

February 1, 2023

Reducing carbon through purchasing power: the promise of Buy Clean



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- Embodied emissions or embodied carbon – product’s emissions footprint from cradle to grave, though most attention focused on stages around manufacturing
- ~11% of global GHG emissions embodied in built environment through common construction materials (e.g. steel, cement/concrete, glass)
- Materials like steel and cement are among most emissions-intensive – and commonly used – in the world
- Stems from purchases and consumption of products, so actions and policies to address embodied carbon often fall on demand side – most prominently “Buy Clean”
 - ~32% of embodied emissions in U.S. from construction are from public projects
 - Any policy targeting embodied carbon requires good data on which to base purchasing decisions

Verifying embodied emissions through environmental production declarations (EPDs)



- EPDs – include CO₂e emissions per unit of product (referred to as global warming potential, or GWP) and many other environmental impacts. Based on:
 - Guidelines/principles set by **International Organization for Standardization (ISO)**
 - **Product Category Rules (PCRs)** – more granular, product-specific (e.g. hot-rolled structural steel) reporting rules that must be followed to compare two products
- Different types of EPDs, some which have emerged through Buy Clean laws

Industry-wide

- Provides average for a group of manufacturers
- Useful for benchmarking but not comparisons between products

Product-specific

- Provides data on products of a single manufacturer or facility
- Data may be averaged across multiple facilities rather than attributing to a single source

Facility-specific

- Traced to a single facility of a manufacturer
- Introduced in the Buy Clean California Act

Supply Chain-specific

- Requires use of primary data for certain upstream inputs and materials
- Proposed in the Buy Clean Buy Fair Washington Act

Buy Clean laws are emerging at every level of government – starting with states



- Buy Clean California – first in the nation (2017)
 - Facility-specific EPDs covering structural steel (3 types), concrete reinforcing steel, flat glass, and mineral wool board (2 types)
 - Challenges setting emissions levels using facility-specific EPDs (compliance started 7/1/2022)
- Other states have followed with similar legislation, including Colorado (2021), Oregon (2022),
 - Differences on EPDs, products covered, approach/timeline on setting limits on embodied carbon
- New York (2021) and New Jersey (2022) have more limited Buy Clean laws
- Washington and Minnesota have commissioned studies – could soon follow
- Virginia, Illinois, and Maryland considered bills last year



- Buy Clean Task Force established in December 2021 executive order
 - Charged with formalizing federal policy, incl. covered materials and EPD reporting requirements
 - Prioritizing steel, concrete, asphalt, flat glass (Sept. 2022 announcement) across all agencies
 - \$7.1m for Federal Highway Administration to encourage work at state level (Oct. 2022)
- General Services Administration first agency to act, setting standards for concrete and asphalt in March 2022 (compliance has started)
- Inflation Reduction Act provides significant funding to advance Buy Clean through:
 - \$250m to EPA for program to enhance development and quality of EPDs + grants to manufacturers
 - \$100m to EPA for program to identify and label low-carbon materials for transportation/buildings
 - ~4b to GSA and Federal Highway Admin to fund purchase of low-carbon materials

Localities also getting into the mix on Buy Clean and other embodied carbon policies



- Portland, OR passes Buy Clean for concrete in 2019
 - Requires product-specific EPDs and sets emissions limits based on concrete strength
 - Compliance started January 1, 2023
- NYC Executive Order 23 (September 2022) requires agencies to “make their best efforts” to incorporate low-carbon concrete rules and collect EPDs for concrete/steel
- Other policies not full Buy Clean but target recycling/reuse of construction materials, e.g. San Francisco, Cook County (Illinois)
- Some acting through building codes (e.g. Marin County and Denver)



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