Managing the Change in Spend-Based Emission Factors

What Companies Need to Know

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Introduction

The recent update to global spend-based emission factors integrates USEEIO and CEDA into a single global multiregional model and incorporates several methodological improvements, potentially significantly changing the factors companies use to calculate Scope 3 emissions. For some organizations, the resulting changes in reported emissions may be substantial even when their operations and supplier relationships remain unchanged.

This paper examines why the update is different from a routine data refresh, which companies may be most exposed, how the change could affect greenhouse gas inventories and sustainability targets and what organizations can do to prepare.

What the Integration of USEEIO and CEDA Could Mean for GHG Inventories, Targets and Disclosures

Corporate greenhouse gas inventories have historically relied on publicly available datasets to translate dollars spent into estimated emissions. Cornerstone's integration of two widely used datasets may lead to changes in spend-based emission factors that extend beyond those typically expected from a routine annual update, with implications for how companies apply them in their GHG inventories. Companies that understand the potential effect early can prepare for it as a calculation improvement; those that do not may find themselves explaining an unexpected and potentially significant change in their reported emissions.

What Spend-Based Emission Factors Are and Why They Matter

A spend-based emission factor converts financial spending into estimated emissions, typically expressed as kilograms of carbon dioxide equivalent, or CO_2e, per dollar spent within a particular economic sector.[1] Applying the relevant factor to spending by sector allows companies to estimate the emissions associated with their purchases.

These factors come from environmentally extended input-output ("EEIO") models, which combine national economic accounts that map transactions among industries with government emissions data by sector.

The two most widely used are USEEIO and CEDA, a multiregional model covering roughly 400 sectors across 148 countries and regions.[2] Historically, the EPA maintained the USEEIO dataset. However, stewardship of the dataset recently transitioned to a private consortium, Cornerstone, which is committed to not only maintaining but also improving the emission factors, including improvements to data quality and methodological robustness, while expanding the emission factors beyond the United States by incorporating CEDA data to create a comprehensive global model.[3]

Spend-based factors are often responsible for the largest part of corporate-level carbon accounting. Scope 3, in many cases, dominates a company's total footprint and Category 1 (purchased goods and services), which is often calculated using a spend-based approach, is typically the largest category for companies.[4] While supplier-specific emissions data is generally preferable for these calculations, collecting it across thousands of vendors can be challenging. By contrast, nearly every company has an accounts payable ledger. Spend-based factors turn that ledger into an emissions inventory.

The scale of reliance on these factors is easy to underestimate. Together, USEEIO and CEDA are used in approximately 65% of corporate Scope 3 carbon measurements globally.[5,6]

Significant changes to emission factors can materially affect a company's reported emissions inventory, independent of changes in a company's annual activities. Without a clear understanding of these impacts and a controlled recalculation process, emission factor updates may obscure actual progress in emissions reductions and sustainability initiatives or distort year-over-year comparisons of operational changes.

Why This Change Is Different From a Typical Update

Spend-based factors change regularly as input-output tables and sector emissions estimates are revised, prices change from inflation and global warming potentials are updated following new IPCC assessment reports.[7]

The recent update could produce more significant changes in emissions estimates because the underlying models are evolving in three important ways:

— **Stewardship has changed.** After the EPA stopped supporting the continued development of USEEIO, Cornerstone assumed stewardship of the model in August 2025. The initiative has committed to providing high-quality emission factors, incorporating methodological improvements over previous model versions, and maintaining public access to the dataset.[8]

— **The models are being integrated, not simply updated**. USEEIO, a single-region model that treats the United States as a closed economy, and CEDA, a multiregional model, have been combined into a single global, open, multiregional input-output model. This represents a structural methodological change rather than a routine update to an existing dataset.[9, 10, 11] Companies that have historically relied on USEEIO for global activities will now need to map spending to the country of origin, requiring greater granularity and analysis of their spending data.

— **The potential direction of the change varies.** While research comparing single-region and multiregional models found that multiregional approaches can increase estimated upstream emissions, the impact is not uniform. Emissions may increase or decrease depending on a company's industry, purchasing patterns and the geographic distribution and complexity of its supply chain. As a result, companies should anticipate changes in their implied emission factors beyond those typically associated with routine annual updates.

Cornerstone released updated versions of CEDA and USEEIO in October 2025, which illustrated the effect of a typical annual update. Across a test set of companies, the updates produced a median footprint decrease of 2.0% under CEDA and 1.8% under USEEIO, driven largely by changes in the electricity sector (31% of the change) and oil and gas production (7%).[12]

The effect will not be uniform across companies and sectors. The single-region model produced higher intensities in 29 of 400 sectors and the largest differences fell in sectors of moderate emissions intensity rather than in the most intensive sectors, such as cement and steel. Plastic bottle manufacturing, for example, actually saw a decrease.[13] As a result, some companies will see little movement in their reported footprints, while others could experience an increase or decrease.

What This Means for Reporting Timelines

Cornerstone EEIO 2026, the newly integrated model, is now available as of October 27th, 2026. Companies should anticipate incorporating the new factors into their inventory calculations as early as 2027.[14]

The timing also coincides with a crowded compliance calendar. California's SB 253 brings Scope 3 into the 2027 reporting cycle. CARB's pre-rulemaking concepts for 2027 would limit required Scope 3 disclosure to five categories, including Category 1, where spend-based factors dominate, require limited third-party assurance of Scope 1 and Scope 2 and require reporting entities to disclose their emission-factor sources, underlying assumptions, measurement uncertainty and the reasoning behind the methodology chosen. These are staff proposals, not adopted rules.[15]

SBTi's Corporate Net-Zero Standard V2.0 takes effect February 1, 2027.[16] Additionally, proposed revisions to the GHG Protocol's Scope 3 Standard would require emissions to be disaggregated by data type, explicitly identifying spend-based calculations; require at least 95% coverage of required Scope 3 emissions; and recommend that emission factors drawn from regional models account for imports and exports, which is precisely the gap the merged model is built to close.[17] Spend-based estimates are about to become both more visible and more closely examined.

The impact is not confined to the current year. Because comparability requires that every year in a time series be calculated under the same methodology, adopting new factors reaches backward across the whole series.

How far backward, however, depends on your base year. Companies should have a base year as a designated historical benchmark against which they reference their continued emissions.[18] The SBTi target base year is now a different concept: under Corporate Net-Zero Standard V2.0, companies select the most recent year with comprehensive data at the start of each five-year target cycle, so it rolls forward rather than staying fixed.[19]

How Much Could Reported Emissions Move and When Does That Trigger Recalculation or Re-Baselining?

Exposure to these changing factors varies widely. The largest movements are likely for companies that rely heavily on spend-based factors, source significant volumes internationally and buy from certain sectors where the gap between single-region and multiregional estimates is widest.[20] A services company with mostly domestic suppliers may see little change; a heavy industrial manufacturer with a global supply chain may see a significant shift.

Under the GHG Protocol Corporate Standard, changes in calculation methodology or improvements in the accuracy of emission factors trigger recalculation of base-year emissions where the impact is significant. Companies are required to have a base-year recalculation policy and to state any significance threshold they apply. The GHG Protocol does not make a recommendation about what counts as significant, leaving that to the company to decide and disclose.[21]

For companies with science-based targets, the discretion is narrower. SBTi's Corporate Net-Zero Standard V2.0 requires companies to evaluate at the end of each target cycle whether recalculation is needed because of methodology changes or data quality improvements and sets a mandatory 5% significance threshold: recalculation is required where the cumulative effect of changes shifts total emissions in any individual scope by 5% or more in the target base year. For Scope 3, companies must also check whether the changes cause any category to newly cross or fall below the 5% threshold that determines target coverage. Where the threshold is exceeded, the recalculated inventory goes to the SBTi, whose validation body assesses whether existing targets still conform.

It is important to make one distinction: changes that reflect genuine real-world emission reductions do not trigger recalculation, because the reduction is real. A change in the underlying model or methodology does require recalculation, because the company's actual emissions did not change, only the measurement did. Where new factors cannot reasonably be applied to earlier years, the GHG Protocol allows the change to be acknowledged rather than recalculated, provided it is disclosed each year to maintain transparency.[22]

What This Could Mean for Your Company

Updated spend-based emission factors can have broader implications beyond simply changing reported Scope 3 totals. For companies with long reporting histories, the updated factors may cause previously published figures to no longer align with inventory results. This can also affect companies with Scope 3 reduction targets, as changes to base-year and current-year emissions may affect reported progress even when underlying operations have not changed.

Changes to these inputs may require companies to revisit previously reported or externally communicated figures, particularly where they support marketing or contractual claims. For suppliers to large reporters, updated factors can also change the relative contribution of upstream emission sources, potentially increasing scrutiny of emissions-intensive suppliers and driving greater demand for primary emissions data.

How to Prepare

Preparing internally

— **Assess the impact early.** Engage experts today to understand the potential implications for your inventory. Restatements attract scrutiny and assurance is becoming mandatory in more places at once: base-year inventories for larger companies under SBTi V2 and Scope 1 and 2 under CARB's proposed 2027 framework.[23, 24] Get ahead of future disruptions by understanding the potential implications for your inventory now.

— **Review your recalculation policy**. The GHG Protocol requires one. Confirm that yours defines a significance threshold, names third-party factor library updates as a trigger and specifies how restatements are approved. Many existing policies are silent on exactly this scenario.[25]

— **Quantify your exposure**. Determine what share of your Scope 3 inventory is derived from spend-based factors, broken out by category and sector and how much of that spend is with international suppliers. This analysis helps clarify whether the update will have a limited effect or require broader organizational attention.

— **Run a parallel calculation now.** Recalculate a recent reporting year and your base year using the newly published emission factors to quantify the impact of the merged model. This is the most useful step companies can take today to understand the potential magnitude of changes to their GHG inventories and determine the appropriate next steps.[26]

Preparing externally

— **Pre-brief your stakeholders.** Investors, boards and sustainability committees and key customers should hear about a potential restatement in advance, not discover it through published reporting.

— **Draft the disclosure language now.** A concise methodology note, including what changed, when, why and the before-and-after effect on the base year and current year, is far easier to write in advance than under deadline.

— **Sequence target communications deliberately.** Version 1 of the SBTi standard remains open for target-setting until the end of 2027 and companies with 2030 targets will set their next cycle under V2.0 from 2028. If a restatement is coming, decide where it lands relative to that transition rather than reacting later.[27]

— **Revisit downstream claims.** Identify every product footprint, customer disclosure and supplier commitment that rests on spend-based data and plan how each will be updated.

The Bottom Line

This update should make corporate carbon accounting better. It will capture a global supply chain in a model that creates more realistic factors rather than assuming every supplier is domestic. But better measurement can still look like worse performance if it arrives without warning and without the proper understanding and disclosures of the underlying impacts. The companies that handle it well will be the ones that quantified the impact early, documented the reasons and told their stakeholders first.

We help companies size the impact, restate inventories defensibly under the GHG Protocol and SBTi criteria, update recalculation policies and communicate the change to investors, regulators and customers.

Have questions about how this transition could affect your inventory, your targets or your product footprints? Let's talk.

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Endnotes

1. Often reported by 6-digit US NAICS codes.
2. Cornerstone CEDA
3. An open sustainability data hub
4. S. J. Davis, A. Dumit, M. Li, Y. Maldonado, M. Steffen, M. Stevenson, T. Boldyreva and S. Suh, "The importance of multiregional accounting for corporate carbon emissions," Nature Communications 17, 1014 (2026).
5. Watershed, "Solidifying the foundations of global sustainability data," August 8, 2025.
6. Watershed, "New data shows continued decoupling of business growth and greenhouse gas emissions," October 15, 2025.
7. Global warming potentials convert the impact of different gases into carbon dioxide equivalent to allow for a standard constant reporting metric.
8. Cornerstone Sustainability Data Initiative.
9. S. J. Davis, A. Dumit, M. Li, Y. Maldonado, M. Steffen, M. Stevenson, T. Boldyreva and S. Suh, "The importance of multiregional accounting for corporate carbon emissions," Nature Communications 17, 1014 (2026).
10. Watershed, "Solidifying the foundations of global sustainability data," August 8, 2025.
11. Cornerstone Sustainability Data Initiative.
12. Watershed, "New data shows continued decoupling of business growth and greenhouse gas emissions," October 15, 2025.
13. S. J. Davis, A. Dumit, M. Li, Y. Maldonado, M. Steffen, M. Stevenson, T. Boldyreva and S. Suh, "The importance of multiregional accounting for corporate carbon emissions," Nature Communications 17, 1014 (2026).
14. Cornerstone Sustainability Data Initiative.
15. Morgan Lewis, "CARB Extends SB 253 Deadline and Previews 2027 Reporting Rules," August 7, 2026.
16. SBTi, Corporate Net-Zero Standard Version 2.0, June 2026.
17. GHG Protocol, "Scope 3 Standard Revisions: Phase 1 Progress Update," March 2026.
18. GHG Protocol, A Corporate Accounting and Reporting Standard (Revised Edition), Chapter 5, "Tracking Emissions Over Time."
19. SBTi, Corporate Net-Zero Standard Version 2.0, June 2026.
20. S. J. Davis, A. Dumit, M. Li, Y. Maldonado, M. Steffen, M. Stevenson, T. Boldyreva and S. Suh, "The importance of multiregional accounting for corporate carbon emissions," Nature Communications 17, 1014 (2026).
21. GHG Protocol, A Corporate Accounting and Reporting Standard (Revised Edition), Chapter 5, "Tracking Emissions Over Time."
22. GHG Protocol, A Corporate Accounting and Reporting Standard (Revised Edition), Chapter 5, "Tracking Emissions Over Time."
23. SBTi, Corporate Net-Zero Standard Version 2.0, June 2026.
24. Morgan Lewis, "CARB Extends SB 253 Deadline and Previews 2027 Reporting Rules," August 7, 2026.
25. GHG Protocol, A Corporate Accounting and Reporting Standard (Revised Edition), Chapter 5, "Tracking Emissions Over Time."
26. Cornerstone Sustainability Data Initiative.
27. SBTi, Corporate Net-Zero Standard Version 2.0, June 2026.