

High-Level Overview | GSA's IRA Policy Language & Implementation Draft

On January 26, 2023, GSA shared the first draft of its [IRA Low Embodied Carbon Materials Standard](#). The document, developed in response to the passing of the Inflation Reduction Act of 2022, aims to serve as an initial document outlining the low embodied carbon material standards for GSA projects. Our team at Building Transparency supported the GSA and EPA to help inform and develop this language based on data found in our Embodied Carbon in Construction Calculator tool.

Below, we've provided a high-level look at what this Standard is, where it stands today, how we played a role in its development, and what it means for you as a member of the building and construction sector.

If you have specific questions, please look at our FAQs for GSA's standard, which can be found below, or reach out to policy@buildingtransparency.com.

What is the GSA IRA Low Embodied Carbon Materials Standard?

This GSA IRA Low Embodied Carbon Materials Standard sets the requirements for the use of the Low Carbon Procurement funds allocated to the GSA within [The Inflation Reduction Act of 2022](#). It follows the guidelines set out in the [Environmental Protection Agency's \(EPA's\) Interim Determination](#) for all agencies included in the IRA's Use of Low-Carbon Materials scope. It creates GSA-specific policy language and implementation requirements based on the guidelines. The EPA guidelines set forth that, for concrete, glass, asphalt mix and steel, agencies must purchase materials/products in the best performing 20% for global warming potential (GWP) when compared to similar options. These products qualify as low embodied carbon and GHG materials across the IRA and its associated funding. Third-party verified product and supply chain-specific Environmental Product Declarations are listed as the compliant documentation of the GWP for materials.

How did Building Transparency play a role?

Building Transparency (BT) supported the GSA's draft standard development by utilizing the EC3 tool to create customized data reports that could be leveraged to generate the necessary material-specific quintile thresholds as outlined in the [EPA's Interim Determination](#). BT also provided documentation and explanation of their EPD Uncertainty Methodology and how it is applied to the reported values in third-party verified Environmental Product Declarations (EPDs) to disclose the variability in the reported GWP value based on the degree of specificity in the data (Manufacturer, Product, Facility, and Supply Chain Specific).

How was EC3 leveraged for the development of this standard?

BT was able to leverage EC3's underlying database of EPDs (with uncertainty factors applied) to create requested quintile threshold values for the GSA specific to the construction materials included in the policy language. This was done using EC3's Plan & Compare Buildings feature by setting up a GSA Quintiles project and customizing searches to the material categories and geographical scope requirements provided by the GSA. A new quintile report Excel export function was added to be able to export all of the included data to a spreadsheet that could be dated and used for reference in setting quintile threshold values across material categories.

BT's uncertainty methodology and factors were leveraged within the quintile reports, as well as in the policy language for the GWP values to be used to comply with the low carbon products standard (best 20% of products within a category), defined as the "uncertainty adjusted GWP" within the EC3 tool. This uncertainty is applied natively in the EC3 tool to enable the disclosure of the specificity of the data, create transparency in the variability based on how much specific vs average data was used, and create an uncertainty-adjusted GWP that can be used on comparisons. A spreadsheet-based [EPD uncertainty worksheet](#) and associated web-based [EPD Uncertainty Adjusted GWP Calculator](#) were also developed so that uncertainty-adjusted GWP calculations could be done outside of the EC3 tool, with both the math and material-specific uncertainty values transparently included.

What does it mean for federally funded building, infrastructure and construction projects?

Implementation of the GSA policy language will enable the GSA to prioritize the use of the lowest carbon product options that meet their project requirements and utilize the funding provided by the IRA to procure those products across the GSA's active building projects. By setting the threshold for compliance as the best 20% (lowest uncertainty adjusted GWP) of products, this policy incentivizes manufacturers of products included within the concrete, steel, asphalt and flat glass categories to provide compliant EPDs as well as work to reduce the carbon emissions produced in the making of their products. By using the uncertainty-adjusted GWP, which incorporates uncertainty based on the specificity of the EPD data (Manufacturer, Product, Plant and Supply Chain Specific), the GSA is prioritizing and incentivizing the disclosure of more specific upstream supply chain data, which is listed in the requirements of the EPA's interim determination.

FAQs | GSA's IRA Policy Language & Implementation Draft

On January 26, 2023, GSA shared the first draft of its *IRA Low Embodied Carbon Materials Standard*. The document, developed in response to the passing of the Inflation Reduction Act of 2022, aims to serve as an initial document outlining the low embodied carbon material standards for GSA projects. Our team at Building Transparency worked closely with GSA and EPA to help inform and develop this language based on data found in our Embodied Carbon in Construction Calculator tool.

Below, we've identified a list of Frequently Asked Questions that we predict the industry may have as it relates to this standard and the data leveraged from EC3 for development. Read on for more information.

If you have specific questions, please reach out to policy@buildingtransparency.com.

Q: How does Building Transparency calculate for uncertainty within EC3 via EPDs?

A: Building Transparency (BT) aims to support data transparency and data specificity in EPDs. Thus, EPD uncertainty is addressed in BT's Embodied Carbon in Construction Calculator (EC3) tool through the use of uncertainty factors. BT has defined a set of uncertainties commonly found in EPDs that can be quantitatively assessed. These factors are then applied by EC3 to an EPD within its database

depending on the EPD scenario. BT acknowledges that there are other sources of uncertainty in the EPD process, but these may be better captured as qualitative (rather than quantitative) uncertainties. Quantitative uncertainties are defined by the specificity of the data in an EPD: Manufacture, Product, Plant, and Supply Chain specific. You can find a more detailed explanation in our [EC3 Uncertainty Basics](#) document.

Q: How are Environmental Product Declarations (EPDs) entered into the EC3 database?

A: EC3 receives EPDs in two ways - as PDF documents or digitally. Historically, EPDs have been published as PDFs, so that is the main way EC3 receives them today. For PDFs, EC3 machine reads the documents into BT's standard digital format, openEPD, and then runs a series of sanitization scripts to ensure the data was correctly mapped to the appropriate fields in the openEPD format. A digitized EPD in the EC3 database only appears in Find & Compare Materials searches and comparisons when it passes the sanitization process. More information on how we digitize EPDs can be found on page 25 of the [EC3 User Guide](#).

An example of a digital integration is our partnership with Climate Earth, a provider of ready-mix concrete EPDS. When EPDs are generated by their tool, they are pushed to the EC3 database directly via an API, which maps the EPD data to our openEPD digital format. Based on this digital integration, EC3 is able to accept hundreds or thousands of ready-mix EPDs, as they are produced.

Q: Why does EC3 include supply chain uncertainty in EPDs when comparing or using their GWP numbers?

A: Most current Product Category Rules (the documents that create the requirements for Environmental Product Declarations) allow for the use of either supply chain-specific or average data inputs for upstream product ingredients. This means that currently, reported GWP values for two like products from different manufacturers could be based on different degrees of data specificity, making comparison challenging. As more policies move from simple disclosure to thresholds or limits where product-specific GWP are being compared, it is important that the specificity and the related uncertainty of the EPD reported GWP is taken into account, in both the thresholds or limits set and in the GWP used for assessment.

Take the example below:

Vendor A emits 110 kgCO₂e per cubic meter for the manufacture of heavy-duty widgets, including the supply chain emissions of all widget parts used. The industry average for widget parts is 100 kgCO₂e/m³.

Vendor B imports widget parts that actually emit 200 kgCO₂e per cubic meter and assembles them into his product for an additional 1 kgCO₂e. Vendor B uses the industry average 100kgCO₂e input for his widget parts from his LCA tool because the Product Category Rule for his product allows it, and it's easier to use the average than try to get the specific data from his imported widget supplier. He adds 1 for his own manufacturing emissions and reports 101kgCO₂e

Vendor B appears to have a lower total GWP than Vendor A, but it's not true. Vendor B is using an estimate rather than reality for his supply chain emissions. In other words, Vendor B is not

supply-chain specific but gets just as much credit as Vendor A. And there's nothing Vendor A can do about it.

In EC3, the uncertainty-adjusted GWP value for vendor A is 119 (110 + 8% uncertainty because he is supply chain specific), and for vendor B is 136 (101+35% uncertainty because he is not supply chain specific). So Vendor A is lower based on the specificity of his data and lower remaining uncertainty in its accuracy.

If Vendor B wants to reduce the uncertainty applied to the GWP of their product, all they need to do is produce their EPD with supply chain-specific data (once they have found a better vendor for widget parts).

Ideally, future Product Category Rules will incorporate requirements for disclosure of the specificity of the data used, as well as the inclusion of both a reported and uncertainty-adjusted GWP.

Q: Where can I find additional information about Building Transparency's uncertainty methodology?

A: You can find a complete explanation of Building Transparency's uncertainty methodology in our [EC3 Uncertainty Basics](#) document, which also highlights the types of uncertainty calculated for within EC3 and how the calculations are performed.

If you're looking for a more detailed overview of our approach, we discuss the calculations in more detail in the [EC3 General Uncertainty Methodology Document](#).

We have also created an online calculator tool that enables anyone to calculate the uncertainty-adjusted GWP, following the EC3 methodology, you can find the [EPD Uncertainty Adjusted GWP Calculator here](#).