

SUSTAINABLE BUSINESS STRATEGIES: REDUCING EMBODIED CARBON

The Business Case for a Corporate Embodied Carbon Policy

Embodied carbon policies show investors, boards, shareholders, and talent that carbon reduction strategies are comprehensive and managed beyond operational emissions.

Embodied carbon policies complement existing carbon reduction strategies or stand alone to address deep decarbonizing efforts. Businesses that adopt embodied carbon policies are driving demand for lower-carbon products, influencing supply chain practices, attracting talent that seeks comprehensive carbon-reduction, enhancing data monitoring and carbon reporting, and strengthening the transition to a decarbonized economy.

Embodied Carbon Policy for Businesses

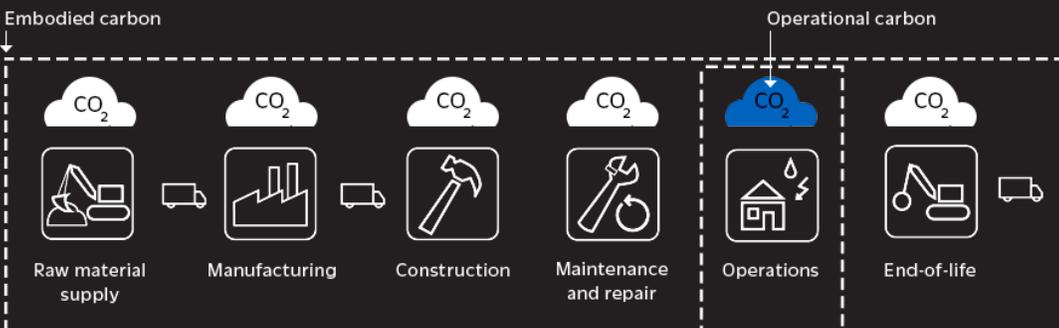
Embodied carbon policies enable management systems to measure and take action to reduce carbon emissions beyond internal operations. In-house product development and manufacturing, supply chain management and procurement policies as well as waste management practices contain opportunities for reducing embodied carbon.

Today's embodied carbon policies primarily focus on building construction products, such as cement, glass, and steel, given their carbon intensive manufacturing process and lifespan. Fortunately, more product manufacturers are adopting lessons learned from architects and engineers by measuring and reporting the embodied carbon found in commonly used products, including paper, furniture, appliances, food products, cotton, and coffee. Further, third-party certification and verification programs, also known as Environmental Product Declarations (EPD), are increasingly accounting for embodied carbon for thousands of products and services to verify embodied carbon reductions for their customers.

What is Embodied Carbon?

Embodied Carbon is the total accumulated carbon emitted throughout a product's life cycle. All products, such as paper, furniture, vehicles, phones, computers, gloves, boots, and uniforms, have multiple points in their development where carbon is emitted.

Embodied carbon accounts for the total carbon footprint locked into a product from raw material acquisition and processing through product refinement, manufacturing, transportation, utilization, and end-of-life management.



Graphic Source: Carbon Leadership Forum, [Looking Ahead to Embodied Carbon Policy Action](#)

HOW-TO GUIDE: DEVELOPING EMBODIED CARBON POLICY FOR BUSINESSES

Key Considerations

- A [Life Cycle Analysis](#) (LCA) includes quantification of a product, process or service's carbon emissions at each stage of life (see [LCA Inventory Database](#)).
 - Verify that product suppliers and manufacturers conform to established LCA practices (i.e. [ISO 14044](#): Life Cycle Assessment)
 - Ensure LCAs have been conducted recently using product-specific or supply chain-specific data rather than generic, industry-wide data, as much as practicable.
- [Environmental Product Declarations](#) (EPDs) are useful mechanisms for evaluating a product's embodied carbon.
 - Before using an EPD, ensure claims are independently verified (e.g. [ISO 14025](#): Environmental Labels and Declarations; and [ISO 21930](#): Sustainability in Construction Products).
 - Research the governance structure, funding composition, accessibility of standards and certification criteria, and staff independence of organizations developing and administering EPDs or other carbon related declaration and labeling programs.
- Examine embodied carbon throughout business activities:
 - Review functionally equivalent products and potential impacts to performance when transitioning to products with lower levels of embodied carbon.
 - Consider the service life of a product in relation to its repairability, maintenance needs, and component replacement options.
 - Build embodied carbon-reduction policies into company-wide carbon-reduction strategies.

Guidance

1. *Managing Internal Operations:*
 - a. Use [CEOs for Sustainability's Leading Forward Roadmap for Carbon Reduction Strategies](#) to initiate performance assessments and set benchmarks for embodied carbon reductions.
 - b. Establish embodied carbon baselines for upstream, direct operations, and downstream products. Evaluate [Embodied Carbon in Construction Calculator \(EC3\)](#) for building construction and [Scope 3 Evaluator](#) as well as [GHG Emissions Calculation Tool](#) for other products.
2. *Procurement and Supply Chain Management:*
 - a. Develop and adopt a [Buy Clean Policy](#) that includes preferential purchasing and/or bid incentives for product suppliers that measure and report embodied carbon.
 - b. Use the [Choose Local](#) Business Directory for identifying local product suppliers to reduce transportation distance and resulting emissions in procurement strategies.
 - c. Evaluate [Cradle-to-Cradle Certified](#) products (product registry available [here](#))
3. *Waste Management:*
 - a. Conduct a [Resource Flow Analysis](#) to reduce the pace and/or limit the production and consumption of products and materials.
 - b. Supplement existing waste management policies with [circularity policies](#) to reduce demand for new raw materials and extend the life of existing products (i.e. [TRUE Zero Waste](#) certification)
 - c. Prioritize suppliers that offer Buyback, [Take-Back](#) and Trade-In programs to support remanufacturing and product refurbishing supply chains.

Resources and References

- The [EcoLabelIndex](#) is a global directory of ecolabels, tracking hundreds of ecolabels across the globe in multiple sectors.
- The International Social and Environmental Accreditation and Labeling Alliance ([ISEAL](#)) supports sustainability systems across multiple sectors in production, supply chain and business practices.
- The Carbon Leadership Forum, a group of building and infrastructure professionals, has developed an [Embodied Carbon Policy Toolkit](#) for those seeking specific policy options or fundamental considerations
- [The International Environmental Product Declaration System](#)