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**Establishing science-based
emissions reduction targets
for insight, innovation, risk
management, and competitiveness**

What is a science-based target?

Overview

| | |
|-------------------|--|
| Definition | <ul style="list-style-type: none"> Greenhouse gas (GHG) emissions reduction target that meets the level of decarbonization required to keep global temperature increase below 2 degrees Celsius from pre-industrial levels¹ Science-based targets work backward from the global temperature increase ceiling—intended to limit the most severe impacts of climate change—to identify specific emission reduction pathways according to individual companies and the sectors in which they operate |
| Benefits | <ul style="list-style-type: none"> Promote innovation Mitigate risk Identify hot spots Enhance reputation |
| Other | <ul style="list-style-type: none"> May also be referred to as “science-based goal,” “context-based goal,” or “context-based target” |

Background

Sustainability, and climate change more specifically in this case, are no longer buzz words or unfamiliar concepts. Rather, they are what we hear and read about from the global media on a daily basis, whether positive or negative. In fact, more companies today—836 according to We Mean Business—are committed to broad action on climate change than ever before.²

Companies are accelerating their climate change agendas because companies are recognizing that such action offers myriad opportunities to realize tangible business benefits such as cost savings, risk resilience, employee recruitment and retention, customer or consumer attraction, and more.

Yet while many companies continue to set absolute or intensity GHG emissions reduction target, these targets are usually arbitrary and typically conservative. And while 89 percent of the more than 1,000 companies that participated and disclosed data via the 2017 CDP Climate questionnaire have already set targets for emissions reduction, only 20 percent have set emission reduction targets that extend to 2030 or beyond.³

Likewise, the keystone of the Paris Agreement, or the global goal of keeping the global average temperature from rising 2-degrees Celsius from pre-industrial revolution levels by the end of the century, is already at risk of breaking. One recent study in *Nature* concluded that there is 95 percent likelihood the planet will warm more than 2-degrees by the end of the century, and another study published in *Geophysical Research Letters* found that 1.5-degrees C may be exceeded as early as 2026.⁴ The Intergovernmental Panel on Climate Change's (IPCC) recent progress report highlighted that we are “already seeing the consequences of 1-degrees C of global warming through more extreme weather, rising sea levels and diminishing Arctic sea ice, among other” and that limiting to 1.5-degrees C will take rapid changes.⁵

But a more sophisticated emissions reduction target setting process is catching on and is a development that adds context and perspective to how GHG targets can add to greater positive impact for both key business metrics and the risks of climate change.

Definition

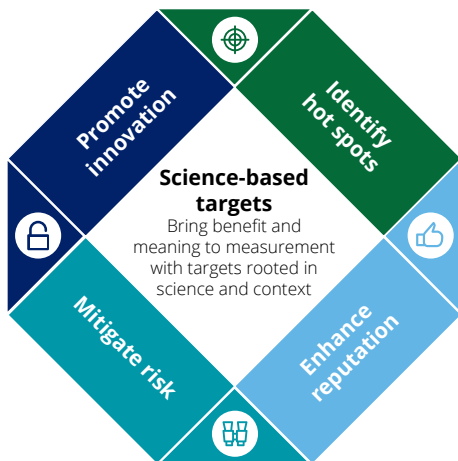
A science-based GHG emissions target, or science-based target, has the objective of keeping the rise in global temperature below two degrees Celsius from pre-industrial levels, a level widely accepted and detailed in the Fifth Assessment Report (AR5) of the IPCC.

Rather than allowing individual companies to determine baseline year, target year, and the ultimate reduction target, setting a science-based target leverages publicly available methodologies that are based on the latest climate science. This involves establishing targets in the context of the 2-degrees Celsius goal and, depending on the approach selected, in the context of a company's individual industry sector and market share as well. And to date, 14 percent of CDP respondents (5 percent growth over one year ago) have committed to or have formally adopted such science-based targets.

Should my company set a science-based target?

Potential benefits

The science-based method can help remove the arbitrary approach to setting GHG reduction targets and replaces it with an approach governed by an agreed upon global target that can enable companies to set aggressive yet reasonable goals considering their standing in the global economy. The core benefits of science-based targets include innovation, risk mitigation, hot spot identification, and reputation enhancement.



“Investors are taking note of how serious companies are about mitigating business risks relating to climate change. A case in point: a major Fortune 100 financial services organization and retirement provider doubled its stock portfolio investment with HP, thanks in part to our commitment to set science-based targets.”

Nate Hurst, Chief Sustainability and Social Impact Officer, HP Inc.⁶

Innovation

For many companies, the GHG emissions reduction target setting process is still arbitrary and based on projects already planned. But this tends to limit company ambition and drive for innovation, and as a result, the potential of a business to reduce emissions and associated costs may never be realized. On the other hand, science-based targets challenge a business to see how much it can improve. Setting a target tied to science can:

- Promote bolder business solutions that fit within company DNA to advance execution against science-based targets, and
- Enhance revenue and lower operational costs by developing new business models and low-carbon processes, technologies, services, products and other sources of value.

Hot spot identification

Guidelines for setting science-based targets are adaptable, meaning a company can choose to set a scope 1 (i.e., direct emissions) and/or scope 2 (i.e., energy indirect emissions) target, as well as separate scope 3 (i.e., indirect emissions upstream and downstream in the supply chain) target or targets. Such an approach can help a company to:

- Identify science-based emission reduction trajectories for carbon “hot spots” in value chains, driving improved insight and ability to manage scope 3 emissions, and
- Uncover opportunities to engage with suppliers and customers, strengthen partnerships, and reduce emissions across supply chains.

Risk mitigation

While still an emergent occurrence, more and more policies are trending towards mandatory GHG emissions limits and/or reporting, with 40 countries and more than 20 provinces, states, and cities having already implemented carbon taxes or emissions trading systems that collectively cover 20 percent of global GHG emissions.⁷ Proactively measuring and managing energy and emissions data across an organization is a necessary step for executing against an emission reduction goal and can help a company better prepare for:

- Potential shifts in regulation and policy, thus the reducing potential cost and reputational impacts of such changes, and
- Inherent risk in commodity price volatility, by reducing energy demand through energy efficiency measures and shifting the energy supply base through measures such as a renewable energy and longer-term contracts.

Reputation enhancement

Establishing a science-based target demonstrates a company’s advanced ambition and corporate responsibility agenda to various stakeholders. And it is a clear statement of a company’s recognition of the severity of the climate challenge and in taking proportional efforts to mitigate it. Such activity can:

- Boost employee retention and recruitment and correspondingly reduce replacement costs, and
- Deepen credibility with and the confidence of investors, customers, employees, policy-makers, and community members alike.

Outlook and action steps

Flexibility in target setting

Bolstering the aforementioned potential benefits is the general degree of flexibility that science-based targets affords companies, namely the ability to periodically adjust the target(s) due to shifts in company growth or in projected global budgets or carbon allocation. But moreover, with three core approaches, the science-based method enables companies to pick the appropriate approach for their situation.

Three approaches for flexibility

| | |
|--------------------------|---|
| Sector-based | Incorporates global business sectors and a company's specific value add contributions, with the global carbon budget divided by sector. |
| Absolute-approach | Assigns every company the same target (49 percent emissions reduction by 2050 from 2010 levels) as is required to remain within the global 2-degree temperature target. |
| Economic-based | Determines a company's carbon budget via its gross profit and the global carbon budget associated with global GDP. |



While there exists a variety of methodologies intended to support the generation of a science-based target for any one company, the sectoral approach is particularly applicable for companies that wish to take an approach that accounts for the nature of their business and industry. Such an approach sets a target in line with the 2 degrees scenario but also within the context of a company's individual industry sector and market share.

This more company-specific approach may be preferred to the absolute-based approach to science-based target setting, which simply applies the global standard

of a 49 percent emissions reduction by 2050 from 2010 levels. The sector-based method, on the other hand, provides an accurate GHG budget per sector, taking into account differences between sectors such as mitigation potential and activity growth relative to economic and population growth.

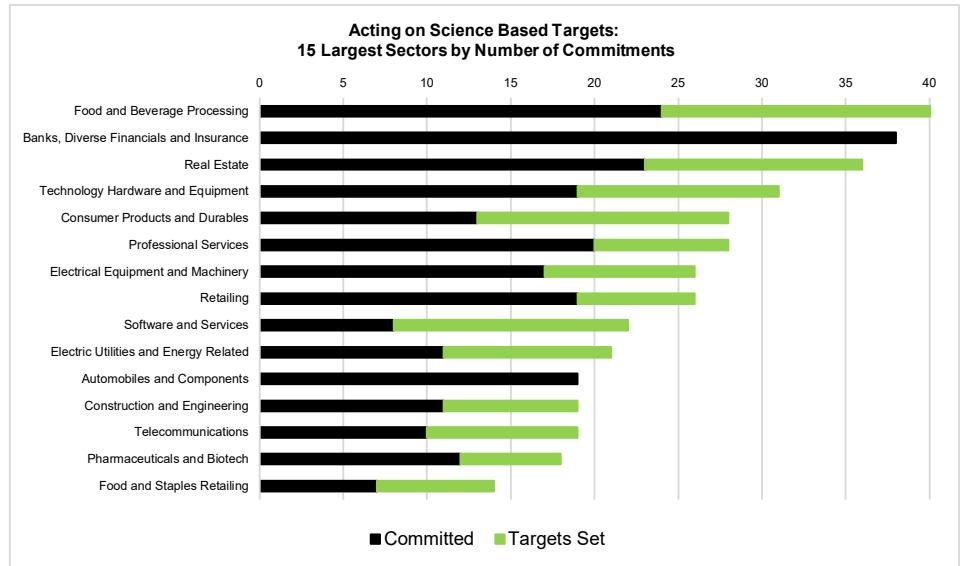
The bottom line? Science-based targets can spur deeper impact on a company's operational, financial, and cultural performance than more traditional, non-science-based carbon goals while affording companies the flexibility required to execute against such goals in a manner that suits its business.

Recent developments and motivation

The understanding of the need for greater climate action as well as the aforementioned potential benefits such actions can generate have led to an acceleration in the adoption of sustainability goals rooted in science.

Of the 584 companies already committing to science-based targets, 196 have formally set and science-based targets in line with criteria from the leading organization focused on this area, the Science-based Targets initiative (SBTi).⁸

Nearly two companies each week commit to setting a science-based emissions reduction target or set of targets.



Next steps

If your company decides to advance its corporate sustainability agenda and commits to setting a science-based target, then step one is complete. But additional steps are necessary for realizing the full benefits of such an action.



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Endnotes

- 1 If companies wish to submit targets for official validation to the Science-based Targets initiative (SBTi), beginning in October 2019 and in order to match the most ambitious aim of the Paris Agreement, such targets must be consistent with limiting warming to well-below 2°C or 1.5°C above pre-industrial levels. And beginning in 2025, companies will be required to review and revalidate (as necessary) targets every five years.
- 2 "Take Action." We Mean Business Coalition, <https://www.wemeanbusinesscoalition.org/take-action/> (last accessed April 5, 2019).
- 3 "Picking up the Pace." Tracking Corporate Climate Progress 2017 — CDP, <https://www.cdp.net/en/research/global-reports/tracking-climate-progress-2017>.
- 4 Raftery, Adrian E., et al. "Less than 2°C warming by 2100 unlikely." Nature Climate Change, vol. 7, no. 9, 2017, pp. 637–641., doi:10.1038/nclimate3352.
- 5 Intergovernmental Panel on Climate Change, "Global Warming of 1.5 °C," October 8, 2018, <http://www.ipcc.ch/report/sr15/>.
- 6 "Adopt a Science-Based Emissions Reduction Target." We Mean Business Coalition, <https://www.wemeanbusinesscoalition.org/commitment/adopt-a-science-based-emissions-reduction-target/>.
- 7 World Bank: The World Bank, "Pricing Carbon," <http://www.worldbank.org/en/programs/pricing-carbon>.
- 8 Science-based Targets initiative (a collaboration between CDP, WRI, WWF and UNGC), <https://www.sciencebasedtargets.org/>.



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