



The "New Approach Directives" represent a set of product safety regulations established by the EU, which are enforced through UK Law and Building Regulations. These directives require manufacturers to ensure that their products comply with safety standards and legal requirements. Each directive, such as the Low Voltage Directive, the Construction Products Regulation, and the Machinery Directive, is accompanied by harmonised standards listed in the Official Journal of the European Union (OJEU). These standards serve as a means for manufacturers to demonstrate compliance, often by using markings like UKCA/CE.

When it comes to product embodied carbon, there is currently no specific directive, regulation, or legislation guiding its use for manufacturers, nor does there appear to be a single accepted definition for what product embodied carbon is. Consequently, organisations across the market and supply chain are having to resort to their own judgement on which stages within an Life Cycle Assessment (LCA) they consider to be product embodied carbon, leading to confusion and ambiguity. This lack of clarity hinders both providers and users of embodied carbon data in making informed decisions.

Assuming the industry can agree on a product embodied carbon definition, accurately assessing embodied carbon remains challenging. The largely homogenous materials used in the buildings substructure and superstructure have complicated supply chains, where factors such as material mixture, origin, transportation, could theoretically change embodied carbon content on hourly basis. This complexity is further compounded when considering non-uniform Mechanical, Electrical, and Plumbing (MEP) products, which consist of multiple components with diverse supply chains and compositions.

Additionally, challenges such as protecting intellectual property can obscure information about component origins or base material compositions, making precise assessments difficult with current supply chain data.

Developing agreed-upon processes within MEP product supply chains to consistently provide comparable product embodied carbon information, while safeguarding commercially sensitive data, will require time. This effort includes establishing best practices and industry standards. The absence of these processes can be attributed to our historical focus on operational carbon emissions during a product's use, which is still the highest carbon output across an MEP's lifecycle. However, despite the relatively minor contribution of embodied carbon from MEP products to the built environment (averaging around 11% for new buildings¹ and 23% for medium intensity retrofits²), it remains a crucial area we need to consider to achieve Net Zero buildings and associated infrastructure.

Whilst this is developing, manufacturers will be able to provide product embodied carbon data in varying formats, but the market needs to be aware of the limitations in current processes.

BEAMA, the UK manufacturing trade association for energy-related infrastructure and building systems and services, acknowledges the necessity of freely available and accurate embodied carbon data for achieving a truly Net Zero built environment. To this end, BEAMA has conducted a thorough review of existing standards and policies to offer guidance to both providers and users of product embodied carbon information on the definition of product embodied carbon and to highlight the current challenges within the data collection process.

For more information and guidance from BEAMA, including to see our backed definition of product embodied carbon, visit our Product Embodied Carbon Information page here

References:

- ¹ LETI Embodied Carbon Primer (LETI, 2020)
- ² Getting to grips with whole-life carbon (CIBSE, 2019)