Getting to Substantially Lower Embodied Greenhouse Gas Emission Construction Materials

Developing a Labeling Program for Substantially Lower Embodied Carbon Construction Materials

EPA OCSPP Inflation Reduction Act Implementation

April 19, 2023

EPA

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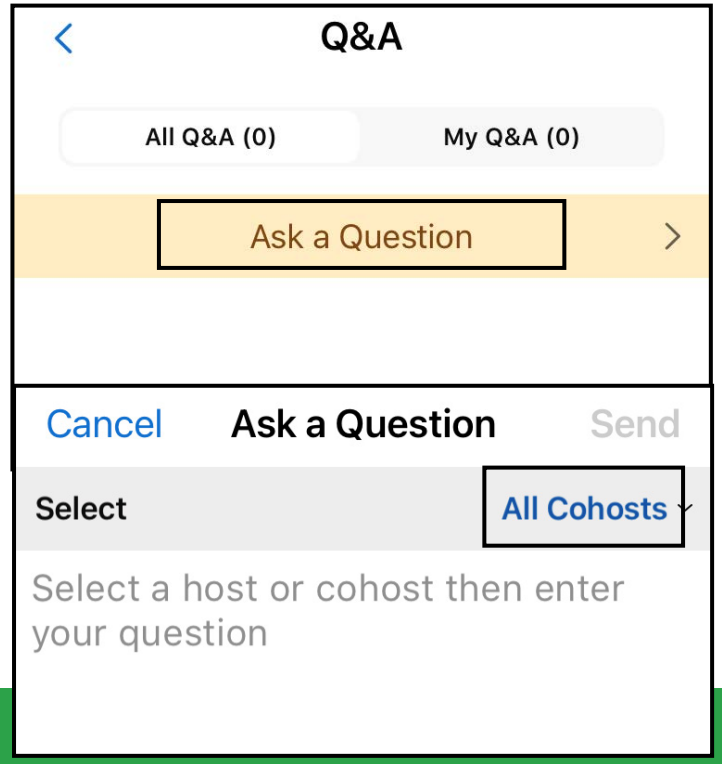
Submit your written responses to EPA's RFI via the open docket on Regs.gov. Link provided in this presentation.



EPA Low Embodied GHG Emission Construction Materials *Stakeholder Engagement Webinar Series*

- **Construction Materials Prioritization and Environmental Data Improvement**

  March 2, 2023, 2 – 3:30 p.m. ET

- **Grants and Technical Assistance for Environmental Product Declarations**

  March 22, 2023, 2 – 3:30 p.m. ET

- **Carbon Labeling**

  April 19, 2023, 2 – 3:30 p.m. ET

Today's Agenda

Time	Topic	Speakers
20min	Overview of IRA Low Embodied Carbon Construction Materials Programs and EPA's Role	• Jennie Romer, Deputy Assistant Administrator, EPA Office of Chemical Safety and Pollution Prevention
40min	Labeling Program RFI Questions and Context - Approach to Threshold Setting - GSA's Experience and Input - Role of Private Sector Standards and Ecolabels - Need for a Centralized Registry/Data Platform - Products/Materials to Cover	• Holly Elwood, EPA Environmentally Preferable Purchasing Program/Sustainable Marketplace • Walter Tersch, Sustainability Program Manager, GSA
30min	Q&A	All

Federal Buy Clean Initiative

Leverages Federal procurement and funding to catalyze markets for low-carbon construction materials to upgrade our transportation, buildings and energy infrastructure

- As the **world's largest buyer of goods and services**, the Federal government's supply chain emissions are twice as large as emissions from Federal buildings and vehicles.
- The **U.S. manufacturing sector** produces the materials that are critical to rebuilding and strengthening the nation's infrastructure.
- U.S. manufacturing sector is linked to nearly **a third of U.S. greenhouse emissions** from industrial processes.
- Buy Clean Federal efforts aim to build upon and accelerate **existing Buy Clean efforts** led by cities and states with critical support from industry, labor and environmental groups.
- A White House-led **Buy Clean Task Force** is coordinating interagency efforts to send the **first Federal demand signal** for lower embodied-carbon construction materials – **steel, cement/concrete, asphalt and glass** – that are made in America with union jobs.

www.sustainability.gov/buyclean

IRA 2022 provides a major boost to lowering embodied carbon

Sec #	Agency	Funding	Purpose	Funds expiration
60116	EPA	$100M	For administrative costs to develop (*with GSA and DOT-FHWA*) a program to identify and label construction materials/products that have substantially lower levels of embodied GHG emissions, based on EPDs and determinations by State agencies, as verified by EPA.	9/30/26
60112	EPA	$250M	Grants and technical assistance to businesses, states, tribes and nonprofit organizations to support the development, enhanced standardization and transparency, and reporting criteria for EPDs for construction materials/products that include measurements of the embodied GHG emissions across all life cycle stages	9/30/31
60503	GSA Federal Buildings Fund	$2.15B	To acquire and install materials/products for use in the construction or alteration of buildings that have substantially lower levels of embodied GHG emissions (*as determined by EPA*)	9/30/26
60506	DOT FHWA	$2B	To reimburse or provide incentives (up to 2% of incremental costs) to eligible recipients for the use of construction materials/products that have substantially lower levels of embodied GHG emissions (*as determined by EPA*)	9/30/26
30002	HUD	$837.5M	For direct loans and grants to improve climate resilience of affordable housing, including low-emission building materials/processes	
70006	FEMA		May provide financial assistance for costs associated with low-carbon materials	

Sustainable Marketplace

Defining Green. Buying Green. Measuring Green. www.epa.gov/greenerproducts

- Take a lifecycle, multi-attribute approach to defining “greener”
- Engage in the development and update of private sector product & service sustainability standards & ecolabels
- Assess and recommend standards & ecolabels for federal purchasers
- Assist feds (and others) in buying greener products and services
- Assist small businesses in selling their greener products and services to the federal government
- Measure compliance and benefits of buying green

High-Level Theory of Change

Developing & improving product & supply chain environmental impact data (LCI, LCA)

→

Standardizing industry measurement + reporting for products/ materials (PCRs + EPDs)

→

Defining and labeling "Substantially Lower" levels of embodied GHG emissions

→

Strong market demand signals

→

Major industrial changes

→

Major impact reductions

IRA Section 60112
Environmental Product Declaration (EPD) Assistance

IRA Section 60116
Carbon Labeling

Buy Clean Initiatives;
IRA Sections
60503, 60506

Target FY23/24 Timeline for EPA's Low Embodied Carbon Construction Materials Program Implementation

Spring/ Summer 2023

- Receive stakeholder feedback on shaping EPD assistance and carbon labeling programs
- Engage federal expertise in Product Category Rules, ASHRAE 189.1, LEED, other standards
- Establish direct, near-term EPD assistance in priority sectors

Summer/Fall 2023

- Solicit proposals for competitive grant programs and/or use existing contracts potentially including:
- Development & harmonization of Product Category Rules; conformity assessment of PCRs and EPDs
- Development of industry-wide EPDs & tools to generate product-specific, digital EPDs
- Expansion of tools/resources for businesses to conduct LCAs and measure & report actual GHG emissions
- Development of aspects of new carbon labeling program

Early 2024

- Award first round of competitive grants
- Evaluate year 1 effectiveness and course-correct, where necessary

Focus of Today's Webinar: Section 60116 – Carbon Labeling Program

- EPA has been charged with implementing Section 60116 of IRA with $100 million – available until September 30, 2026 – to:
- **Develop and carry out a program**:
  - in consultation with the Administrator of the **Federal Highway Administration** for construction materials used in transportation projects and the **Administrator of General Services** for construction materials used for Federal buildings,
  - to **identify and label construction materials and products** that have **substantially lower** levels of embodied greenhouse gas emissions associated with **all relevant stages of production, use, and disposal**,
  - as compared to **estimated industry averages of similar materials or products**, as determined by the Administrator of the Environmental Protection Agency,
- Based on—
- (1) **environmental product declarations**; or
- (2) **determinations by State agencies**, as verified by the Environmental Protection Agency

Why a Label for Substantially Lower Embodied Carbon Construction Materials?

- **Directed by Congress** to develop a label to:
- **Simplify process for construction contractors/subcontractors** to find and procure these materials
- **Simplify process for contracting officers** to ascertain compliance with directives to procure and use substantially lower embodied carbon construction materials
- **Facilitate access to EPD data** on materials with EPDs for those needing this level of detail for Whole Building LCA accounting efforts, etc.
- **Allow consideration** of additional low embodied carbon materials/products
- **Harmonize efforts** and simplify the job for other Buy Clean Programs
- It could also facilitate consideration of other environmental attributes/human health impacts

Request for Information

Labeling Program

Please submit your comments on RFI questions to the open docket by May 1 https://www.regulations.gov/docket/EPA-HQ-OPPT-2022-0924/document

RFI Section E. What should be considered for setting thresholds for “substantially lower levels” of embodied greenhouse gas emissions for qualifying materials/products under a labeling program?

Context: What is an Environmental Product Declaration (EPD)?

Discloses the "lifecycle" environmental impacts of a product similar to a nutrition label

ENVIRONMENTAL IMPACTS

Declared Product:

Plant name

Compressive strength: 3000 PSI at 28 days

Declared Unit: 1 m^3 of concrete

Global Warming Potential (kg CO_2-eq)	281
Ozone Depletion Potential (kg CFC-11-eq)	7.8E-6
Acidification Potential (kg SO_2-eq)	0.84
Eutrophication Potential (kg N-eq)	0.37
Photochemical Smog Creation Potential (kg O_3-eq)	16.9

….but without a lab test for GWPs and without the "recommended values"

Up to "buyer" to specify thresholds

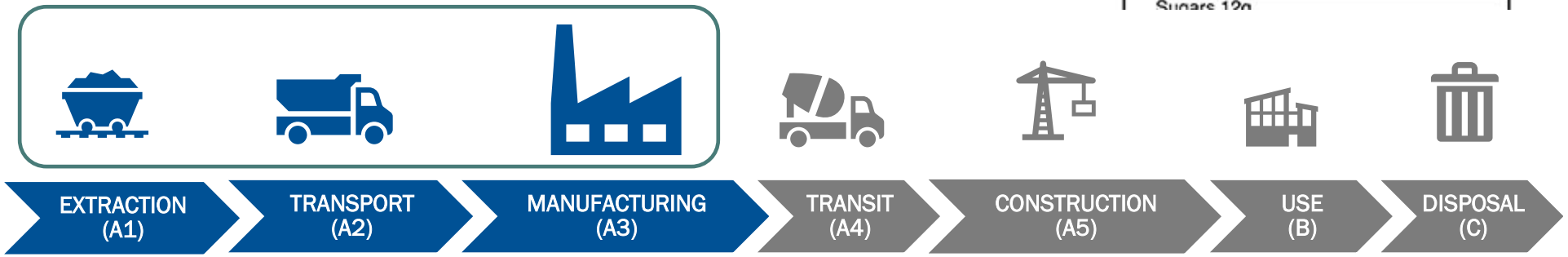
Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container 8

Amount Per Serving

Calories 230 Calories from Fat 70

	% Daily Value*
Total Fat 8g	12%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 12g	

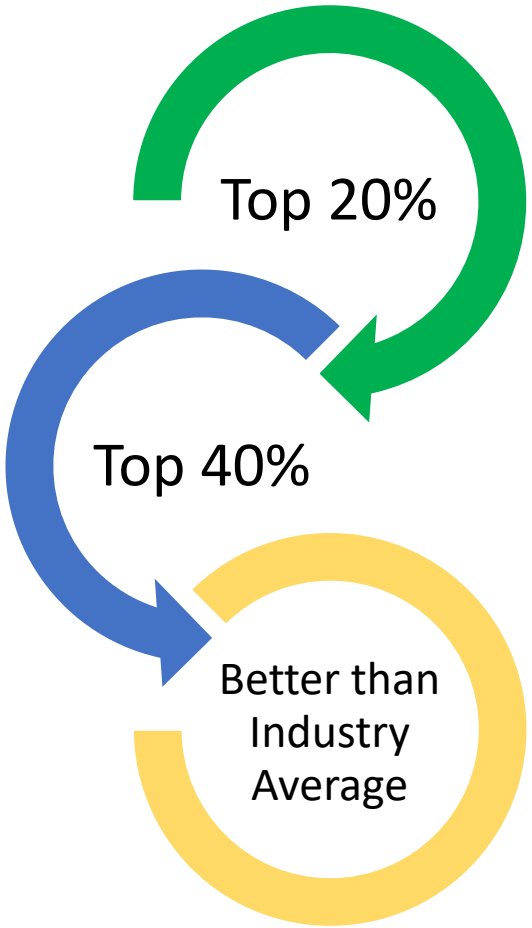


60503 & 60506 EPA's Interim Determination: Interpretation of "Substantially Lower"

- EPA December 2022 "Interim Determination" defines "substantially lower embodied carbon construction materials" as:
  - Best performing 20% Global Warming Potential (GWP)
  - If not available in project location, best performing 40%
  - If not available in project location, better than estimated industry average

In addition

- Providers of qualifying products are required to report the supplying plant's ENERGY STAR Energy Performance Score where an energy performance indicator is available
- EPA is requesting other data from GSA and FHWA to inform implementation of Sections 60112 and 60116
- EPA expects to update the determinations of "substantially lower" over time



Context: Example State/Local/Tribal Buy Clean Efforts

Region	Buy Clean Legislation/Status	Required to Set GWP Limits?	GWP Limits Set?
CA	Buy Clean CA Act 2017	Yes state agencies directed to do so based on industry wide EPDs (EPDs required)	Yes - for steel, insulation, and glass
Marin, CA	Title 19 Marin County Building Code, Chapter 19.07 - Carbon Concrete Requirements		Yes - for concrete
CO	Buy Clean Colorado Act (HB21-1301) July 2021	Directs Office of the State Architect to create GWP limits by January 2024 based on industry wide EPDs. Must be updated regularly. (EPDs required)	TBD
MN	Energy Omnibus Bill 2021	No	
NY	Low Embodied Carbon Concrete Leadership Act (SB 542A) Dec 2021	Directs Office of General Services to create requirements within a year, consider using incentives like bid credits. (EPDs not required)	Yes – for concrete
NJ	S287	Directs NJ DEP to set thresholds for low embodied carbon concrete and concrete that incorporates carbon capture, utilization, and storage technology to qualify for a tax credit (tax credit for EPDs submitted)	TBD
OR	Low Carbon Concrete Initiative	Yes (EPDs required)	Yes - for concrete at regional industry average
OR	Buy Clean Bill 2022	No	TBD

Context: Challenges in Creating National Thresholds

- Product availability across markets
- Region-specific requirements and variations
- Varying standards across jurisdictions

Context: Potential Approaches to Overcoming Challenges to Setting National Thresholds

- Set thresholds for different performance characteristics within a product category.
  - Concrete: Compressive Strength, high early strength, exposure class
  - Asphalt: Aggregate size, performance grade, additive requirements
  - Steel: Tensile strength, galvanized, grade
  - Glass: Thickness
- Set criteria that considers regional variability where data is available and incentivize known environmentally preferable approaches (e.g. X% RAP and warm mix for asphalt)

Your Feedback – Performance Characteristics and Other Variables

23. Performance Characteristics

- **For each of the four initially prioritized construction materials/products** (concrete, asphalt, steel and flat glass) what performance characteristics and other variables (e.g., strength class, recycled content) that can impact the product's embodied greenhouse gas emissions should EPA consider when developing or selecting criteria for the labeling program?

Your Feedback – Setting Thresholds for "Substantially Lower Levels" of Embodied Greenhouse Gas Emissions

24. GWP Threshold/ Criteria Development:

- What approaches should EPA use to create market certainty and maximize consistency of definitions of substantially lower levels of embodied greenhouse gas emissions? How can regional differences be appropriately considered in development of thresholds?

Context: How GSA Buys Construction Materials

Agencies develop their material requirements

↓

Regional implementation staff incorporate requirements in scopes of work

↓

Agency selects contractor (architecture/engineering, design builder, or construction)

↓

Designers develop site-specific specifications

↓

General construction contractor or subcontractor identifies, procures, and installs compliant materials

↓

Agency contracting officer confirms and reports material compliance

Context: How GSA Developed GWP Thresholds Based on EPA's Interim Determination

Pursuant to EPA's Interim Determination, GSA set GWP limits "using data from a verified source (e.g., an open source EPD database, industry-wide EPDs or a 3rd party-verified LCA developed using the relevant PCR)."

GSA's GWP limits are based on publicly-available industry average and product-specific EPDs, filtered by material type, PCR(s) specified in GSA's Requirements, North American geographical scope, and validity dates of 1/1/2022 or later.

GSA's IRA requirements will build upon experience with the agency's March 2022 concrete and asphalt EPD standards

Federal Highway Administration Buy Clean Status

- For more than 10 years, FHWA has been working to encourage infrastructure sustainability, including through quantification of environmental impacts using lifecycle assessment and environmental product declarations (EPDs).
- The FHWA Low-Carbon Materials Grant Program authorized in IRA will build upon programs such as the FHWA's Climate Challenge and the Every Day Counts (EDC) Initiative on EPDs for Sustainable Project Delivery.
- FHWA is actively working to establish a GWP Threshold in alignment with EPA's Interim Determination, and will be working collaboratively with program operators and relevant industry associations to develop corresponding industry averages using best practices as identified in ISO 21930 and additional technical information. They also encourage the development of regional benchmarks rather than national averages.

Federal Buy Clean Implementation Approach to Threshold/Standard Setting & Specification Today

Manufacturers publish EPDs, submit EPDs to EPD Data Platform(s)

EPA determines "substantially lower embodied carbon" informed by EPDs and State programs

GSA/FHWA build requirements (threshold GWPs) based on EPA determination and require vendors to find materials meeting these

How can a label help inform and improve this approach?

Your Feedback – Setting Thresholds for "Substantially Lower Levels" of Embodied Greenhouse Gas Emissions

25. Existing Programs and Lessons Learned:

- What are lessons learned from State, local, and Tribal governments that are currently setting embodied greenhouse gas emission thresholds for procurement (often known as Buy Clean Programs) as well as international efforts underway? What are the most effective ways for EPA to learn from these programs or otherwise support consistency, where appropriate?

Request for Information

Labeling Program

Please submit your comments on RFI questions to the open docket by May 1 at https://www.regulations.gov/docket/EPA-HQ-OPPT-2022-0924/document

RFI Section F. What would be the key elements of an effective carbon labeling program?

Ecolabels Found in the Global Marketplace Today (460+)

Key Elements of Credible, Successful Labeling Programs

EPA's Framework for Assessing Environmental Performance Standards & Ecolabels

Standards Development Process

- Conflicts of interest policy
- Transparency of participation procedures
- Balance of interest in decision-making body(ies)
- Lack of dominance in decision-making body(ies)
- Reasonable effort to achieve consensus
- Procedural appeals mechanism

Environmental & Human Health Effectiveness

- Transparency of weighting methodologies, if multi-attribute standard
- Meets USG objectives
- Address all significant hotspots/lifecycle stage impacts, or be transparent about hotspots not addressed

Conformity Assessment/ Verification

- Competency assured by conformance to relevant standards within the ISO/IEC 17000 series
- Independence; Impartiality; Conflict of interest policy
- Sufficient personnel; Role separation
- Adequate facilities & equipment
- Records management; documented procedures

Label Program Management

- Quality objectives/Quality management system
- Disclosure of program governance
- Procedures for granting the use of the mark
- Robust registry of conformant products
- Periodic evaluation of marked products
- Suitable action for misuse
- Dispute resolution procedures

Context: Sample Label Approaches for Recognizing Materials/Products

- Single Tier/Binary:

WaterSense • Meets EPA Criteria •

- Multi-Tier:

Green (< 50%) Greener (50-75%) Greenest (> 75%)

epeat BRONZE epeat SILVER epeat GOLD

- Informational label:

Sustainability Facts

The fashion industry continues to have a devastating impact on People and the Planet.[1] We scored this product across 200 sustainability metrics to help clarify its social and environmental impact, promote greater transparency, and hold ourselves more accountable in hopes that the industry will begin to do the same.[2]

People

	Product Score
	Grade: A
Wages & Payment	92%
% of Workers Paid Individual Living Wage[3]	*100%*
Health & Safety	93%
Worker's Rights & Governance	94%
Gender Equality & Empowerment	94%
Healthcare & Benefits	93%

Planet 25.5 kg CO_2e[4]

	Product Score
	Grade: B+
Carbon Footprint	94%
% of Carbon Emissions Offset[5]	*100%*
Raw Materials Integrity & Durability	88%
Processing & Manufacturing	83%
Packaging & Distribution	89%
Post Use Product Lifecycle	84%

(1) According to Clean Clothes Campaign, 93% of nearly 100 major fashion brands surveyed do not pay living wages that cover basic needs and less than 2% of garment workers receive living wages (*The True Cost*). Planet wise, the Ellen MacArthur Foundation reports that fashion is responsible for 1.2 billion tons of greenhouse gas emissions, more than all international flights and maritime shipping combined.

(2) Nisolo's methodology for evaluating product scores is based on extensive research of more than 25 leading social and

- All exploring:

Context: Sampling of Private Sector Standards in This Space
Need for Interoperability and Alignment

Standard/ Certification	Current Scope	Embodied Carbon Criteria	Market Penetration
Concrete Sustainability Council Certification	Concrete - environmental, social, and economic topics	Incentivizes performing company-specific LCA, releasing EPDs, providing product-specific carbon calculations to customers, measuring/reporting/reducing GHG emissions, developing a public CO2 reduction target, meeting CO2 intensity targets (i.e., kg CO2 per ton of cementitious products)	500+ certified plants, however only 4 certified plants located in the U.S. all from same org.
CarbonStar (CSA SPE-112:21)	Concrete carbon intensity	Characterizes the determined CO2 in kg (lb) of m3 (yd3) of concrete, as negative (net sequestering), zero (net neutral), or positive (net emitting), using the Canadian Standards Association SPE-112:21 Technical Specification," (CSA SPE-112:21, April 2021)	Unknown
Responsible Steel Standard*	Steel - environmental, social, and economic topics	Incentivizes measurement and disclosure of GHG emissions at the site- and product-level, disclosure following EN 19694, ISO 14404, or other internationally recognized standards. Product-level certification is more rigorous than site-level and includes A1-A3 ("mine to metal") GHG emissions accounting and product-level carbon footprints.	One US certification; Big River Steel, USA was awarded in April 2022
Cradle to Cradle	Any product type - environmental, social, and economic topics	Platinum Requirements: third-party review of the product's embodied GHGs (including development of EPD); 100% of product's embodied emissions from cradle to gate or through end of use to be offset or otherwise addressed. Relevant criteria: 6.4 Quantifying Greenhouse Gas Emissions, 6.5 Clean Air & Climate Protection Strategy; 6.7 Energy Efficiency During Product Use 6.8 Transparency; 6.9 Using Blowing Agents with Low or No Global Warming Potential; 6.10 Addressing Embodied Greenhouse Gas Emissions	Very limited number of certified products in the categories being considered for Phase 1 of Federal Buy Clean Initiative

Your Feedback – Role of Private Sector Standards and Ecolabels

27. Role of Private Sector Labels:

- What role(s) could private sector standards/ecolabels play?
- How could EPA work to ensure consistency of approaches between standards/ecolabels addressing different construction materials?

Context: Is Additional Verification/Conformity Assessment Needed for the EPA Carbon Label?

ISO14025 - Establishes **the principles and specifies the procedures for developing** environmental **declaration** programs **and environmental declarations**

ISO21930 - Provides **the principles, specifications and requirements to develop an** EPD For **construction products and services, construction elements and integrated technical systems**.

PCRs – Provide material/product specific guidelines on how to conduct the LCA and develop the EPD. Usually align with the rules in ISO14025 and ISO21930.

LCA/EPD Verifiers – Reviews EPDs, ensures LCAs accurate, etc.

Context: How to Ensure We Can Trust the Label?

A conceptual framework for a conformity assessment program

REQUIREMENT How should it perform?

→

DETERMINATION How do we know if performs?

→

ATTESTATION Who says its performance has been demonstrated?

→

SURVEILLANCE What about assurance next week?

From NIST SP 2000-01: ABCs of Conformity Assessment (2018)

Context: Setting the Confidence Point for Conformity

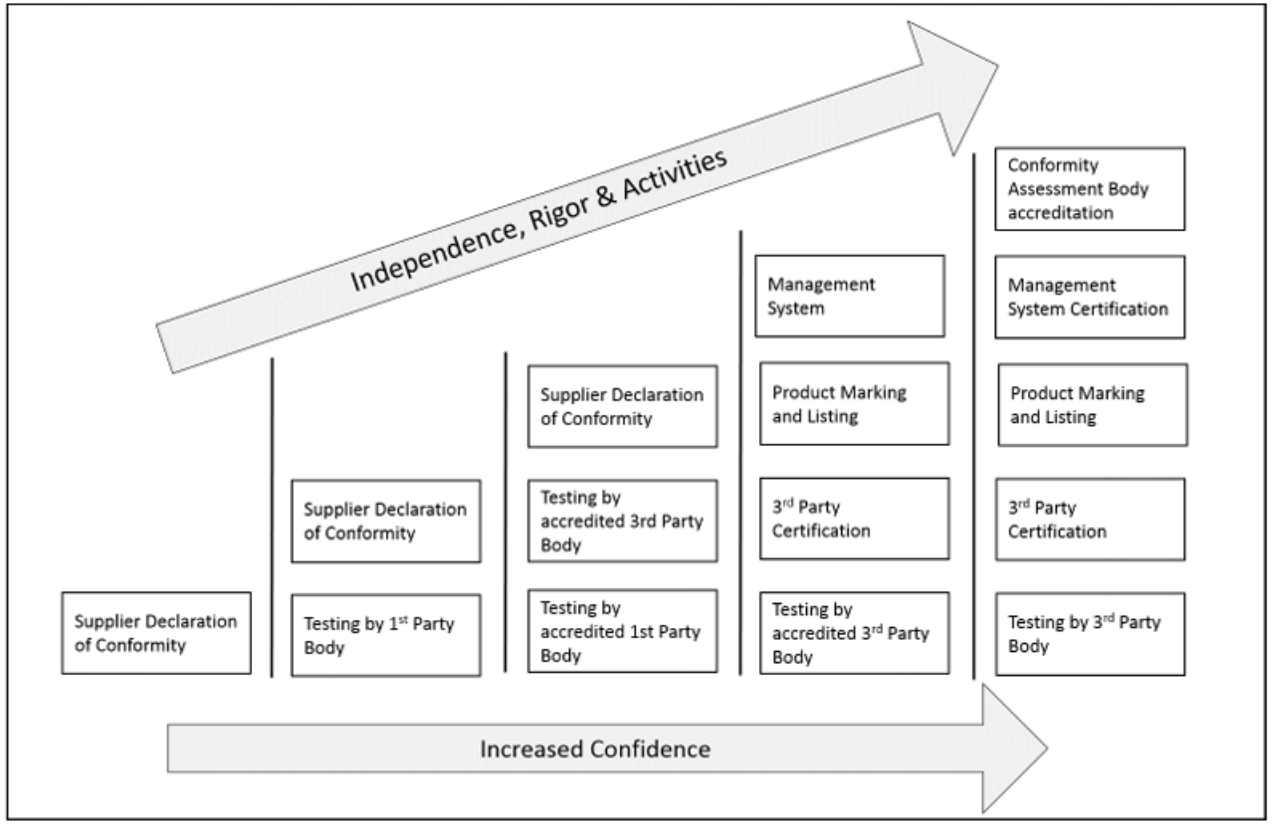


Figure 2 - Conformity assessment flexibility to meet confidence needs

From NIST SP 2000-01: ABCs of Conformity Assessment (2018)

Your Feedback – Verification/Conformity Assessment

RFI Question 29. Verification/ Conformity Assessment:

- What kind of conformity assessment approaches are needed to ensure that the label provides reliable and consistent data?
- What kind of verification requirements should be in place to ensure it is possible for Conformity Assessment Body(ies) (CAB) to determine conformance of a material/product to embodied greenhouse gas emission criteria?

Context: Best Practices of Certified Material/Product Registries

- Publicly accessible
- Searchable list of certified materials/products by location, criteria
- Updated regularly
- Live data feed/API capability to integrate data into online procurement vehicles
- Report certification/verification data
- Show other relevant environmental information

Your Feedback – Certified Material/Product Registry

RFI Question 30. Certified Material/Product Registry:

- Should there be one central product registry of all materials/products covered by this program to help purchasers more easily find and procure construction materials/products with substantially
  lower embodied greenhouse gas emissions?
- If so, what would the key components of that registry be? - Who should manage/maintain the registry?

Request for Information

Material Prioritization

Please submit your comments on RFI questions to the open docket at https://www.regulations.gov/docket/EPA-HQ-OPPT-2022-0924/document

RFI Section A. What construction materials/products should EPA prioritize in implementation of IRA Sections 60116?

Context: Breakdown of Manufacturing Emissions

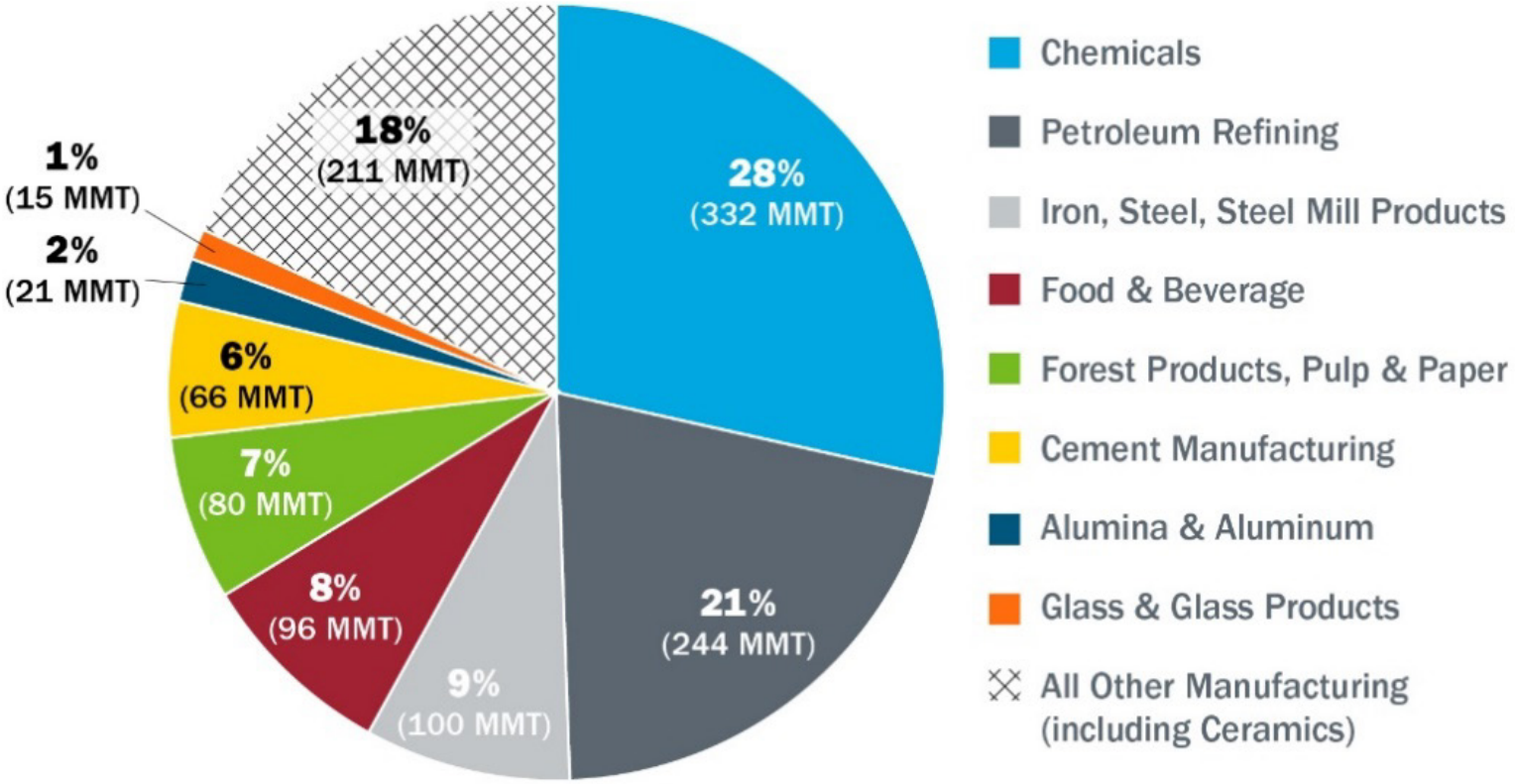


Figure. U.S. primary energy- and process- related CO_2e emissions (MMT CO_2e) for manufacturing industries (NAICS 31-33). *Figure derived from DOE's Manufacturing Energy and Carbon Footprints; source of data for footprints from DOE Energy Information Administration's 2018 Manufacturing Energy Consumption Survey.*

Context: Initial Priority Construction Materials & Products *Aligned with White House Buy Clean Task Force Efforts*

Newly manufactured

- concrete (and cement)
- steel (including, but not limited to, hot rolled sections, plate, hollow structural sections, steel reinforcing bars/rebar, cold formed steel framing and steel joists)
- glass (including, but not limited to, flat/float glass, processed glass, and insulated glazing units)
- asphalt mix (paving)

Minimally-processed salvaged & reused

Note: This effort does not address what type of material should be used in a project (e.g., mass timber replacing steel, or copper compared to aluminum) but rather is limited to "like to like" comparisons, at this time.

Context: Other product/material categories to consider due to "production, use, and disposal" contributions to GHG emissions

See EPA's <u>COVER MEMO</u> to the Interim Determination

- Aluminum, insulation, gypsum board, roofing materials
- Biobased materials (e.g. mass timber, straw, hemp, etc)
- FEMP designated / ENERGY STAR certified products (HVAC/chillers, water heaters, windows, insulation, lighting, etc)
- Products and equipment containing no or low global warming potential HFCs consistent with EPA's American Innovation and Manufacturing (AIM) Act and the Significant New Alternatives Policy (SNAP) program
- Recycled content construction materials that meet or exceed the recycled content requirements under RCRA Section 6002
- Renewable energy technology products
- Products meeting relevant private sector standards/ecolabels recommended by EPA

Context: Learning from State/Local/Tribal Efforts: Materials Covered

Location	Structural Steel	Concrete Reinforcing Steel	Flat Glass	Asphalt	Concrete	Other
CA	Yes – Three subcategories	Yes – Steel rebar	Yes	No	Also developing strategy to create net zero cement sector	Mineral wool board insulation (two subcategories)
CO	Yes	Yes	Yes	Yes	Yes (and cement)	Post tension steel, wood structural elements and allows for creation of material subcategories
MN	None Specified				Yes (shortcrete, structural cast in place, and precast)	Unity masonry, metal of any type, wood of any type, including but not limited to wood composites and wood-laminated products"
NJ					Yes	
NY	No	No	No	No	Yes	
OR	Yes	Yes	No	Yes	Yes	Other materials to be determined later with advice of a technical advisory committee
Portland, OR	No	No	No	No	Yes	
WA	Yes	Yes			Yes (structural)	Engineered wood

Your Feedback – Expanding Scope of Materials

1. Newly Manufactured Materials:

- How should EPA prioritize construction materials and products for its **carbon labeling program**?

Other Key Carbon Labeling Questions–

RFI Question 28. Label Characteristics: What label characteristics would be most helpful for purchasers and specifiers in identifying substantially low embodied carbon construction materials/products? What label approach would be most effective in this context: Tiered levels of recognition, A variable/rating score, Pass/fail/binary, or some other approach?

RFI Question 31:
What outreach approaches should EPA consider for the label? What are the purchasing processes, key sales channels, and key market actors for each priority material/product?

For more information & to stay in touch…

- **Please submit your comments on the RFI** questions to the open docket at: https://www.regulations.gov/docket/EPA-HQ-OPPT-2022-0924/document
- **Tips on Writing Effective RFI Comments**: https://downloads.regulations.gov/FS-2018-0053-0007/content.pdf
- EPA's IRA Low Carbon Materials Program: https://www.epa.gov/inflation-reduction-act/inflation-reduction-act-programs-fight-climate-change-reducing-embodied
- White House Council on Environmental Quality: Federal Buy Clean Initiative https://www.sustainability.gov/buyclean/
- Listserv sign-up: https://www.epa.gov/greenerproducts/forms/contact-us-about-greener-products-and-services
- Email: embodiedcarbon@epa.gov