

Carbon accounting in the value chain

New standards represent a leap forward

Highlights:

The Greenhouse Gas (GHG) Protocol has new standards that enable companies to measure and manage more of their carbon emissions.

The standards represent emerging accounting practices for the carbon emissions that exist along a company's entire value chain.

Emissions defined in the standards can represent some of the largest sources of emissions and supply chain costs for many companies.

A practical first step is to determine how you can use the standards to influence GHG reductions, reduce supply chain costs, or drive emissions out of carbon-intensive products.

What companies need to know:

- Two new GHG accounting standards are now available from the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), for the GHG Protocol Initiative: the [*Corporate Value Chain \(Scope 3\) Accounting and Reporting Standard*](#) and the [*Product Life Cycle Accounting and Reporting Standard*](#).
- These standards take a value chain approach to accounting for GHG emissions and allow companies to report Scope 3 emissions on a clearer and more consistent basis through [*The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*](#).¹
- The new standards were developed with multiple stakeholders to harmonize global reporting methodologies. A cross-sector group of companies, governmental agencies, and civil society organizations provided input and public comment.
- The Corporate Value Chain (Scope 3) standard greatly expands what companies will measure, manage, and report beyond their own operations. This means examining carbon reduction opportunities throughout the value chain, both upstream and downstream.
- Scope 3 value chain emissions can represent the largest sources of emissions and supply chain costs for many companies (excluding power generation and materials companies). They represent significant opportunities to influence GHG reductions, reduce cost, and achieve a variety of GHG-related business objectives.
- PwC expects a broad range of carbon reduction programs to encourage adoption of the new Scope 3 standard. They include federal and regional carbon reduction schemes, reporting efforts led by nongovernmental organizations (NGOs), and corporate supply chain initiatives.
- While the Scope 3 standard helps companies identify GHG reduction opportunities, engage suppliers, and track performance at the corporate level, the product standard helps companies meet the same objectives at the product level.

¹ The GHG Protocol defines Scope 1 as emissions from operations that are owned or controlled by the reporting company; Scope 2 as emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company; and Scope 3 as all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

What is the Corporate Value Chain standard?

Expanding Scope 3 accounting and reporting

About this standard

The Corporate Value Chain (Scope 3) standard represents an increased understanding of what to include when reporting indirect emissions and how to measure and report them. In many instances, companies reporting carbon emissions are doing so voluntarily with an expectation that reporting will become mandatory.

The Scope 3 standard provides requirements and guidance for companies to prepare and publicly report a GHG emissions inventory that includes indirect emissions resulting from value chain activities. It also provides a general framework to support GHG quantification and reporting for companies in all sectors.

As with generally accepted financial accounting and reporting principles, GHG accounting principles are intended to underpin GHG accounting and reporting. The standard's guidance will assist companies with disclosures that represent a faithful, true, and fair account of their GHG emissions.

Determining which Scope 3 emissions to include in a company's inventory (i.e., setting its boundaries) is a critical decision in the inventory process. The GHG Protocol allows companies flexibility in choosing which, if any, Scope 3 activities to include in the GHG inventory when they define their operational boundaries.

The Scope 3 standard is designed to create additional completeness and consistency in Scope 3 accounting and reporting by defining Scope 3 boundary requirements.

The requirements include:

- Companies shall account for all Scope 3 emissions and disclose and justify exclusions.
- Companies shall account for emissions from each Scope 3 category according to defined minimum boundaries.
- Companies shall account for Scope 3 emissions of CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆, where applicable.²

Practical considerations

Scope 3 emissions can represent the largest sources of emissions and supply chain costs for many companies (excluding power generation and materials companies). So they may represent significant opportunities to influence GHG reductions, reduce cost, and achieve a variety of GHG-related business objectives.

Yet, new reporting may bring new challenges and complexity. Accounting for upstream emissions may require reliance and increased dependency on unverified data from suppliers, while accounting for downstream emissions from product use may require modeling techniques and significant assumptions.

Organizations also may need to adjust their targets and reduction strategies. Management of Scope 3 emissions could mean strategic trade-offs and may increase reported emissions under other categories of reported emissions. For example, an aluminium manufacturer using more purchased recycled content to lower its overall life cycle footprint may reduce Scope 3 emissions, but this may lead to increased "own company" emissions if the recycled material requires different on site manufacturing processes.

² CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ are the six priority Kyoto gases and are defined in the Scope 3 standard.

Defined Scope 3 categories include:

| Upstream or downstream | Scope 3 category |
|-------------------------------------|---|
| Upstream Scope 3 emissions | 1. Purchased goods and services |
| | 2. Capital goods |
| | 3. Fuel- and energy-related activities (not included in Scope 1 or Scope 2) |
| | 4. Upstream transportation and distribution |
| | 5. Waste generated in operations |
| | 6. Business travel |
| | 7. Employee commuting |
| | 8. Upstream leased assets |
| Downstream Scope 3 emissions | 9. Downstream transportation and distribution |
| | 10. Processing of sold products |
| | 11. Use of sold products |
| | 12. End-of-life treatment of sold products |
| | 13. Downstream leased assets |
| | 14. Franchises |
| | 15. Investments |

Source: Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Current trends

- US Executive Order 13514 requires US federal agencies to set Scope 3 emission reduction targets.
- Walmart, seeking to eliminate 20 million metric tons of GHG emissions from its global supply chain, is collaborating with suppliers and environmental experts.
- The Carbon Disclosure Project (CDP) Investor Survey requests and awards points on reported Scope 3 emissions.

What is the Product Life Cycle standard?

Reporting relevant and complete product life cycle emissions

About this standard

The Product Life Cycle standard provides guidance on how to quantify the GHG emissions attributable to a single product over its entire life, from the extraction of raw materials and manufacture to distribution, use, and end of life (i.e., from "cradle to grave").

This life cycle approach helps companies choose more energy efficient or environmentally preferable alternatives for their products.

The product standard is consistent with the [ISO 14040:2006](#) requirements and provides more in-depth guidance for product life cycle GHG accounting.

The standard requires companies to define a unit of analysis (the product), report a process map of all activities and emissions attributed to the product, and describe the data sources relied upon and the quality of that data. Companies are also required to describe the level of uncertainty in their accounting. Finally, the product standard requires assurance over assertions made in accordance with the standard.

Practical considerations

Life cycle assessment (LCA) can be very resource intensive, and it has inherent uncertainty. Two LCA studies on the same subject matter may have different results because of their underlying assumptions, data quality, processes, and assessment methods. So it's crucial that companies set out clear objectives for the product LCA; this clarity will assist in selection of the methodology and data for developing the inventory.

The product standard provides detailed guidance and requirements for each phase of a product life cycle inventory— from scope definition and setting of the boundaries to data collection, allocation methods, data quality and uncertainty considerations, and reporting of the outcomes.

A life cycle assessment of GHG emissions can lead to:

- **Performance improvement**, enabling the company to prioritize a portfolio of improvement projects or to redesign products to reduce overall life cycle GHG emissions
- **Product differentiation**, providing the data that supports

green claims and eco labels or enabling the company to better position the environmental attributes of a "greener" product by educating stakeholders on the carbon intensity of the various components

Current trends

- Launched by Walmart in 2009, [The Walmart Sustainability Index](#) aims to create a universal rating system to score products based on how environmentally and socially sustainable they are during their life cycle. The initial effort has evolved to include some 90 government, business, and NGO members and partners.
- GHG product labels are generally based on a life cycle approach. These types of labels are voluntary, although some are regulated (e.g., the [European Union's Ecolabel](#)). As consumers look for clear and reliable information on green attributes for their purchasing decisions, the product standard provides consistent guidelines for product carbon footprints.

Questions and answers

Q: Which sectors will be most affected by the Scope 3 standard?

A: Most sectors will have some Scope 3 emissions as they procure products and services from suppliers and may have some downstream product use emissions. But certain sectors are more likely to report Scope 3 emissions because their customers request it. These include industrial products, retail and consumer, and entertainment, media, and communications companies. Others with extended supply chains, such as aerospace and defense, automotive, information technology, or others where products may generate significant emissions during the use phase, are also likely to report Scope 3 emissions.

Q: Under the Scope 3 standard can a company just report Scope 3 emissions and nothing else?

A: No. Conformance to the Scope 3 standard requires that a company publicly report Scope 1 and 2 emissions as specified in the GHG Protocol Corporate Standard. Companies choosing to report in conformance with the GHG Protocol Corporate Standard (and not the Scope 3 standard) can *optionally* report any Scope 3 emissions.

Q: Can I omit certain Scope 3 categories of emissions in my reporting?

A: According to the standard, companies shall account for all Scope 3 emissions and disclose and justify exclusions. Companies reporting in conformance with the Scope 3 standard are required to look at all of the 15 Scope 3 categories and determine which categories are applicable.

For example, if a company does not have downstream franchise operations,

the company needs to state that it is categorically excluding franchise operations since it doesn't have any franchises.

Because some companies may not yet have developed systems and procedures for tracking and reporting certain Scope 3 categories, it is acceptable to estimate emissions until systems are in place for calculating these emissions.

Q: Are there particular Scope 3 downstream emissions from the use of sold products that must be reported?

A: Yes. The Scope 3 standard articulates several categories of direct and indirect emissions from the use of sold products that must be reported. These include a range of products that directly or indirectly consume energy (fuels or electricity) during use, such as automobiles, aircraft, buildings and electronics.

Q: How does the product standard differ from other life cycle accounting frameworks?

A: The product standard is consistent with other LCA standards, including the ISO [14040:2006](#), as well as the

Publicly Available Specification (PAS) 2050 in the United Kingdom. The product standard provides more in-depth guidance on the LCA methodology and how it applies in the specific case of GHG emissions.

Q: Does the CDP ask about the categories of emissions in these new standards?

A: The 2011 CDP Investor Survey includes questions on Scope 3 emissions, and the scoring methodology does award points to companies reporting Scope 3 emissions.

Now that the Scope 3 standard is public, it is possible that over time, the CDP may increase the points awarded to companies reporting in conformance to the Scope 3 standard.

For further discussion, please contact:

PwC's insight and knowledge can help clients better understand emerging reporting requirements. We work with you to establish strategies for high-impact carbon reduction activities and help you develop and implement processes and systems so you can report your success.

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