

Calculating Upfront Carbon:

Australia's spend-based factor for calculating Scope 3 construction emissions

July 2025

Literature Review

A scan of available data sources confirms a clear gap in publicly accessible, standardised, spend-based emissions factors for construction in Australia. While there is substantial work underway across government, industry and academia, none of these efforts yet provide the practical, Australia-specific factor that finance and sustainability teams need.

Key sources reviewed:

- **Greenhouse Gas Protocol:** Allows for spend-based estimates as one of three accepted calculation methods (alongside average data and supplier-specific methods). However, it does not provide construction-specific spend-based emissions factors, nor does it offer detailed guidance tailored to construction procurement or capital works.
- **Climate Active:** Uses IELab (Industrial Ecology Lab) data to supply spend-based emissions factors across many categories. Access is limited to members. Climate Active is currently under review.
- **IELab and Footprint Lab:** IELab's data is based on 20 years of academic modelling but is highly technical and not designed for practical industry application. IELab's commercial offshoot, Footprint Lab, provides spend-based estimates behind a paywall.
- **Infrastructure NSW:** The Embodied Carbon Measurement for Infrastructure: Technical Guidance provides some guidance on Page 62, based on earlier modelling for Infrastructure Australia. This is not suitable for broader application.

Industry and government support

Industry discussion about Scope 3 emissions has been underway for some time but these are, in the main, targeting construction or sustainability audiences.

- **NABERS Embodied Carbon:** Measures, verifies and compares upfront embodied carbon of new buildings, covering material, transport, and construction emissions. Does not include spend-based emissions factors for general construction.
- **Green Building Council of Australia:** The GBCA's *Scope 3 discussion paper* (2024) notes the need for benchmarking data to support reporting entities, particularly for fitouts.
- **Australian Sustainable Built Environment Council:** ASBEC's policy roadmap, *Our upfront opportunity* (2025), recommends investment in an "aligned national framework and tools to baseline, measure, benchmark, disclose and reduce embodied carbon through a unified methodology and common database".
- **Infrastructure Australia:** *Embodied Carbon Projections for Australian Infrastructure and Buildings* (2024) recommends governments "continue developing a nationally standardised embodied carbon measurement system, which allows for consistent methods to collect, measure, and assess data about embodied carbon."
- **GRESB:** In 2024, GRESB surveyed infrastructure asset participants and found inconsistent Scope 3 reporting and no universally agreed definition of materiality.

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- **PCAF, CRREM and GRESB:** The Partnership for Carbon Accounting Financials (PCAF), Carbon Risk Real Estate Monitor (CRREM) and GRESB released technical guidance for *Accounting and Reporting of GHG Emissions from Real Estate Operations* (2023), but this does not include spend-based emissions factors.
- **Property Council of Australia:** Its 2023 submission on climate disclosure reporting identified the need for a standard Scope 3 methodology for capital works.
- **Australian Sustainable Finance Institute:** Expects to release the Australian Sustainable Finance Taxonomy mid-2025. Spend-based factors are not included.

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