The Case for Science-Based Emissions Targets

An overview of the movement toward setting science-based targets for the reduction of carbon dioxide emissions.
Corporate impact on climate change has become increasingly relevant to global investors looking to protect long-term investments. It’s also important to consumers who care about how the brands and partners they choose affect the environment. As a result, more public and private companies are taking steps to reduce their carbon footprints and to report those efforts in a structured way.¹

The question is: how much is enough? How can a company set a goal that is both meaningful and achievable? And is one without the other even worth the effort? Despite the introduction of climate change mandates by governments and measures by industry, total human-caused greenhouse gas (GHG) emissions are continuing to increase.² Clearly, window-dressing is not enough.

These concerns have launched a movement toward setting science-based targets for carbon dioxide reduction. Science-based targets are those goals that are aligned with what scientists agree could prevent the worst effects of climate change.³ The most progressive and committed organizations are already using those benchmarks to guide corporate policy and change.

Why Science-Based Targets?
Science-based targets (SBTs) are carbon emissions targets consistent with the level of decarbonization required to limit global warming to less than 2 °C compared to pre-industrial temperatures. Climate scientists calculate that this ceiling may blunt the worst climate change impacts, and it forms the basis for the COP-21 agreement reached in Paris last December.

The Science Based Targets Initiative⁴ is also a joint initiative of CDP (formerly the Carbon Disclosure Project), the UN Global Compact, the World Resources Institute, and the World Wildlife Fund. The initiative is devoted to increasing corporate ambition on climate action and demonstrating the business case for ambitious target setting.

Many organizations have taken a “do what we can” approach up to this point, taking only carbon reduction measures that represent low-hanging fruit. But with global temperatures continuing to rise, most would argue it’s time to raise the bar. Targets that align with science do exactly that, in a way that is rational and meaningful. Why SBTs? The technology is available, the return on investment has data behind it, and with the right strategy and approach to buy-in and action, the goals are within reach.

Selling Science—Why Disclosing Emissions Is Good for Business
CDP has estimated a payback from carbon reduction efforts of more than 30 percent based on a combination of cost savings, resource efficiency, and productivity gains related to outcomes such as reduced employee churn.⁵ Sustainability measures also drive innovation and increase a company’s resilience to new climate regulation and policies. Disclosure itself generates positive brand associations for investors and customers, and it benefits the bottom line through lower costs and higher profitability.

As an example, simply installing commercial LED-lighting has an estimated payback period of less than one year, according to CDP data.⁶ Economies of scale are driving down costs for other energy efficiency technologies, and the U.S. International Energy Agency estimates that each $1 spent on energy efficiency brings $2–$4 in lifetime cost savings and energy security.⁷

Four Ways to Safeguard Future Profitability
Companies that set SBTs build long-term business value and safeguard future profitability in four fundamental ways.

1. Accelerating innovation
The transition to a low-carbon economy will speed development of new technologies and operational practices. The companies that set ambitious targets now will lead innovation and transformation tomorrow.

2. Saving money and increasing competitiveness
Setting ambitious targets now ensures a lean, efficient, and durable company as resources and raw materials become more scarce and expensive. In addition, companies increasingly want to do business with suppliers taking climate change seriously so they can reduce GHG exposure in the value chain.

3. Building credibility and reputation
Companies taking a leadership position on climate bolster credibility with investors, customers, employees, policy-makers, and environmental groups.

4. Reducing risk
Taking ambitious action now helps companies stay ahead of future policies and regulations to limit GHG emissions. Companies seen as leaders are better able to influence policy makers and shape developing legislation.
Leading Companies Set SBTs

**Coca-Cola Enterprises Inc.** has committed to reducing absolute GHG emissions from core business operations 50 percent by 2020 and to reduce the GHG emissions from their beverage products 33 percent by 2020 (using 2007 as a base year).

**Dell Inc.** has committed to reducing GHG emissions from facilities and logistics operations 50 percent by 2020 (2010 base-year) and to reducing the energy intensity of its products 80 percent by 2020 (2011 base-year).

**General Mills** has committed to reducing emissions 28 percent across its entire value chain from farm to fork to landfill by 2025 (2010 base-year).

**Kellogg Company** has committed to a 15-percent reduction in emissions intensity by 2020 from a 2015 base-year and to a long-term target of a 65 percent absolute reduction in emissions by 2050.

**Pfizer Inc.**, in addition to its own SBT operational goals, has committed that 100 percent of its key suppliers will manage environmental impacts, including GHG emissions, through effective sustainability programs.

Key Strategies

The business case is there, and proven methodologies are available for calculating and setting SBTs. These methods range from an open-source model called “sectoral decarbonisation” to what’s called “the 3% solution” to GHG emissions per unit of value added (GEVA). Many companies use a combined approach to meet their unique needs. But establishing and applying the right methodology is just one piece of a complex puzzle.

Actually landing ambitious SBTs demands a well-organized and strategic approach to gaining buy-in at every level of the company, from employees to board members. Program evangelists must present SBTs not only as necessary and beneficial, but also as realistic. Promotors must carefully frame the rationale for why targets are achievable and lay out a specific game plan; point out past successes that were initially daunting, and reinforce the truth that legislative and market drivers will force the changes eventually. Better to do it on your own terms and timelines than under the gun.

One smart strategy available to any energy-intensive businesses is to use partner momentum (specifically in the power sector) to both engage stakeholders and gain traction. As the power sector is forced to shift to lower-carbon fuels and technologies, there are many organizations who can accelerate their own progress toward ambitious footprint reductions simply by riding the wave.

The most savvy will not merely free-load off energy sector reductions, however, but will instead actively contribute momentum with concurrent efforts at demand reduction and a pivot to renewables. They will also build resiliency into their power structures to prepare for reliability issues as the energy sector moves away from fossil fuels.

[Editor’s Note: See this month’s cover story feature articles on reducing carbon emissions from the power sector.]

Best Practices for Landing SBTs

For many organizations, simply identifying carbon sources is one of the largest challenges to disclosure and mitigation programs. Sources can be obscure and widely distributed. Where are refrigerants or propane used? Where are the energy sinks within your manufacturing processes? How much do your employees travel? How will you calculate the
carbon implications of your products at end-of-life?

Gathering even basic information, such as utility invoices from global facilities, can be daunting. Companies must create consistent and standardized processes for getting all facilities to contribute data in a manageable and efficient way. They must also establish a streamlined and cohesive process for converting global data into a common energy metric and ultimately to carbon dioxide equivalents.

Basic steps for collecting and standardizing data for sustainability initiatives such as SBTs include:

- Analyzing company structure, organizational boundaries, and current operations to gain executive buy-in and engage all stakeholders;
- Setting a base year by identifying carbon sources, calculating current emissions, and analyzing previous years’ data (if available);
- Identifying the appropriate methodology based on SBTs by setting long- and medium-term targets and short-term milestones and setting up a strategy for meeting targets; and
- Mapping long-term expected growth, and adjusting strategies and targets as and when needed to reflect actual performance and changes to the business.

**Who Is Taking Action?**

Most companies today have set emissions reduction targets, and a few have set SBTs. According to the Science Based Targets Initiative, more than 120 companies have signed the organization’s call to action and have set SBTs. Many of the largest signatories have adapted hybrid versions of the standard calculation methodologies to align with complex global operations and supply chains.

Clearly, all businesses must develop a strategy for operating in a post-COP-21 economic climate where more stringent regulations are inevitable. And the goals of those strategies must be based on science to be meaningful and arguable.

Committing to SBTs early will help companies gain resilience in the face of energy uncertainty, streamline costs, and lead in innovation. Those businesses will also have an advantage over competitors who wait to comply with stricter regulations on emissions once COP-21-driven legislation kicks in.

*Mark Chadwick* is chief executive officer of Carbon Clear, an organization with a proven track record of helping large global businesses improve performance by effectively managing and reducing their carbon emissions.

*Alicia Godlove* is a project manager on the Environmental, Social, and Governance (ESG)/Sustainability team for FirstCarbon Solutions, a leader in advancing sustainable practices around the world and helping organizations grow and operate responsibly.

---

**Give Credit Where Credit is Due**

Nominate Someone for A&WMA’s Honors and Awards

**Nomination deadline: November 1, 2016**

**2017 Awards:**

- Frank A. Chambers Excellence in Air Pollution Control Award
- Fellow Grade of Membership
- S. Smith Griswold Outstanding Air Pollution Control Official Award
- Charles W. Gruber Association Leadership Award
- Honorary A&WMA Membership
- Richard Beatty Mellon Environmental Stewardship Award
- Outstanding Young Professional Award
- Lyman A. Ripperton Environmental Educator Award
- Richard C. Scherr Award of Industrial Environmental Excellence
- Richard I. Stessel Waste Management Award

Go to *www.awma.org/about-awma/honors-awards* for descriptions and criteria.