

Embodied Carbon Policy Round-up

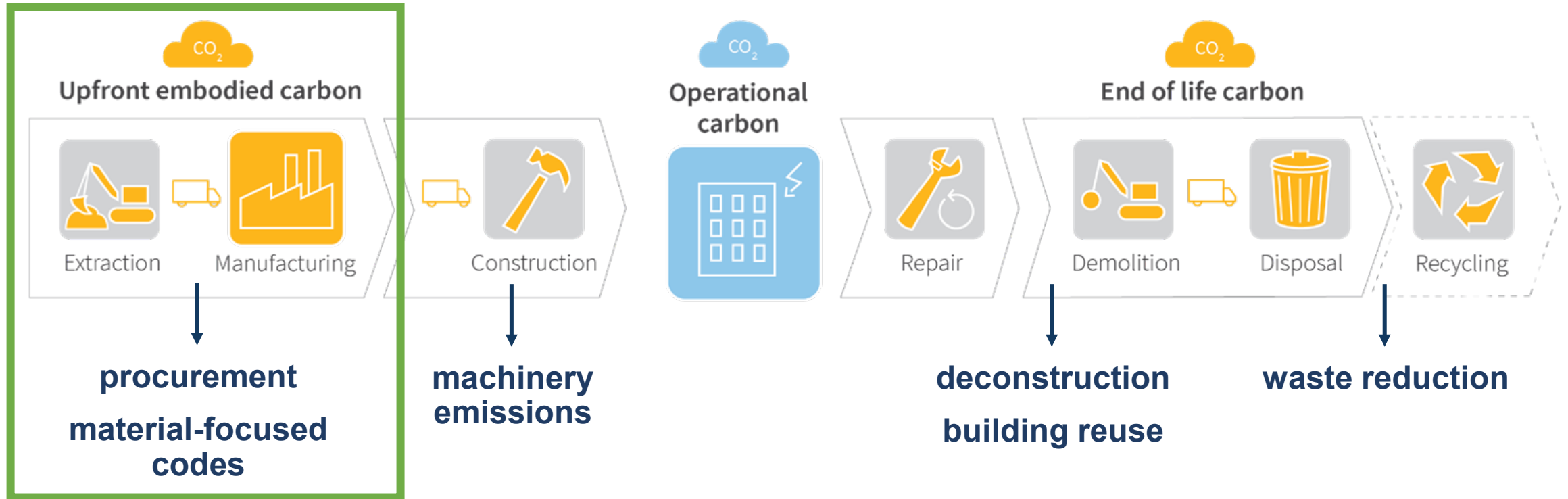
10/25/2022

Carbon-Free Buildings
Low-Embodied Carbon Program

Policy opportunities across the carbon lifecycle

Embodied carbon refers to the greenhouse gas (GHG) emissions associated with the manufacturing, transportation, installation, maintenance, and disposal of building materials.

Image Source: [Carbon Leadership Forum, 2020](#)



Public Procurement

Carbon-Free Buildings
Low-Embodied Carbon Program

Public Procurement Policy AKA “Buy Clean”

Disclosure

- Require the disclosure of embodied carbon data of covered products using an Environmental Product Declaration (EPD).

Emissions Limits

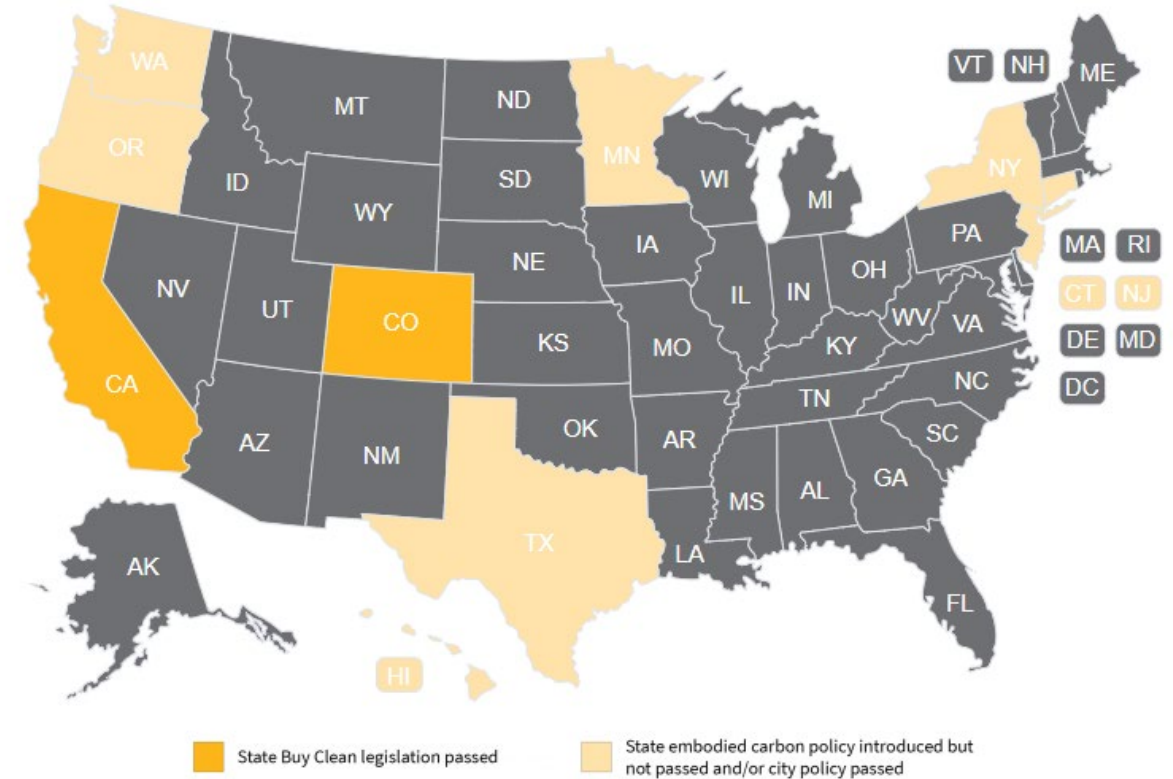
- Set maximum allowable embodied carbon limit for each material category that becomes more stringent over time.

Key Materials in State Buy Clean

	Structural Steel	Reinforcing Steel (Rebar)	Cement & Concrete Mixtures	Asphalt & Asphalt Mixtures	Engineered/ Structural Wood	Glass	Mineral wool board insulation
California	x	x	proposed			x	x
Colorado	x	x	x	x	x	x	
New York			x				
New Jersey (proposed)			x				
Washington (Proposed)	x	x	x		x		
Maryland (Proposed)	x	x	x		x	x	
Massachusetts (Proposed)	x	x	x			x	x

Growing policy landscape

- CA published first Global Warming Potential (GWP) limits in 01/2021 for steel, insulation, glass
- CO passed Buy Clean bill 07/2021 for asphalt, cement & concrete, glass, steel, insulation, and wood
- 5 new State bills introduced
 - Procurement: WA, MN, OR
 - Low Carbon Concrete: NY, NJ
- Federal Buy Clean introduced



Source: [Carbon Leadership Forum](#), 2020

California

Carbon-Free Buildings
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Buy Clean California – Emissions Limits

Table 1: Maximum Acceptable GWP limit summary

Eligible material	Maximum acceptable GWP limit (unfabricated)
Hot-rolled structural steel sections	1.01 MT CO ₂ eq./MT
Hollow structural sections	1.71 MT CO ₂ eq./MT
Steel plate	1.49 MT CO ₂ eq./MT
Concrete reinforcing steel	0.89 MT CO ₂ eq./MT
Flat glass	1.43 MT CO ₂ eq./MT
Light-density mineral wool board insulation	3.33 kg CO ₂ eq./1 m ²
Heavy-density mineral wool board insulation	8.16 kg CO ₂ eq./1 m ²

CALGreen includes voluntary WBLCA measure



- CALGreen 2019 already includes voluntary language for WBLCA.
- Definitions to familiarize the industry with the analysis and process are already included.

Procurement Example: Concrete



Procuring low embodied carbon concrete:

Use performance-oriented specifications:

- Allow suppliers to design low-carbon mixes including replacing cement

Require submission of EPDs

- Provide incentives to assist small manufacturers

Gradually set GWP limits that decrease over time:

- Start by eliminating the worst performing 20% of products

AB 2446 – Summary

- **July 1, 2025 - Framework for measuring and reducing carbon intensity in Building Materials**
- **2026 - GHG Building Materials Emissions Baseline to be developed**
- **Dec 31, 2030 - Baseline to be reduced by 20%**
- **Dec 31, 2035 - Baseline to be reduced by 40%**

CALGreen Proposal

	Description	Existing Voluntary	Mandatory 50,000sf	Tier 1 50,000sf	Tier 2 50,000sf
Overall Performance Goal	Equivalent performance	N/A	10% reduction from 2022 baseline	15% reduction from 2022 baseline	20% reduction from 2022 baseline
Option 1	Building Reuse	75% of the structure and enclosed to be reused	45% of the structure and enclosed to be reused	75% of the structure and enclosed to be reused	75% of the structure and enclosed to be reused AND 30% of interior non-structural elements to be reused
Option 2	WBLCA	10% reduction from baseline	10% reduction from baseline	15% reduction from baseline	20% reduction from baseline
Option 3	Prescriptive Approach	N/A	175% of IW-EPD GWP Limits	150% of IW-EPD GWP Limits	IW-EPD GWP Limits

Local Policy - Emeryville

City Council and Sustainability Committee
Comments On October 5, 2021, the City Council directed staff to develop a system to provide an opportunity for developers and builders to **obtain development bonus points for the use of mass timber in new construction.**

Council requested that the available points be tied to the size or percentage of the project built using mass timber; this request is reflected in the proposal below.



Planning Incentive



Federal Buy Clean

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Federal Action: Executive Order 14057

Executive Order 14057, 'Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability', establishes embodied carbon as a priority for the Federal government. It sets an ambitious goal of achieving **net-zero GHG emissions from Federal procurement by 2050**, and describes upcoming activities toward this goal.

Federal Action: Executive Order 14057

A task force comprised of Federal agencies is currently working to:

- Develop low-carbon material procurement program pilots, which can build toward the deployment of a Buy Clean policy that sets emissions standards for key materials
- Develop mechanisms to collect and publicly disclose environmental performance data for priority materials
- Increase data transparency and standardization to streamline emissions reporting

Inflation Reduction Act

- **\$250M for Environmental Product Declaration Assistance**
- **\$100M for low-embodied carbon labeling for construction materials**
- **\$2.15B deposited in the Federal Buildings Fund**
- **\$2B at FHWA for the use of low-embodied carbon construction materials**