

Response to Request for Information

Carbon Border Adjustment Mechanism Study

RFI No. 89243326NFE000233

U.S. Department of Energy, National Energy Technology Laboratory

Submitted by the Niskanen Center

Responding as: All Other Respondents

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1. Respondent Information

The Niskanen Center is a nonprofit, nonpartisan public policy organization in Washington, DC, dedicated to promoting robust markets and evidence-based policy. Our Climate and Energy analyzes carbon border measures, industrial emissions accounting, and U.S. exposure to the European Union's Carbon Border Adjustment Mechanism (CBAM) for congressional and executive branch audiences. We appreciate the opportunity to respond to this Request for Information.

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3. Curated Datasets and Data Access

Niskanen Center developed an EU CBAM Exposure Calculator, a deployed tool that estimates the CBAM liability of U.S. exports through 2028. It reports year-to-date exposure, sector-level cost breakdowns, and monthly projections for each of the five covered sectors, and is refreshed as Eurostat publishes new monthly trade data. The interactive tool is at the bottom of [this page](#). The Excel data appendix accompanying this response curates the EU-assigned values themselves: the definitive-period default values for U.S. goods at CN-code level, their direct and indirect components, the mark-ups applied through 2028, and the production-route categories used in the EU's derivation.

4. Methodological Expertise and Recommendations

4.a. Recommendations for most robust, defensible methodology

4.a.1. The study can support US manufacturers and future US policies but should not position itself as a replacement for product-level reporting requirements

The study's clearest path to influence is the EU's own revision cycle. Annex IV of the CBAM Regulation requires default values to rest on the best available, reliable, and publicly available data,ⁱ and expressly contemplates revisions based on information provided by a third country or group of third countries, so a NETL study with a published methodology and complete data lineage could feed the Commission's next revision of the default values, due no later than December 2027. A federal data record would also give USTR, Commerce, and individual exporters a benchmark for testing the accuracy of the EU's assigned defaults.

The same dataset would outlast CBAM. Any future U.S. policy that credits the low carbon intensity of domestic manufacturing in trade terms, such as the Foreign Pollution Fee Act, would need credible intensity data keyed to the Harmonized Tariff Schedule. Measuring once, to a defensible standard, serves both uses whichever direction U.S. policy takes.

4.a.2 A robust and defensible assessment should build on existing data

A defensible national estimate can be assembled largely from data the federal government already collects, supplemented by a small number of targeted private and international sources. On the government side, EPA's Greenhouse Gas Reporting Program (GHGRP) can anchor the estimate, since it supplies facility- and subpart-level direct emissions, while EPA's eGRID provides the subregional electricity emission factors that allow indirect emissions to reflect regional grid variation rather than

a single national average. The denominators, namely the energy inputs and production volumes against which emissions are measured, can be drawn from the Census Bureau's Annual Survey of Manufacturers and EIA's Manufacturing Energy Consumption Survey and paired with the GHGRP figures for the emissions numerator.

Where useful, these can be supplemented by private and research datasets, including Global Efficiency Intelligence's benchmarked industrial-intensity data and the utility-side methodology from EPRI's Greenhouse Gas Emissions Accounting and Strategic Applications program.

The EPA GHGRP data is a valuable resource that can help the US government negotiate with the EU and other countries that enact a CBAM. If the EPA repeals the GHGRP, NETL or a federal trade entity should work with industry to determine a mechanism for maintaining and updating the data. This collaboration would be useful for all parties.

4.a.3 The study should use technical specifications that align with EU's approach

- **Units.** Report in metric tons CO₂e per metric ton of product, matching CBAM's convention so the figures are directly comparable to the EU defaults.
- **System boundary.** Report direct (Scope 1) emissions for every covered sector, with indirect emissions from purchased electricity and from precursor and supplier inputs presented separately. This keeps the data aligned with EU ETS-style boundaries whether or not the EU extends indirect coverage further.
- **Granularity and lineage.** Publish by production route, for example blast-furnace/basic-oxygen-furnace against electric-arc-furnace and gas-based direct-reduced iron for steel, with a concordance from CN and TARIC codes to U.S. Harmonized Tariff Schedule and Schedule B codes, and a full record of sources, vintages, and gap-filling rules. Route-level granularity makes the study interoperable with the EU method and more specific than the EU's own defaults.

4.a.4 The study should be expanded to additional sectors in anticipation of the EU's scope expansion

In December 2025 the Commission proposed extending the mechanism to roughly 180 steel- and aluminum-intensive downstream goods, with application from January 1, 2028; the Council's June 2026 general approach added some 200 further goods, and the Parliament's environment committee endorsed a list of more than 450 in July, ahead of a September plenary vote.ⁱⁱ

The sectors likely to follow are also identifiable now. The Commission's review report names chemicals, polymers, and refinery products as the leading candidates, and defers downstream cement, fertilizer, and hydrogen goods to a coming revision; the regulation itself directs assessment of organic chemicals and polymers, with a timetable for inclusion by 2030.ⁱⁱⁱ

Rather than re-scoping the study each time CBAM expands, a standing standard for product-level carbon accounting would be more efficient. The ledger-based carbon accounting methods developed by the E-ledgers Institute and the EFI Foundation are the most complete proposals and both have pilot studies in various industries.^{iv} The practical benefit is that ledger methods carry product-level emissions through each production step, so data collected once at the federal level can be recombined to match whatever product list the EU adds next. The Niskanen Center would be happy to brief NETL staff on any of these points and share further insights on the matter.

4.b. Weaknesses, gaps, or biases in the EU's CBAM calculation methodology.

This section sets out the default values the EU has assigned to U.S. goods, then the methods that produced them.

4.b.1 The values the EU assigned to U.S. goods are equal to or higher than US government estimates

For iron and steel, the defaults exceed the product-level intensities the USITC measured from primary U.S. producer data in 2025.^v For fertilizers, the EU placed U.S. anhydrous ammonia on a petroleum-coke production basis in the definitive period, raising its default from 2.0 to roughly 3.4 tCO₂e per metric ton,^{vi} a feedstock that does not reflect the natural-gas steam reforming used for most U.S. ammonia.

Hydrogen is the starkest case. The EU assigns U.S. hydrogen (CN 2804 10 00) a direct-emissions default of 26.64 tCO₂e per metric ton, the same value it assigns to China and the highest hydrogen default in the regulation; the next-highest is South Africa at 25.94, and most countries fall at 14.03 or below.^{vii} The EU's own Joint Research Centre put the global average near 10.4 tCO₂e per metric ton, and even the upper end claimed by U.S. industry reaches only about 19.7.^{viii} An identical, category-topping value for the United States and China signals that the figure does not derive from U.S. production data.

4.b.2 The EU has two different methods depending on the products, but both are flawed and disfavor US industries

The first is modeling. The defaults began as a Joint Research Centre model built on public global datasets covering roughly 15 to 20 trading partners per sector.^{ix} Independent analysis matching the JRC estimates against the USITC's primary-data figures finds that the modeling overstates U.S. steel intensity by roughly 55 percent on average and wrought aluminum by about 34 percent on average.^x

The second is a registry-based revision. In December 2025 the Commission layered in data from the CBAM Transitional Registry: for product-origin pairs with enough observations, it compared the 90th percentile of reported actual emissions against the modeled default and, where the percentile was higher, raised the default toward it.^{xi} A 90th-percentile value is a near-worst-case observation, not an average, so the rule pushes the result away from the country mean the point 4.1 of Annex IV calls for.^{xii} The revision rests on weak inputs: the Commission's own review found that 89 to 92 percent of early transitional filings used defaults or reported actual values as unavailable,^{xiii} so a revision drawn from that registry is unrepresentative.

Where neither method yields reliable country data, the regulation falls back to the average of the ten highest-emission countries, which is how goods for which production is heavily concentrated in a few countries, such as hydrogen, end up with the U.S. sharing the category-topping value. A separate bias runs through the indirect-emissions defaults, which rely on national-average grid factors and so penalize U.S. producers on cleaner regional grids. Today that falls mainly on fertilizer exports, since Annex II holds steel, aluminum, and hydrogen to a direct-emissions basis, though it would spread with any extension of indirect coverage. Each of these methods would be corrected by the same thing: transparent, route-specific U.S. data computed from domestic measurements rather than modeled or inferred from a registry. This study can supply exactly that.

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- ⁱ Regulation (EU) [2023/956](#) establishing the Carbon Border Adjustment Mechanism, Annex IV.
- ⁱⁱ European Commission, [COM\(2025\) 989 final, Proposal for a Regulation amending Regulation \(EU\) 2023/956 as regards the extension of its scope to downstream goods and anti-circumvention measures](#), 17 December 2025, procedure 2025/0419(COD); Council of the European Union, "[Council moves to strengthen the EU's carbon border adjustment mechanism](#)," press release, 12 June 2026; European Parliament, [Legislative Observatory, procedure 2025/0419\(COD\)](#).
- ⁱⁱⁱ European Commission, [COM\(2025\) 783 final, Report on the application of Regulation \(EU\) 2023/956](#), 16 December 2025, identifying chemicals, polymers, and refinery products among the candidate extensions; the deferral of downstream cement, fertilizer, and hydrogen goods to a future legislative revision is stated in the explanatory memorandum to [COM\(2025\) 989 final](#).
- ^{iv} E-ledgers Institute, "[What are E-ledgers?](#)"; EFI Foundation, [Carbon Accounting: Framework for a Comprehensive New Product- and Entity-Level, Ledger-Based Carbon Accounting System](#); Bipartisan Policy Center, "[Ledger-Based Carbon Accounting for the Power Sector: Key Insights](#)"; Niskanen Center, "[From green goals to black ink: Reforming carbon accounting for a new era of competition](#)."
- ^v U.S. International Trade Commission, [Greenhouse Gas Emissions Intensities of the U.S. Steel and Aluminum Industries at the Product Level](#), Publication 5584, Inv. No. 332-598, February 2025.
- ^{vi} Default values per [Commission Implementing Regulation \(EU\) 2025/2621](#) of 16 December 2025, Annex I (CN 2814 10 00). The shift in the assigned production route and the rise from the transitional value are reported in Argus Media, "[CBAM documents outline preliminary ammonia values](#)," 17 December 2025. The EU's own 2023 Joint Research Centre study ([JRC134682](#), at 61 and 65) had assumed natural-gas feedstock for all countries in scope except China.
- ^{vii} Implementing Regulation (EU) [2025/2621](#), Annex I, CN 2804 10 00 (direct emissions).
- ^{viii} Global average from Joint Research Centre, [JRC135067](#) (2023). The 19.7 figure is the highest hydrogen pathway in the California LCFS lookup table (compressed hydrogen from electrolysis using California average grid electricity, 164.46 gCO₂e/MJ; [17 CCR § 95488.5, Table 7-1](#)), converted to a mass basis at hydrogen's lower heating value.
- ^{ix} D. Vidovic, A. Marmier, L. Zore, and J. Moya, [Greenhouse gas emission intensities of the steel, fertilisers, aluminium and cement industries in the EU and its main trading partners](#), JRC Technical Report EUR 31653 EN, JRC134682 (Publications Office of the European Union, 2023), doi:10.2760/359533. The hydrogen sector is treated in a separate report, Joint Research Centre, [JRC135067](#) (2023).
- ^x M. Porterfield and D. Hoenig, [ITC Values as the Basis for CBAM Emissions Intensity Defaults](#), Climate Leadership Council (April 2025), comparing the JRC estimates against the USITC's primary-data figures.
- ^{xi} [Implementing Regulation \(EU\) 2025/2621](#), Annex I and accompanying methodology (CELEX 32025R2621).
- ^{xii} [Regulation \(EU\) 2023/956](#), Annex IV: "Those values shall be set at the average emission intensity of each exporting country and for each of the goods listed in Annex I other than electricity, increased by a proportionately designed mark-up."
- ^{xiii} European Commission, [COM\(2025\) 783 final](#), 16 December 2025.