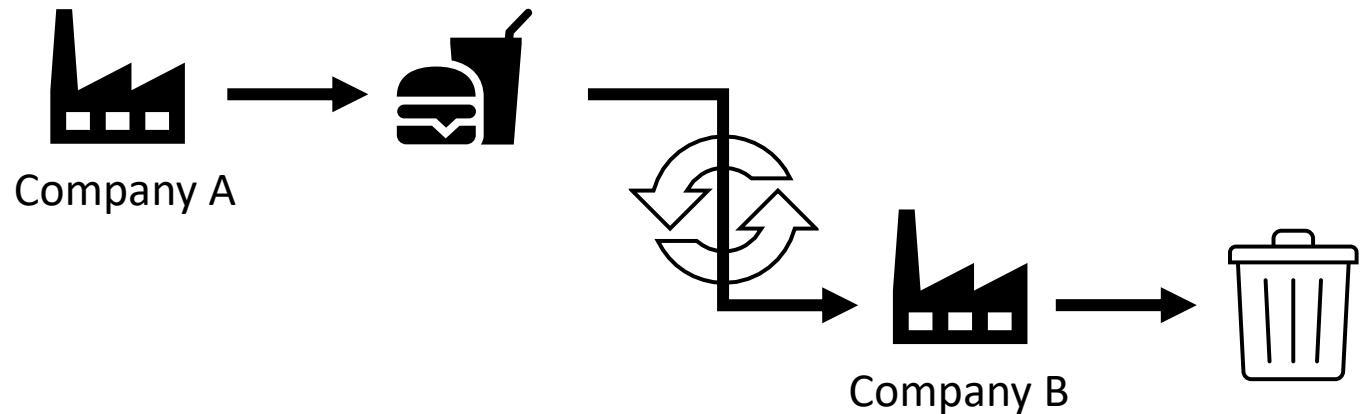


- Approach based on typical data currently assumes for landfilling:
  - For durable plastics: No methane / CO<sub>2</sub> production
  - For non-durable plastics: 50% methane / 50% CO<sub>2</sub> production
- Consequence: Difference in emissions based on typical factors > 50x

## Accounting methods

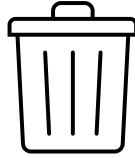


1. End-of-life (Company A)
2. Recycled Content (Company B)
3. Combination





# End of life vs Circular feedstock

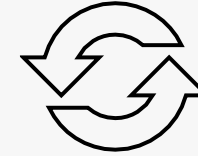


## End of life target

- Engage with waste processors to set SBTs
- Extended Producer Responsibility schemes

## Advantages

- Relatively straightforward (in line with current approach)
- Stimulates:
  - Design-for-recycling
  - Mechanical recycling
  - New behavior



## Circular feedstock target

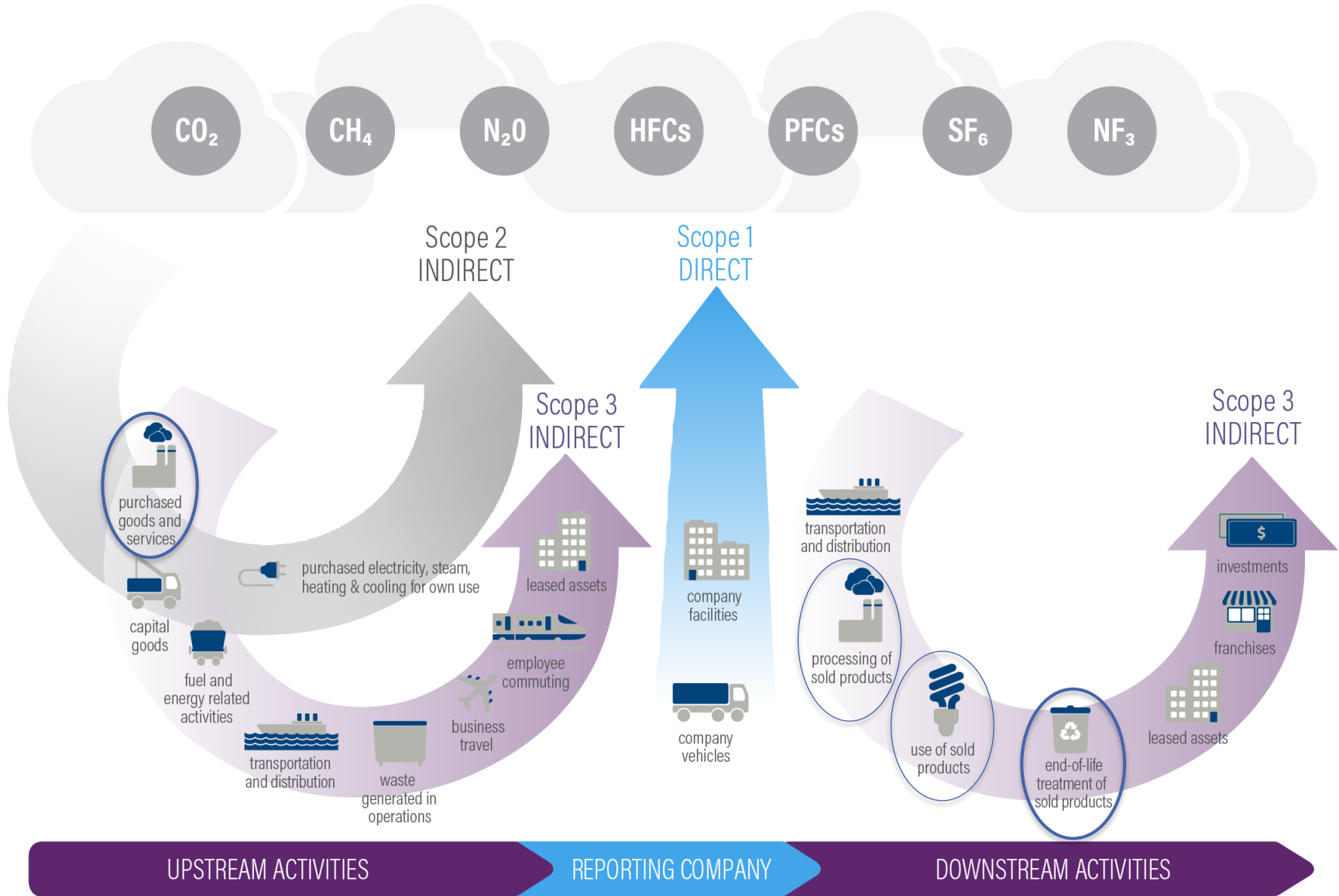
- Expressed based on energy / GHG mitigation basis
- Includes renewables

## Advantages

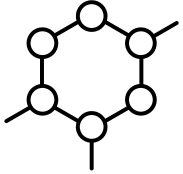
- Within control of chemical companies
- Diversity of applications
- Data availability
- Preference of chemicals sector

# Next Steps

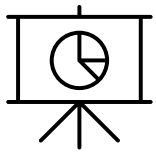
# CHEMICALS SECTOR VALUE CHAIN PRIORITIES



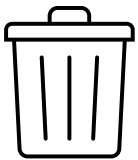
# FOCUS AREAS FOR NEXT PHASE WORK



**Develop a chemicals sector SDA.** Unlike the SDA for steel or cement, the proposed chemicals sector SDA would include specific emissions intensity pathways for the largest product categories (ammonia, ethylene, methanol, propylene, BTX, hydrogen) as well as one or more residual physical intensity approach(es) for the thousands of other chemicals products, perhaps using a non-specified physical intensity contraction approach similar to SBTi's treatment of vehicle manufacturing.



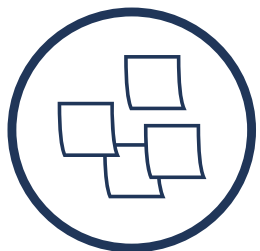
**Improve chemicals sector scope 3 data resources.** To address the chemicals sector's high degree of fossil feedstock use, heterogeneity, and prevalence of intermediate products trade, additional accounting and target-setting resources should be developed for key upstream and downstream emissions sources (scope 3, categories 1, 10, 11, and 12 ).



**Develop end-of-life accounting and target-setting approaches for chemicals.** While a growing number of companies across sectors are focusing on their category 1 (purchased goods and services) emissions, chemicals companies are uniquely positioned to increase the share of recycled materials. Consistent boundary and accounting approaches across categories 12 and 1 could facilitate inclusion of these targets into chemicals companies' SBTs. Facilitate inclusion of these emissions categories into companies' SBTs.



# PHASE TWO DEPENDENCIES



**Funding**



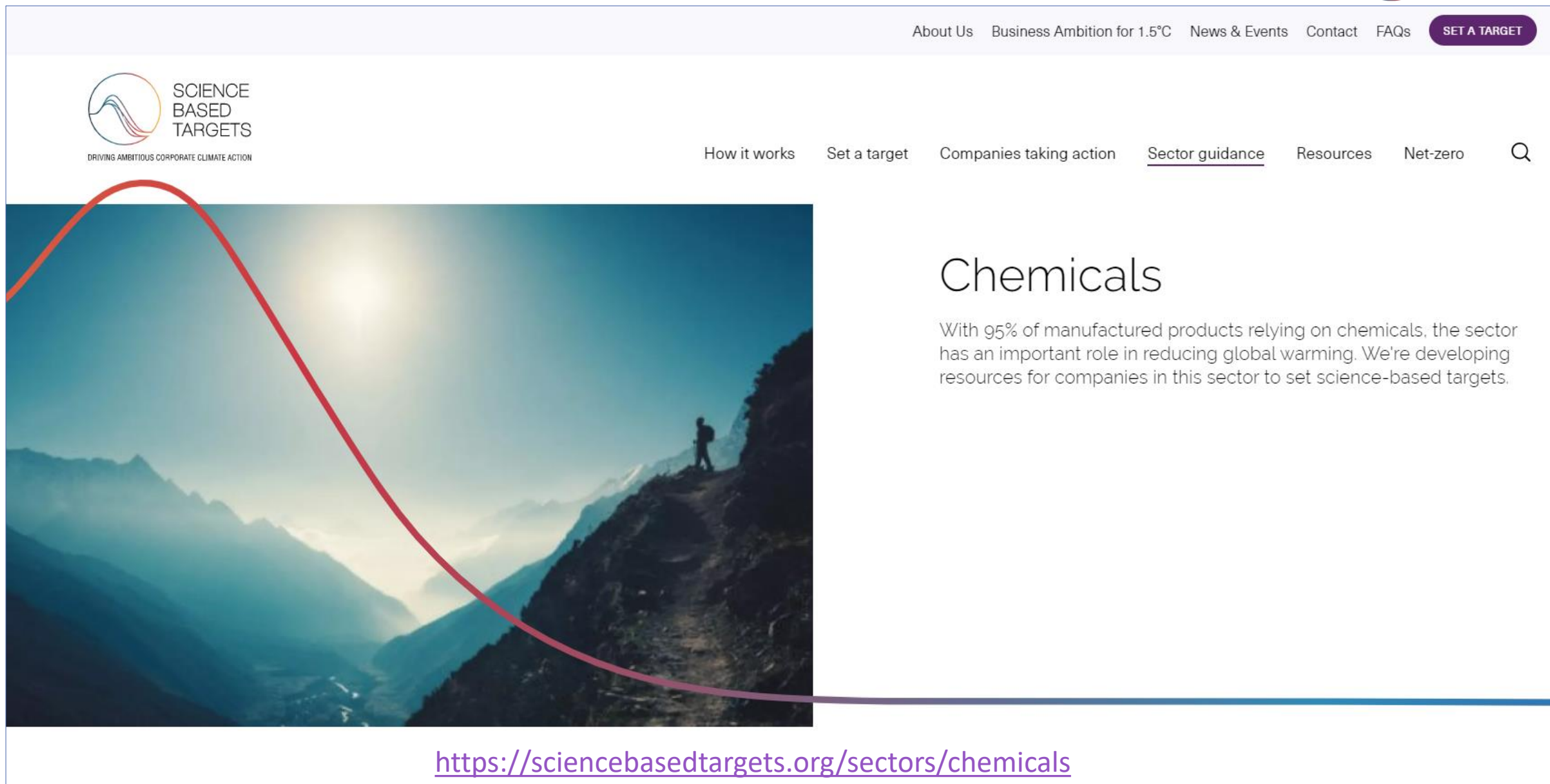
**External Collaboration**



**SBTi Strategy**



# FOR MORE INFORMATION, SEE OUR PROJECT WEBSITE

A screenshot of the Science Based Targets website. The header includes navigation links: "About Us", "Business Ambition for 1.5°C", "News & Events", "Contact", "FAQs", and a purple "SET A TARGET" button. The main navigation bar contains "How it works", "Set a target", "Companies taking action", "Sector guidance" (which is underlined), "Resources", and "Net-zero", followed by a search icon. The main content area features a large image of a hiker on a mountain trail with a red curve overlaid, representing a climate trajectory. To the right of the image is the heading "Chemicals" and a paragraph: "With 95% of manufactured products relying on chemicals, the sector has an important role in reducing global warming. We're developing resources for companies in this sector to set science-based targets." At the bottom of the screenshot is the URL <https://sciencebasedtargets.org/sectors/chemicals>.

About Us Business Ambition for 1.5°C News & Events Contact FAQs SET A TARGET

SCIENCE BASED TARGETS  
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

How it works Set a target Companies taking action Sector guidance Resources Net-zero

## Chemicals

With 95% of manufactured products relying on chemicals, the sector has an important role in reducing global warming. We're developing resources for companies in this sector to set science-based targets.

<https://sciencebasedtargets.org/sectors/chemicals>


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