



# E-liability and Environmental Product Declarations

This note sets out the key differences between environmental product declarations (EPDs), a codified form of a life cycle assessment (LCA), and the [E-liability methodology](#), a set of accounting principles that track emissions incurred as a product moves through its value chain. It then comments on how the E-liability system can enable carbon border assessments and on how EPDs can enable rapid adoption of the E-liability system.

## 1. Static data (EPDs) v. Dynamic data (E-liabilities)

Both E-liability carbon accounting and EPDs measure GHG emissions at the product level, but they differ significantly in their granularity, accuracy, and timing. EPDs are not intended to serve as a universal system for measuring the carbon footprints of all companies' products and services. They focus on a limited set of products produced by companies in high-profile industries to comply with high-level environmental targets. EPDs are generated for regulatory-compliance purposes, are typically calculated using industry-wide average data, take many months to produce and validate, and remain unchanged for several years. Companies usually update their EPD calculations at frequencies specified by regulation and law: for example, some steelmakers update their EPD calculations every three years. Companies rarely use the regulatory-mandated EPDs for managerial decision-making on how to decarbonize their own operations and those of their suppliers.

In contrast, E-liability calculations are dynamic and can be done frequently, such as for weekly production runs. E-liability's use of primary data from suppliers enables visibility into real-time changes in supply-chain emissions, allowing companies to integrate carbon intensity, along with price, quality and delivery data, into their strategic and operational decisions. Companies can also credibly communicate to customers real-time, accurate data about their products' embedded emissions. This enables companies to lower their customers' carbon footprint by their decisions on product design, process improvements, and supplier sourcing. This link helps [align market forces with decarbonizing decisions](#).

## 2. The E-liability system avoids redundancies and is more cost-effective over time

Producing an EPD requires multiple companies in a value chain to independently and redundantly measure the emissions from the same activities. This introduces an additional compliance cost were EPDs to be scaled to all companies and products in an economy. Universal adoption of E-liability carbon accounting avoids this much higher compliance cost by having each company in a value chain calculating only its own direct emissions, which it adds to the emissions communicated to them in the products they purchase from their direct (tier-one) suppliers. After assigning their direct and purchased emissions to their output products, the company transfers its cradle-to-gate emissions to its immediate customers along with the products the customer purchases. This iterative process enables emissions to be simply tracked as products move down their value chains, akin to inventory accounting. In this way, direct



emissions are calculated once and only once in a value chain, at the place where they occur, allowing both for more robust verification and lower systemwide compliance costs.

### **3. Cradle-to-grave (EPDs) v. Cradle-to-gate (E-liabilities)**

The time scale of emissions measurement differs between EPDs and E-liabilities. EPDs require a full LCA that reports a product's carbon footprint over its entire lifetime until disposal, a cradle-to-grave approach that combines measurement of emissions released to create the product with subjective estimates of how that product will produce additional emissions in use. The EPD calculation process introduces considerable subjectivity by conflating observed and projected performance. In contrast, the E-liability approach is a cradle-to-gate method that focuses solely on the emissions generated upstream from the company, and within its own operations, to create the product. Universal adoption of E-liability carbon accounting will have all product emission calculations based on primary data, i.e., the actual and measurable direct emissions of each company in even the most complex and diverse supply chains. The data from the E-liability system is more accurate and verifiable, serving as the foundation for improved accountability and decision-making to decarbonize global supply chains.

### **4. Pertinence to carbon border assessments**

Carbon Border Adjustment Mechanisms (CBAMs) are policy solutions designed to embed carbon intensity into the price of imported goods, address carbon leakage and encourage decarbonization through trade. Implementing CBAMs will have significant financial implications for businesses worldwide as they experience much higher costs to purchase products with high embedded emissions. The magnitude of these cost increases requires that a CBAM be calculated from a robust accounting system (a "taxable basis") that is accurate, auditable, and actionable.

CBAMs should not be calculated based on industry-wide averages or inaccurate estimates of the carbon content in imported goods. Otherwise, below-average performers would not be penalized for the high carbon emissions in their output products, and they would remain unmotivated and disincentivized to reduce the currently high quantities of carbon emitted to produce their products. Even ignoring the subjectivity in an LCA's downstream emission estimates, the upstream components in an LCA rely heavily on approximations, making them ill-suited for carbon border tax calculations. The infrequent updating of LCAs will also cause the CBAM tariffs to be based on obsolete assumptions when upstream suppliers reduce the carbon content in their output products. E-liability's reliance on frequently-updated primary data from each supplier in a value chain makes this method a far more accurate and auditable mechanism for calculating the taxable carbon basis of imported goods.

### **5. Complementarities**

EPDs can facilitate E-liability adoption by providing a baseline starting estimate of supplier emissions in the absence of primary data from suppliers. The E-liability methodology



can then build upon this structure as suppliers adopt E-liability accounting to produce more accurate and more timely measurements of the direct emissions embedded in their output products. With more suppliers providing more accurate and timely carbon footprint data to their customers, each company can see how the emissions in their output products can be lowered by its decisions about product design, procurement and production processes. As more companies migrate to the E-liability system, the product-level emissions in products purchased by upstream companies, such as those extracting minerals and producing agricultural products will be embedded in the emission calculations of those upstream entities, making the entire system more accurate. This recursive calculation will accelerate decarbonization decisions by all companies in global supply chains.

Prepared by the [E-liability Institute](#), June 8, 2024. (updated June 19, 2024)