

Summary Paper: From Data to Decisions: Comparable GHG Emissions Data for Steel Procurement

September 2026

About

This document is a summary of the ResponsibleSteel paper, '**From Data to Decisions: Comparable GHG Emissions Data for Steel Procurement**' published in September 2026. The report is available at [the ResponsibleSteel website](#).

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The views expressed in this publication are those of the author(s) and do not necessarily represent those mentioned in the document or those who partook in the review process.

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Summary

The global steel industry is responsible for approximately 8% of greenhouse gas (GHG) emissions worldwide, and the construction sector consumes more than half of all steel produced. As specifiers, engineers and procurers increasingly seek to reduce the embodied carbon of the buildings and infrastructure they design, Environmental Product Declarations (EPDs) have become the default tool for identifying 'low emissions' steel. More than 130,000 EPDs for construction products have now been published globally, and they are increasingly referenced in green building certification, procurement specifications and emerging regulations across Europe, North America and beyond.

Read the full report [here](#)

This paper presents the findings of original research conducted by ResponsibleSteel, with the support of four steelmaker member companies, into how the Global Warming Potential (GWP) values reported in EPDs are determined for steel products, and how they relate to ResponsibleSteel's site-level Decarbonisation Progress Levels (DPLs). This analysis is framed against the Steel Standards Principles' (SSP) Criteria for Transparency in GHG Reporting, which is a recognised benchmark across the sector.

Our original objective was not to test the comparability of EPD-declared GWP values, but to establish whether those values, combined with disclosure of the use of recycled or Secondary Materials (SM), could be used to determine the DPL of the steelmaking site supplying the steel product. In pursuing that question, we found that GWP values widely differ for the same product calculated using the same Product Category Rule (PCR), and that EPDs do not consistently disclose Secondary Materials – exemplifying the challenge of conversion. More than 30 additional quantitative and qualitative data points were collected directly from participating steelmakers beyond what a standard EPD discloses. Even so, the average conversion accuracy achieved was 94% with a wide range, which we consider insufficient for interoperability between EPD and DPL values.

The gap between a product's EPD-declared GWP and its site's crude steel GHG emissions intensity was driven by three key factors – system boundary, co-product allocation and secondary datasets. Logically, the most influential factor was the system boundary: correcting for the crude steel cut-off alone accounted for up to 35% of the difference. Co-product allocation methods and the choice of background dataset for upstream emissions were next, contributing up to 27% and 18% of the difference respectively. Even after the three most material corrections were applied, the gap between the EPD-declared GWP value and a site's crude steel GHG emissions intensity ranged from 7% to 16%.

This suggests that the choice of EPD standard and how it is applied can have a greater influence on reported emissions than actual differences in emissions performance. As a result, GWP values reported in EPDs may not be directly comparable across producers, potentially undermining the effectiveness of green public procurement thresholds that rely on them.

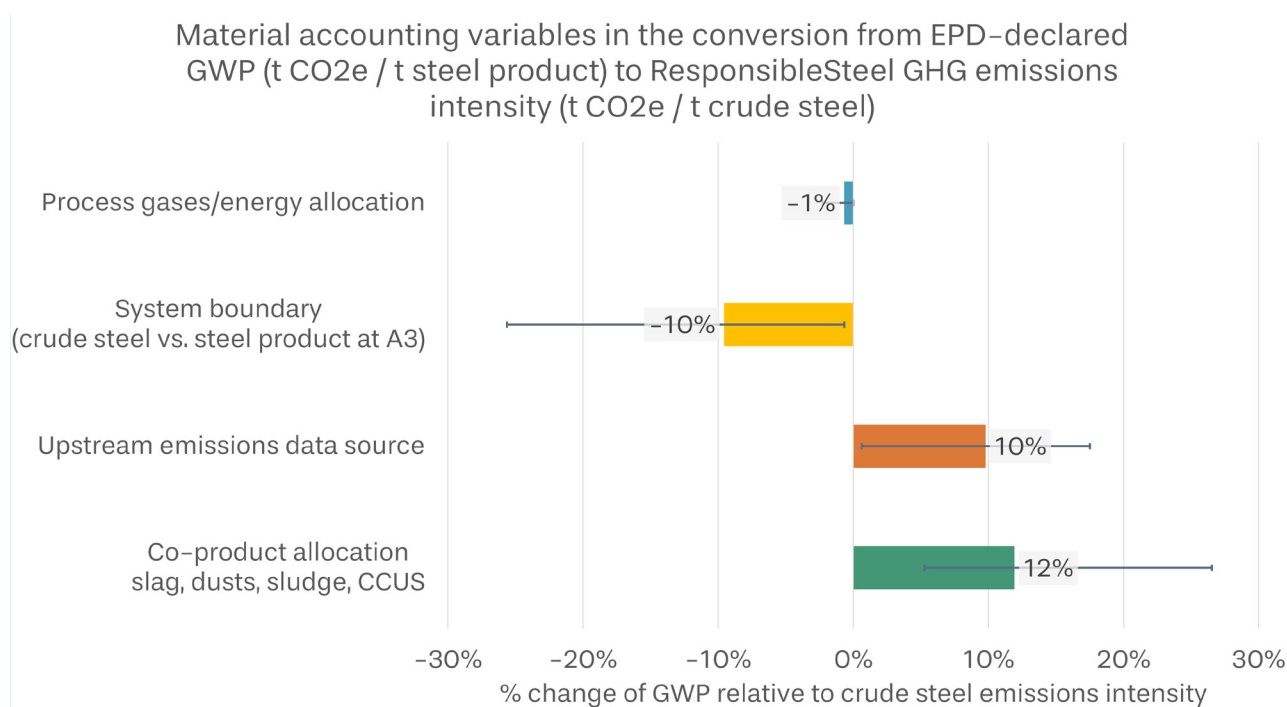


Figure 1. Impact of the most material accounting variables, considered in isolation, when reconciling EPD-declared GWP values with calculated ResponsibleSteel crude steel GHG emissions intensity.

EPDs were not originally designed to benchmark or compare steelmaking decarbonisation performance — their original purpose was broader environmental disclosure across multiple impact categories, and for that purpose they remain a valuable, well-established tool. This paper identifies three opportunities to improve current EPD practices across the steel sector:

1. **Require fuller disclosure of what a declared GWP value represents.** EPDs should include exactly which production site or sites are covered; whether the value represents a specific product or an average across multiple products, sites or production routes; which background datasets and emission factors were applied; and how environmental impacts were allocated between steel and co-products such as slag. This would let buyers judge how representative a declared GWP value actually is, without requiring any change to the underlying accounting rules.
2. **Tighten the application of existing standards to avoid variation.** Standardising the methodological choices allowed within a given standard (e.g. EN 15804) can remove a source of variation that currently exceeds 10% between EPD programme operators applying the same core standard, independent of any real difference in the emissions of the product or the steel it is made from. Narrowing this permitted range is a comparatively low-cost step, since it works within standards that already exist rather than requiring new ones.
3. **Adopt a consistent, clearly defined basis for accounting for scrap.** 'Recycled content', 'Secondary Material' and 'scrap' are three distinct, non-interchangeable concepts, each governed and measured differently. For example, two steelmakers using an equivalent 70% scrap share can report materially different 'recycled content' percentages for the same physical material. This matters because global scrap recovery and recycling rates are already as high as 85%: a low declared GWP driven by high scrap share does not reflect a genuine contribution to the sector's decarbonisation, since that scrap would have been recycled elsewhere regardless.

Three Distinct Scrap-Related Concepts

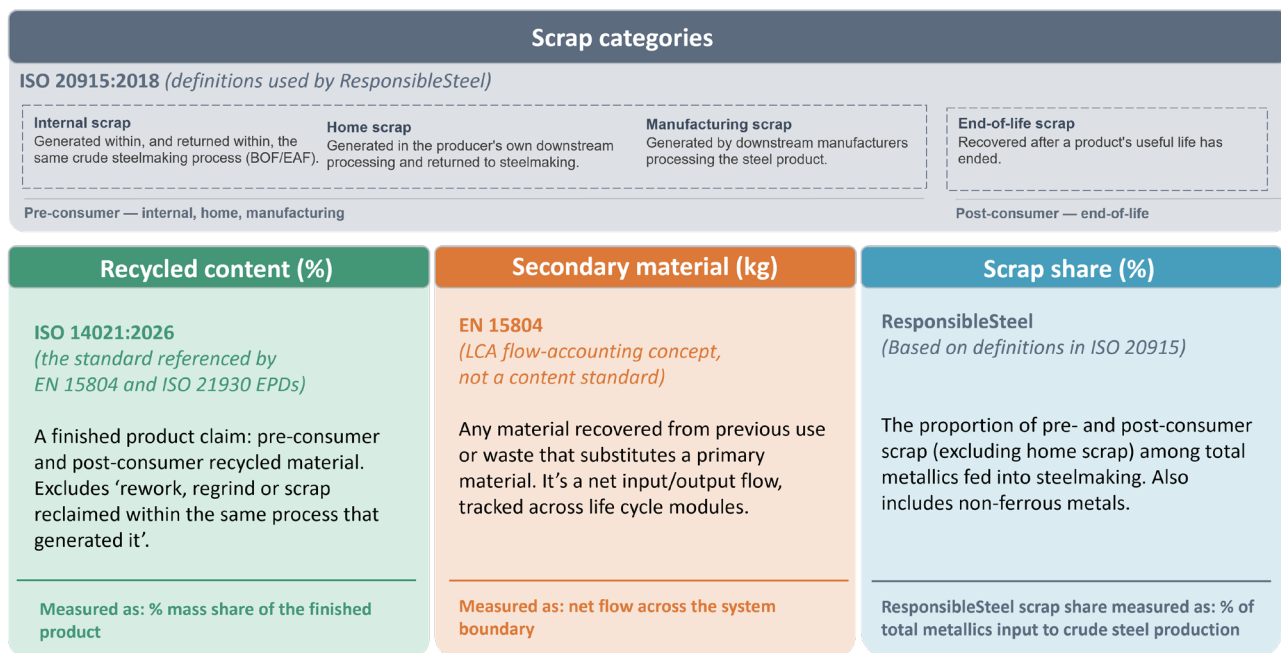


Figure 2. Scrap, recycled content and secondary material are three distinct but overlapping concepts, each governed by a different standard and measured in a different way.

These are not new observations in isolation, but this analysis is, to our knowledge, the first to test them directly against real, verified site-level data provided by steelmakers, and to examine in practice what would be required to bridge the gap between product-level and site-level GHG metrics.

These findings are not reasons to abandon EPDs. They remain valuable and, in many cases, the only available disclosure tools for product-level environmental data. But relatively simple, low-cost changes to how they are specified, combined with complementary site-level metrics such as ResponsibleSteel's DPLs, could make product-level GHG emissions data genuinely fit for the purpose of specifying 'low emissions' steel.

Encouragingly, work to improve the comparability and transparency of product-level emissions data is already under way: the Industrial Deep Decarbonisation Initiative, Catena-X, CEN's draft steel-specific standard (prEN 17662), the first North American steel-specific PCR for steel construction products, ongoing ISO harmonisation work between ISO 14064-1, ISO 14067 and the GHG Protocol (including the conditions for valid carbon footprint comparisons) and the Steel Standards Principles (SSP) have each, independently, converged on the conclusion that greater transparency and harmonisation of EPD methodologies is both necessary and achievable. The building blocks for standard alignment can be used to assess the degree of alignment between GHG emissions accounting methodologies, and as a basis for harmonisation.

Building Blocks for Standard Alignment

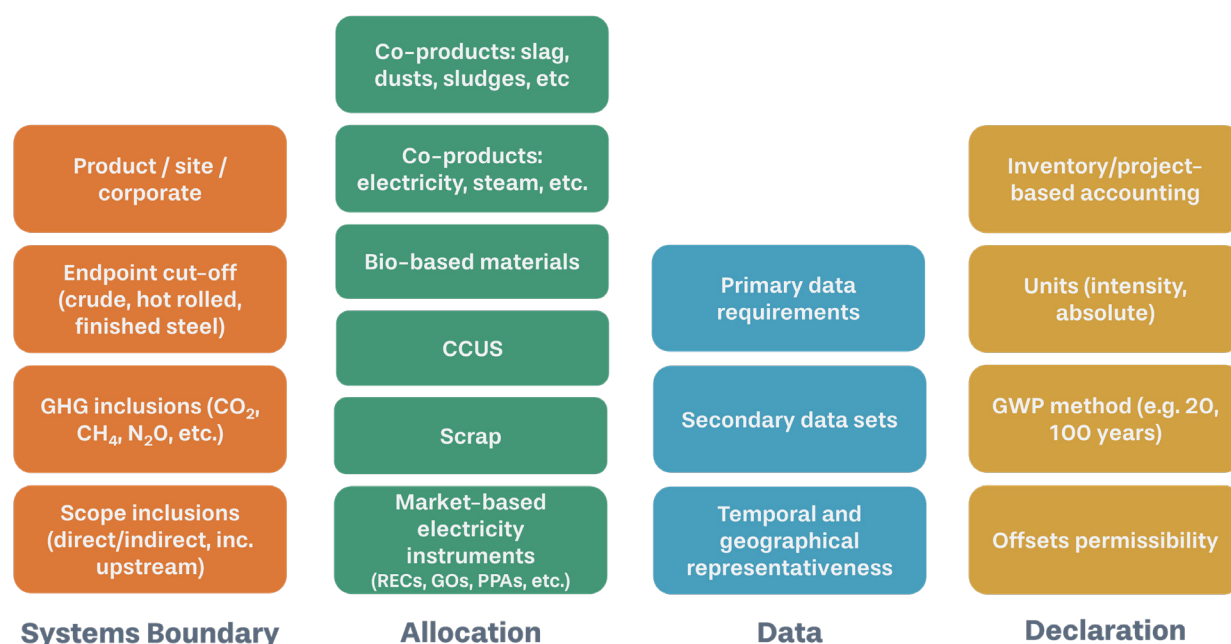


Figure 3 – Building blocks for standard alignment with differences identified between EN 15804–compliant EPDs and ResponsibleSteel DPLs, demonstrating the value of the SSP Transparency Criteria.

In the interim, effective procurement decisions that genuinely drive decarbonisation will require reading multiple GHG data points together, rather than relying on a declared GWP value alone.

We call on steelmakers, product manufacturers, specifiers, green-building councils, certification bodies, EPD programme operators, standard-setters, civil society and policymakers to support three foundations for credible low-emissions steel claims:

1. **Transparency:** EPD-declared GWP values must comply with the SSP's Criteria for Transparency in GHG Reporting, including disclosure of the product-level crude steel emissions intensity and scrap content in line with the scrap definitions specified in ISO 20915;
2. **Comparability:** Specifications for 'low emissions' steel must be based on both the GHG emissions intensity and scrap input share (as opposed to recycled content), applied via a defined decarbonisation framework such as ResponsibleSteel's DPLs, rather than product GWP alone;
3. **Consistency:** EPD programme operators must work alongside stakeholders in the steel sector to develop Product Category Rules that eliminate current methodological inconsistencies in the determination of steel product GWP values.



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