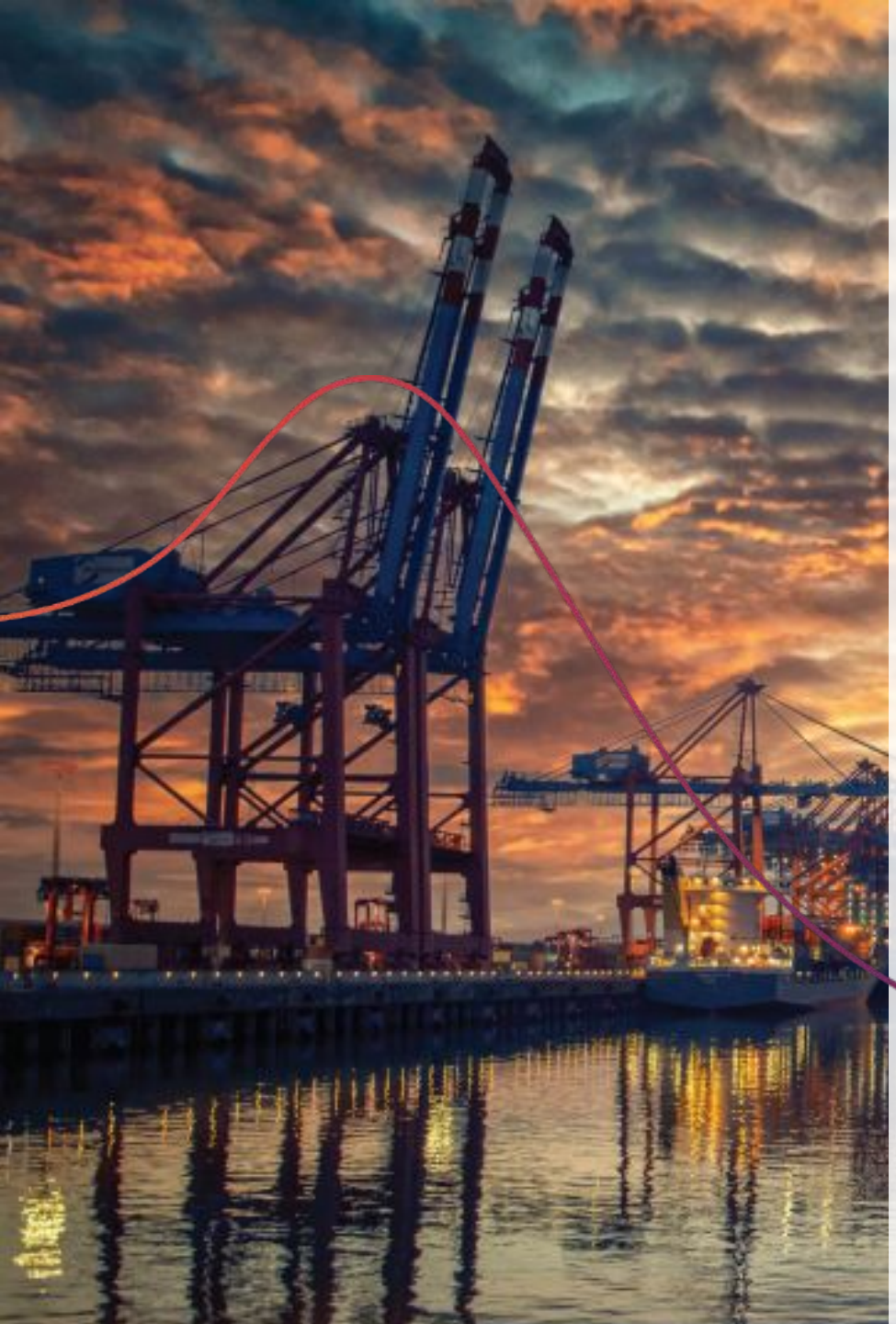

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

SBTi CHEMICALS SECTOR GUIDANCE

Launch of First Public Consultation

Mike Danielson
Sector Standards Team – SBTi

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Stakeholder Engagement Senior Manager

And others!

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

AGENDA

- About the SBTi
- Overview of the Chemicals Sector Guidance
- Discussion
  - Sector specific emissions intensity and other methods
  - Sector specific scope 3 methods and guidance
  - Non-emissions metrics
  - Target-setting tool
- Overview of consultation process
- Next steps

ABOUT THE 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).

PARTNERS

CDP
DISCLOSURE INSIGHT ACTION

UN GLOBAL COMPACT
United Nations
Global Compact

WE MEAN
BUSINESS
COALITION

WORLD
RESOURCES
INSTITUTE

WWF

Data from the SBTi's website

OUR IMPACT

AS OF APRIL 2024

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

5,135+

with science-based targets

7,920+

businesses with science-based targets and commitments

3,085+

net-zero commitments


SCIENCE
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TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION
OVERVIEW OF THE
CHEMICALS SECTOR
GUIDANCE

OVERVIEW OF THE CHEMICALS SECTOR GUIDANCE

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

The SBTi is releasing its first sector-specific resources for the global **chemicals sector** for an initial public consultation period

1	**Draft SBTi Chemicals Sector Guidance document**	• Contains criteria for companies in the chemicals sector to follow when setting science-based targets • Applicability of the guidance and of individual criteria are described in the guidance document
2	**Supplemental data memorandum on the sources of data for the proposed Sectoral Decarbonization Approach (SDA) target-setting pathways for primary chemicals**	• Contains a detailed description of how the SBTi derived the proposed target-setting pathways for the production of certain chemicals described further in this presentation
3	**Draft Target-setting Tool for the Chemicals Sector**	• A Microsoft Excel based tool for companies to use in calculating sector-specific targets as outlined in the chemicals sector guidance

OVERVIEW OF THE CHEMICALS SECTOR GUIDANCE

PROJECT DEVELOPMENT TIMELINE

SCIENCE BASED TARGETS
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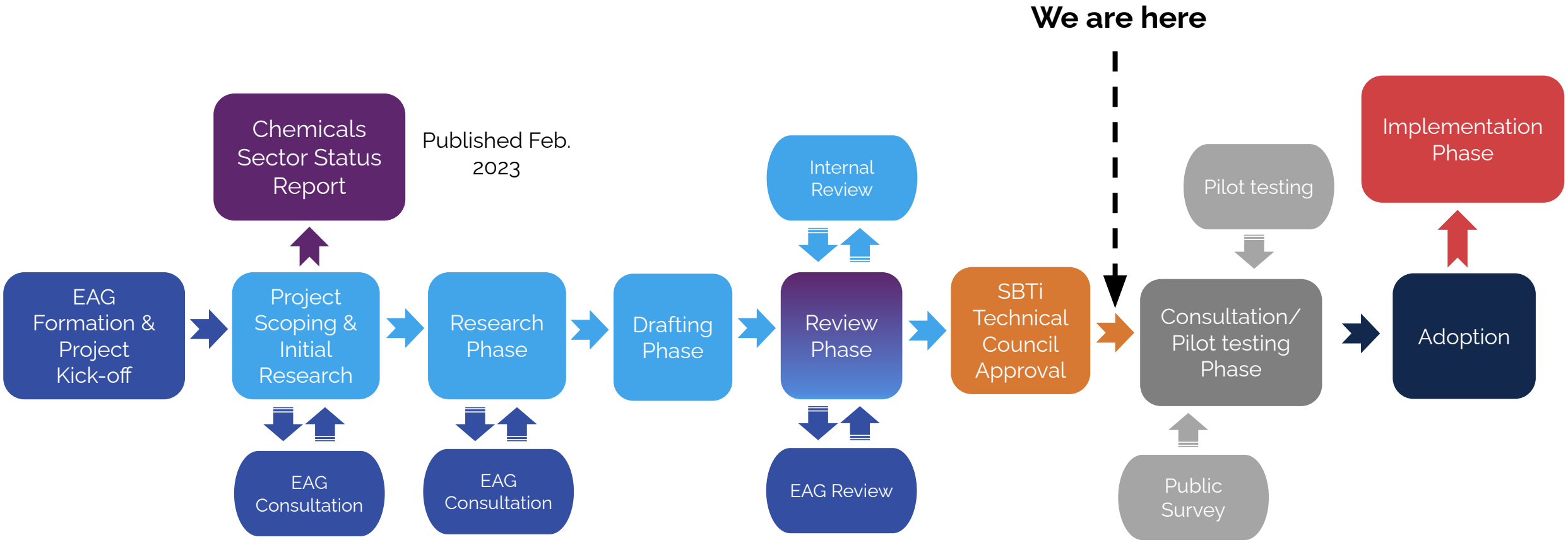

OVERVIEW OF THE CHEMICALS SECTOR GUIDANCE

WHY DEVELOP A SECTOR-SPECIFIC CHEMICALS STANDARD?

SCIENCE BASED TARGETS
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~ 4% of global GHG emissions

3rd highest industrial emitter of GHGs and demand for chemicals is expected to rise.
1.33 Gt direct CO_2 in 2022

Largest consumer of energy

When both fuels and feedstocks are considered

Energy intensive processes

The production of "**base**" or "**primary**" chemicals involve energy intensive processes and sometimes release "**process emissions**"

Primary Chemicals: Ammonia, methanol, high-value chemicals (ethylene, propylene, benzene, toluene, xylene)

Process Emissions: CO_2 or CH_4 emissions originating from carbon in raw materials, rather than from combusted fuels

Complex value chain

Scope 3 emissions in the chemicals value chain are significant, complex to measure and difficult to mitigate due to the inherent carbon content of most products. Use phase and end-of-life emissions can be high

IEA. (2023b). *Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach. License: CC BY 4.0. IEA, Paris.*

CHEMICALS SECTOR SCOPE

WHAT PRODUCTS ARE COVERED BY THE DRAFT GUIDANCE?

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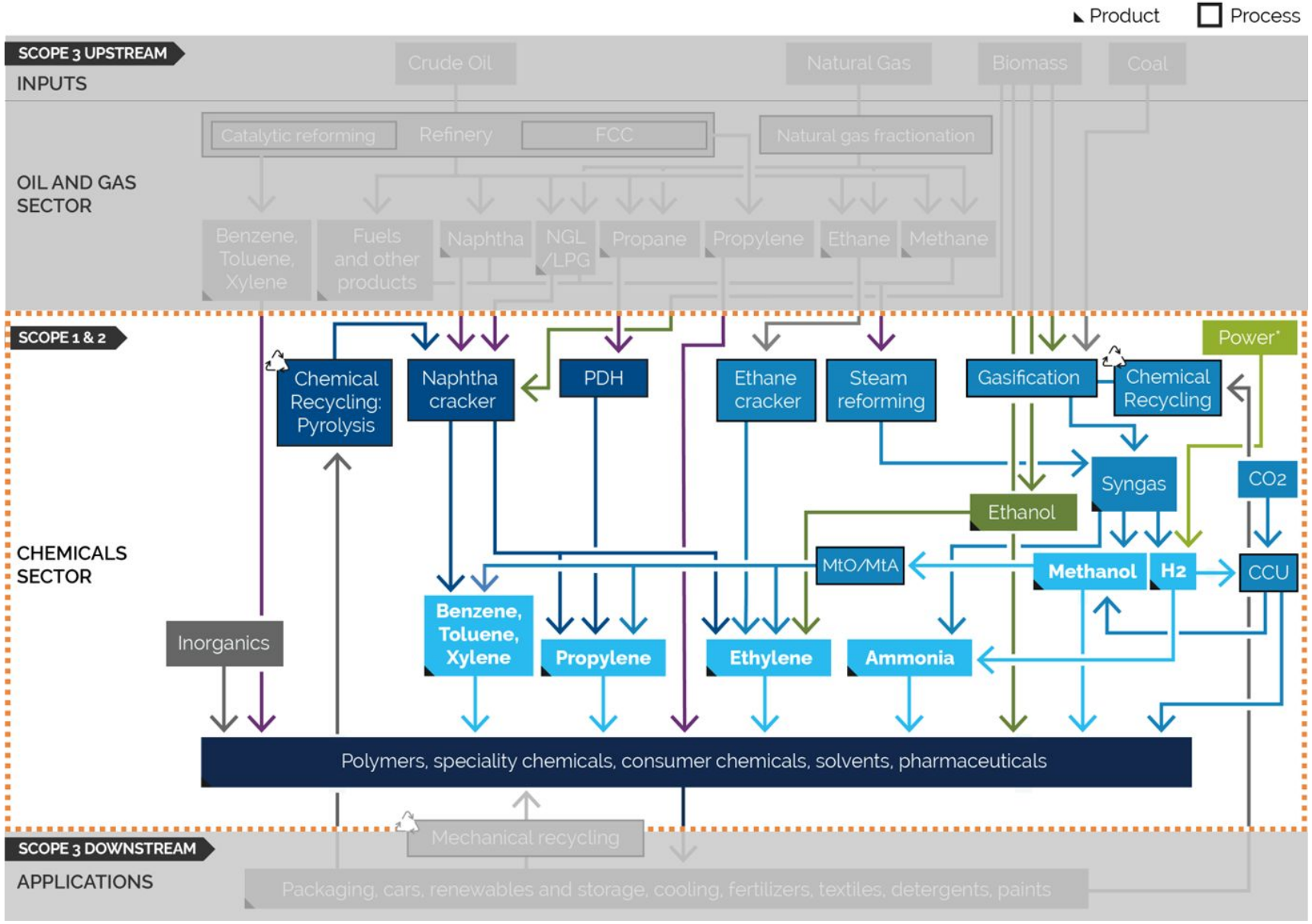

1) **Primary Chemicals***
2) **Other base chemicals**
3) **Intermediate chemicals**
4) **Specialty chemicals**
5) **Pharmaceuticals**
6) **Consumer chemicals**
7) **Chemical recycling activities**

Definitions for these products and details of the guidance applicability are described in the consultation draft.

**Hydrogen (H_2) production is considered part of the production of methanol and ammonia.*
More details on hydrogen production are included in the consultation draft.

OVERVIEW OF THE CHEMICALS SECTOR GUIDANCE

SUMMARY OF CONTENT

SCIENCE BASED TARGETS
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Direct Sector Emissions

- Individual emissions intensity convergence pathways for each primary chemical (ammonia, methanol, and high-value chemicals).
- Other specific pathways where cross-sector ambition is inadequate or inappropriate.
- Sector-specific accounting guidance.

Sector Scope 3 Emissions

- Sector or sub-sector pathways on categories where cross-sector pathway is inadequate or inappropriate.
- Sector specific target boundary coverage.
- Sector specific accounting requirements, recommendations and/or guidance.

Non-emissions Metrics and Other Guidance

- Target-setting method(s) to incentivize shift away from fossil-based feedstocks towards alternatives (bio-based, recycled, and CCU-based products).
- Guidance on topics relevant to the chemical sector, where not provided in other resources.

Chemicals Sector Guidance

- Criteria and recommendations for companies in the chemicals sector to set SBTs.
- Complementary to the SBTi's Corporate Net-Zero Standard and other sector-specific resources.

Chemicals Sector Target-Setting Tool

- Excel-based tool for use in setting targets based on the sector-specific methods included in the Chemicals Sector Guidance.


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DISCUSSION

CHEMICALS SECTOR RESOURCES – SDA METHOD

SCIENCE BASED TARGETS
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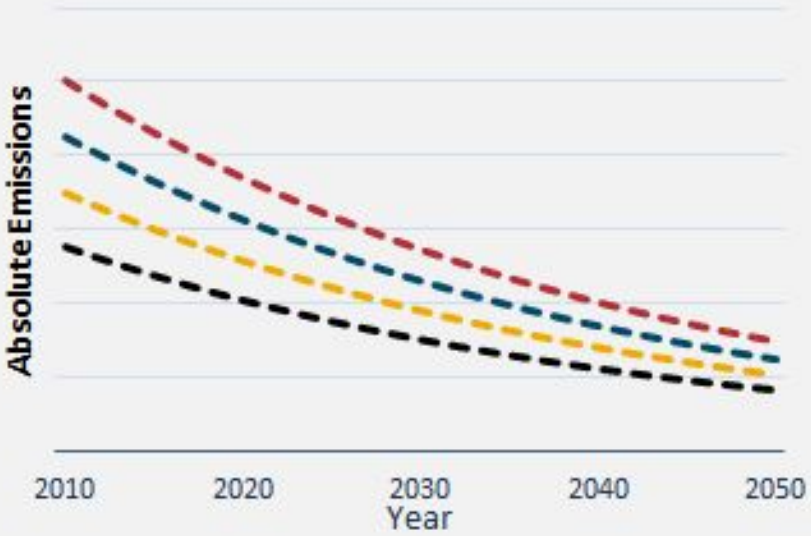
Absolute-based approach

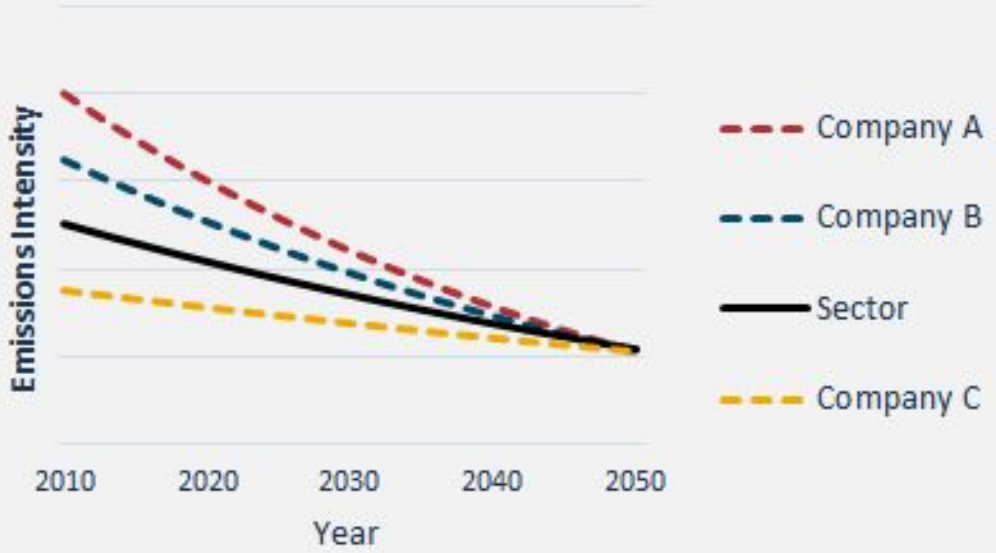
- All sectors (except power gen)
- Equal % of reduction
- IPCC carbon budgets scenarios

Sector-based approach

- Homogeneous sectors
- Different % of reduction
- Sectoral carbon budgets (e.g. IEA)



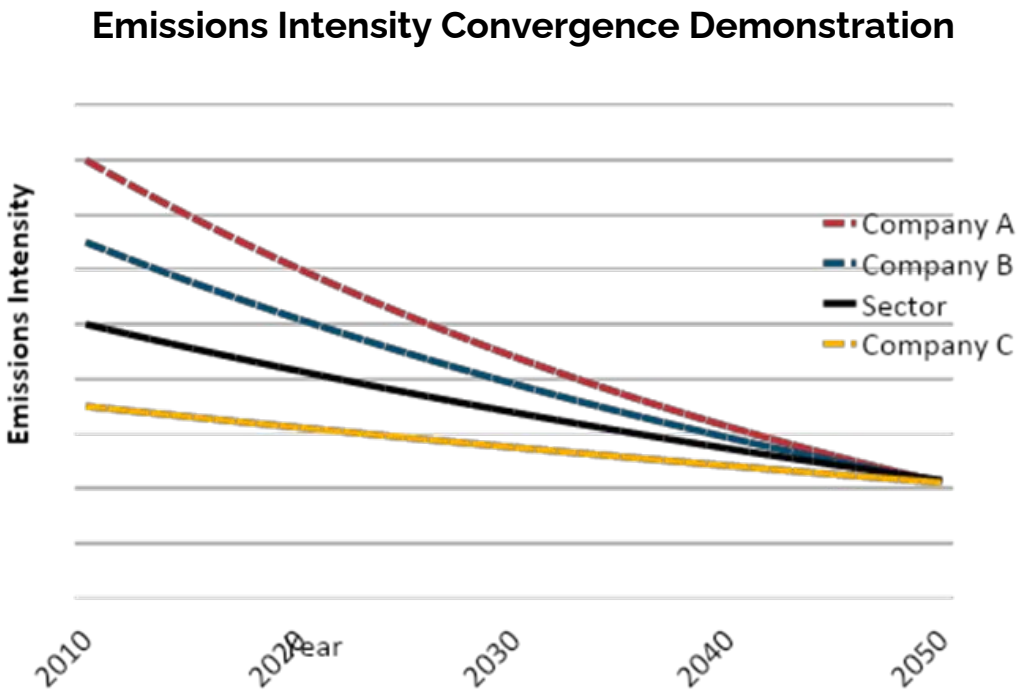
Reduction



Sectoral Decarbonization Approach (SDA)*

* Developed by the SBTi

EMISSIONS INTENSITY CONVERGENCE TARGETS



- Production of **primary chemicals** accounts for **~70% of total direct emissions** from the sector.
- The SBTi's emissions intensity convergence method (SDA) is **intended for homogeneous sectors**, where a comparable activity metric can be established.
- A single emissions intensity convergence pathway cannot be set for the sector, or for total primary chemicals. **The products are not homogeneous.**
- We are developing **separate sub-sector** emissions intensity pathways for each **primary chemical group**:
  - Ammonia.
  - Methanol.
  - High-value chemicals (ethylene, propylene, benzene, toluene, and xylene).
- Pathways in consultation draft are based on the IEA's NZE scenario. **See the supplemental data memorandum for more detail.**

OTHER SECTOR-SPECIFIC SCOPE 1 EMISSIONS TARGETS

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The **production of nitric acid (HNO_3)** is a source of industrial N_2O emissions, via undesirable side reactions in the production process:

Nitric Acid Reaction Path:

Nitric acid product

$$4\ NH_3 + 5\ O_2 = 4\ NO + 6\ H_2O \rightarrow 2\ NO + O_2 = 2\ NO_2 \rightarrow 2\ NO_2 + H_2O = \mathbf{HNO_3} + HNO_2$$

Undesired Side Reactions:

N_2O Emissions

$$4\ NH_3 + 4\ O_2 = 6\ H_2O + 2\ \mathbf{N_2O}$$

$$4\ NH_3 + 3\ O_2 = 6\ H_2O + 4\ N$$

- Emissions of **N_2O** from nitric acid production can be effectively, and affordably, abated
- To incentivize companies to take action to abate these emissions, a target will be proposed to specifically cover scope 1 N_2O emissions from nitric acid production based on a company-wide average emissions benchmark
- The target will be applicable only if it results in a more ambitious emissions reduction than the SBTi's cross-sectoral absolute emission reduction pathway over the same period

SCOPE 3 CRITERIA, RECOMMENDATIONS AND GUIDANCE

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Sector Specific Scope 3 Criteria

1

Target-setting on N_2O Emissions from the use-phase of Nitrogen-based fertilizers (N-fertilizers)

- N-fertilizers are a major downstream product of ammonia producers.
- N-fertilizers produce significant N_2O emissions when applied to the field, resulting in significant scope 3 category 11 emissions for the chemicals sector.
- N_2O emissions from the field are tied to future agricultural demand needs, and mitigation options are relatively limited.
- The SBTi is proposing **sector-specific pathways** for chemical companies to use in setting near and long-term scope 3 category 11 targets on N_2O emissions from N-fertilizer use.

2

Minimum target coverage for scope 3 category 1 emissions from purchased primary chemicals

- Inclusion of a **mandatory target coverage** of scope 3 category 1 for primary chemical producers and primary chemical purchasers.
- Purpose is to avoid companies excluding emissions from primary chemicals, and their feedstocks, by moving from a producer to a purchaser.

3

Minimum target coverage for scope 3 category 11 emissions from urea fertilizers

- The production of urea involves the capture and immediate use of CO_2 from ammonia production.
- This carbon is later released in the use-phase when the urea is used in fertilizers.
- Inclusion of **mandatory target coverage** on scope 3 category 11 CO_2 emissions from urea fertilizers.

SCOPE 3 CRITERIA, RECOMMENDATIONS AND GUIDANCE

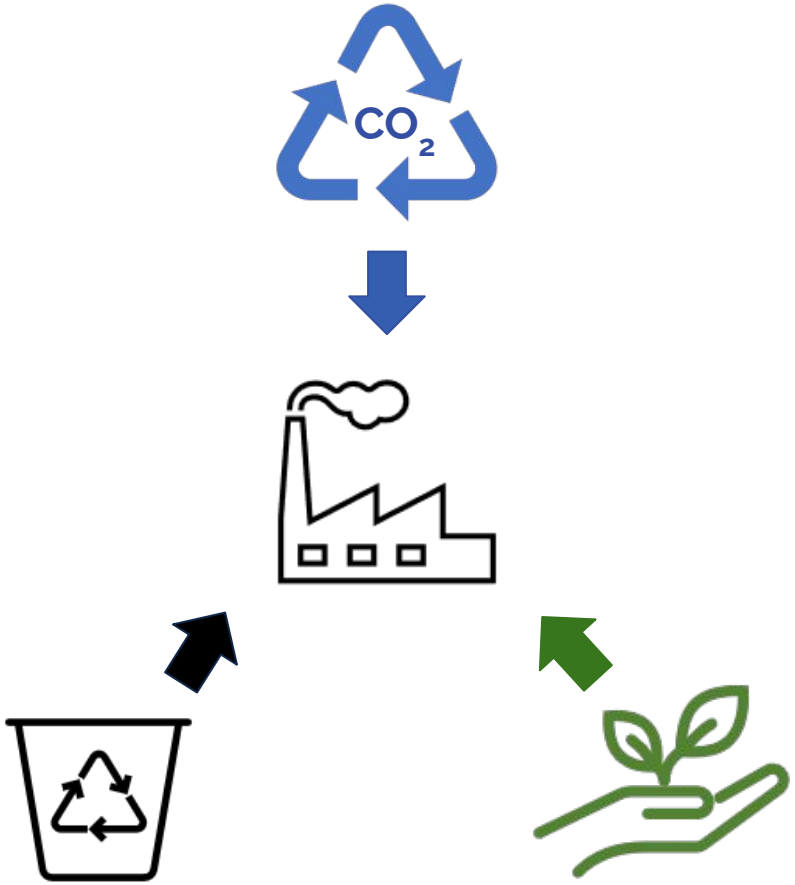
SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Sector Specific Guidance - GHG Accounting

1. Accounting for use-phase and end-of-life emissions from certain sold products.
1. Emissions from scope 3 categories 10, 11, and 12.
1. Using the mass balance approach in GHG accounting.
1. Accounting for emissions associated with bio-based material.
1. Accounting for emissions associated with CCU-based material.
1. Accounting for emissions from recycling processes.

Sector relevant guidance has been included to aid companies in interpreting the requirements and understanding the SBTi's expectations.

NON-EMISSIONS METRICS: ALTERNATIVE FEEDSTOCKS



In the consultation draft, the SBTi has included requirements for chemical companies to set an **alternative feedstock target** on shares of feedstocks from:

- **Carbon capture and utilization (CCU) based, including DAC.**
- **Bio-based.**
- **Chemical recycling based.**

Does not include mechanical recycling of plastics: This is considered a demand reduction lever outside scope of the chemicals sector.

1. The target method will establish a **minimum expectation for total percent of carbon in feedstocks** from an alternative source in the target year.
2. This target **will not replace scope 3 emissions targets** to ensure emissions do not increase due to the shift in feedstocks.
3. Companies will be encouraged to **set more ambitious targets** to reflect their transition strategies.

DRAFT CHEMICALS SECTOR TARGET-SETTING TOOL

SCIENCE BASED TARGETS
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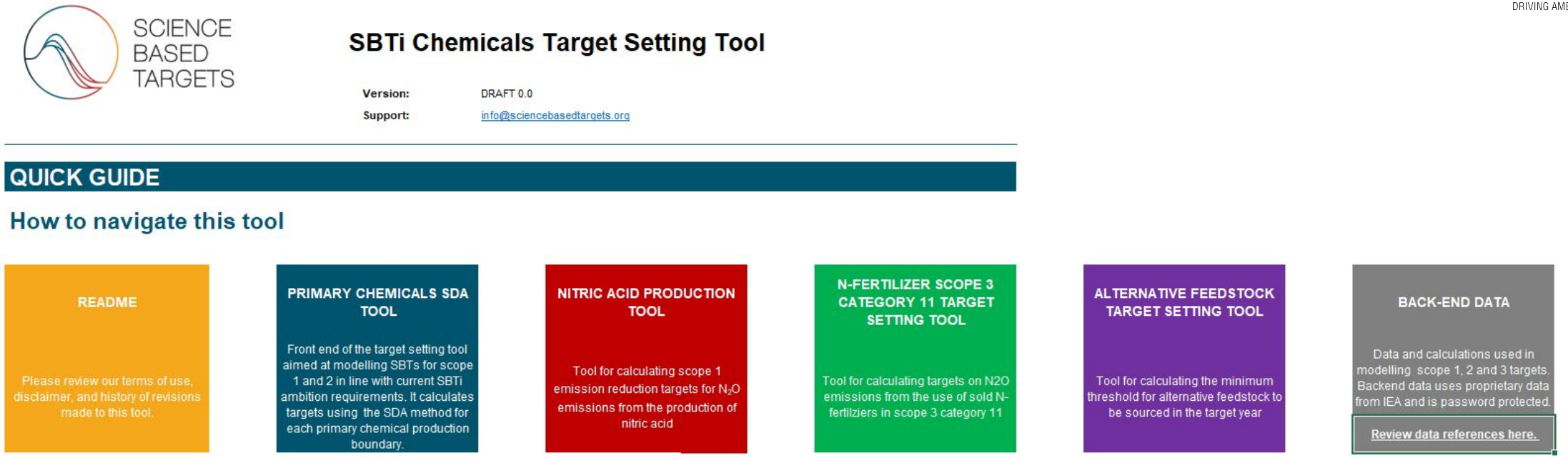

The SBTi is publishing **a draft Excel-based tool for consultation** that can be used to **calculate sector-specific targets** as described in the consultation draft of the chemicals sector guidance. The tool can be used to calculate:

- SDA targets on emissions from the production of each primary chemical.
- Targets on scope 1 emissions of N_2O from nitric acid production.
- Targets on N_2O emissions in scope 3 category 11 from the use-phase of sold N-fertilizers.
- Targets on sourcing of alternative feedstocks.


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OVERVIEW OF
CONSULTATION PROCESS

WE WANT TO HEAR FROM YOU!

SCIENCE BASED TARGETS
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The SBTi is asking for **your help** to review and provide feedback on the consultation draft! Please **see the chemicals sector page** on the SBTi's website **for the dates of the 60-day consultation period.**

https://sciencebasedtargets.org/sectors/chemicals

1

Please see the documents for consultation published on the SBTi's website:

- Draft SBTi Chemicals Sector Guidance document.
- Supplemental memorandum describing the sources of data for the proposed Sectoral Decarbonization Approach (SDA) target-setting pathways for primary chemicals.
- Draft Target-Setting Tool for the Chemicals Sector.

2

Use the **survey** linked on the website to provide your feedback on specific questions, as well as provide general feedback.


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NEXT STEPS

NEXT STEPS*

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Future publications:

- Synthesis report of 1st public consultation feedback.
- Additional public consultation drafts.
- Final chemicals sector guidance and supporting resources.

**The timelines presented here are tentative and are subject to change*

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THANK YOU

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