



## Science Based Targets Chemical Sector Guidance May 2017

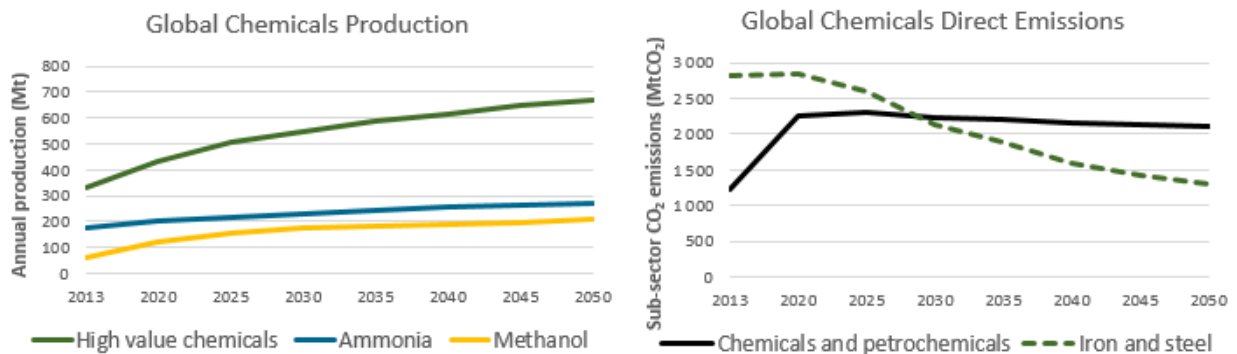
**Providing clarity to chemical companies on setting targets aligned with the level of decarbonization required to keep global temperature increase well below 2°Celsius.**

### I. The Challenge

In December 2015, nearly 200 countries adopted the Paris Agreement, the first-ever universal climate agreement that seeks to “strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2°Celsius above pre-industrial levels.” On a global level, the Paris Agreement requires greenhouse gas (GHG) emissions to peak around 2020 followed by a rapid decline in emissions until carbon neutrality is reached in the second half of this century.

The chemicals sector plays an important role in the transition to a low-carbon economy. While chemical products are expected to contribute to the well-below 2-degree outcome described in Paris, emissions related to chemicals production will need to be reduced to maintain global emissions budgets. IEA Energy Technology Perspectives data indicate that current CO<sub>2</sub> emissions from the chemical and petrochemical sectors (scope 1 and 2) are close to 6% of global energy-related CO<sub>2</sub> emissions. As illustrated below (Figure 1), production is expected to grow through 2050 while total CO<sub>2</sub> emissions drop after 2020, though not as fast as the iron and steel subsector, which is forecast to be surpassed by chemicals as the largest-emitting industrial subsector in 2030.

Figure 1: Global chemicals sector production and direct emissions under a 2-degree scenario (2013-2050)



Source: IEA (2016); note that production data cover 3 subcategories while emissions are from a broader scope of chemicals sector activities.

By the end of 2016, over 110 countries representing almost 80% of global emissions ratified the Paris Agreement plan to reduce emissions. However, the level of ambition in the commitments presented by countries is expected to lead to temperature increases of approximately 3°Celsius by the end of the century.<sup>1</sup> By setting science-based targets and joining pro-active policy initiatives, companies are stepping up to bridge the gap between country commitments and the goals of the Paris Agreement. Given the heterogeneity of chemicals production, and use of fossil-based feedstocks, a challenge in this sector is standardizing metrics and methods for companies to align their targets with global well-below 2-degree pathways.

## II. The Opportunity

Chemical companies are increasingly orienting toward climate solutions. In a [2015 survey](#), 85% of chemical companies reported having a sustainability strategy—more than any other industry covered, and a 70% increase from 2009. In the same 2015 survey, 95% of chemical company executives reported that investors were paying closer attention to sustainability performance—yet only 36% said their company had developed a clear value proposition for sustainability. As of April 2017, ten chemicals companies have committed to setting science-based targets (SBTs) via the Science Based Targets initiative (SBTi).<sup>2</sup>

Catalyzing chemicals company low-GHG transformation will require improved metrics and science-based target setting methods. Two sector-specific options are to elaborate on existing IEA and other data to develop product intensity pathways, or to take a more top-down sector and company emissions budget approach that also includes negative emissions technology deployment (e.g., allocating cumulative 2015-2050 company net emissions based on sector shares and linear trajectory assumptions). The first chemicals companies to adopt and implement SBTs will set the precedent for peer companies.

## III. Strategy and Objectives

The SBTi is a collaboration between CDP, the United Nations Global Compact, the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF) that provides a consistent vision and approach on how corporations can set ambitious GHG reduction targets aligned with the goal of keeping global warming below 2°Celsius. By making science-based target setting a standard business practice, companies will contribute to closing the emissions reductions gap and do their part in the transition to the low-carbon economy.

The SBTi strategy to turn science-based target setting into standard practice has three pillars: reduce barriers, institutionalize target adoption, and scale up a critical mass of participating companies. To scale up company adoption of SBTs and resulting emissions reductions, the initiative is developing a series of additional sector-specific target setting methods. WRI is leading the chemicals sector method development and guidance. This guidance is intended to reduce barriers for chemicals sector companies related to the heterogeneity of production and value-chain-related emissions.

<sup>1</sup> Rogelj, J. et al. 2016. “Paris Agreement climate proposals need a boost to keep warming well below 2°C. *Nature* 534, 631–639.

<sup>2</sup> Note that this list does not include pharmaceutical manufacturers or oil and gas companies. Publicly committed chemicals companies include: Aditya Birla Chemicals India Ltd, AkzoNobel, Borregaard AS, Diab International AB, Firmenich SA, Givaudan SA, Lotte Chemical Corporation, PTT Global Chemical, Symrise AG, Zeon Corporation.



The new chemicals sector materials will provide much-needed clarity on best practices for value chain accounting and reporting, subsector production categories, best practices, and target-setting methods. The guidance document will also include discussion of mitigation and negative-emissions technology options for chemicals sector alignment with a 2-degree pathway, thereby driving transparent GHG target-setting and reduction activities around this increasingly dominant sector. Target outcomes include:

- By 2020, 30 chemicals companies have set science-based targets and are managing their value chain impacts toward attaining those targets.
- By 2022, more than 20 companies that purchase chemicals as intermediate products are using the new materials to reduce their upstream emissions.

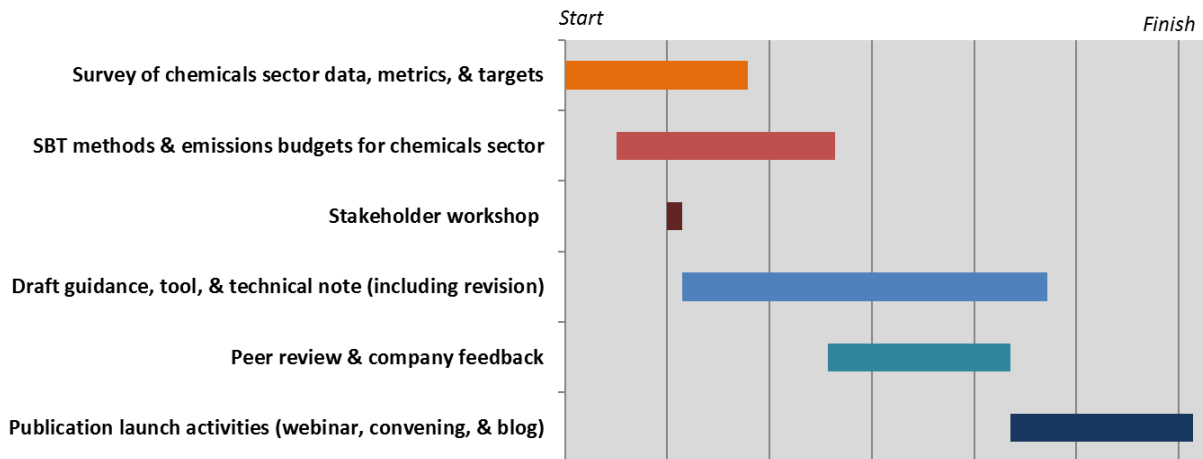
#### IV. Deliverables

Since launching in 2014, the initiative has successfully delivered guidance, tools and technical assistance to facilitate the adoption of science-based targets. Our planned work for 2017 and beyond builds on these achievements. Final chemicals sector deliverables will depend on method selection and partner organizations, but will include a target-setting tool, a guidance document for companies, and an accompanying technical note.

- The **target-setting tool** will reduce chemicals sector barriers by clearly presenting historical baseline and future 2-degree-scenario emissions and production data for company consideration. It will be freely available on the SBTi website.
- The **guidance document** will be a chemicals-sector version of the broader guidance document available on the SBTi website. It is intended to provide how-to information for chemicals companies wishing to set science-based targets.
- The **technical note** will provide further information on emissions scenarios, mitigation options, and implications of target-setting methods. Production growth scenarios, sector boundary definitions, scope 3 accounting, and avoided emissions are other topics that also may be included.

The Gantt chart below (Figure 2) illustrates the sequence and process that will determine final deliverables.

Figure 2: Gantt chart of chemicals sector tasks, milestones, and deliverables



The guidance development process will begin with a 3-month scoping phase and last 16 months. During the scoping phase, WRI will work closely with chemicals sector companies to identify existing approaches and barriers for chemicals companies to set credible science-based targets. The scoping process will also be used to gather feedback on the guidance development process and identify key stakeholders to engage. To gain company buy-in and initial feedback, a stakeholder workshop will be held early in the project. Once the scope of the guidance and approach are finalized, they will be developed through an inclusive multi-stakeholder process. SBTi peers, companies, and other stakeholders will have an additional opportunity to provide feedback via written review. The project will conclude with publication of the tool, guidance document, and technical note on the SBTi website, as well as a series of launch activities including a webinar and social media campaign.

## V. Budget

The budget estimate for this project is \$250,000. It includes \$210,000 for WRI, who will lead the project, and \$20,000 each for SBTi partners CDP and WWF, to provide coordinated development, review, and input on the materials produced.

A more detailed budget breakdown is available upon request.

## VI. Project Contacts

For any comment or question on this concept note please contact the Steering Committee at [partners@sciencebasedtargets.org](mailto:partners@sciencebasedtargets.org) or contact one of the staff members below:

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