Energy Efficiency in Buildings

Whole Life Carbon & ESG: WLCA, GRESB, BREEAM, LEED, NABERS, CRREM &SBTi

5 April 2024

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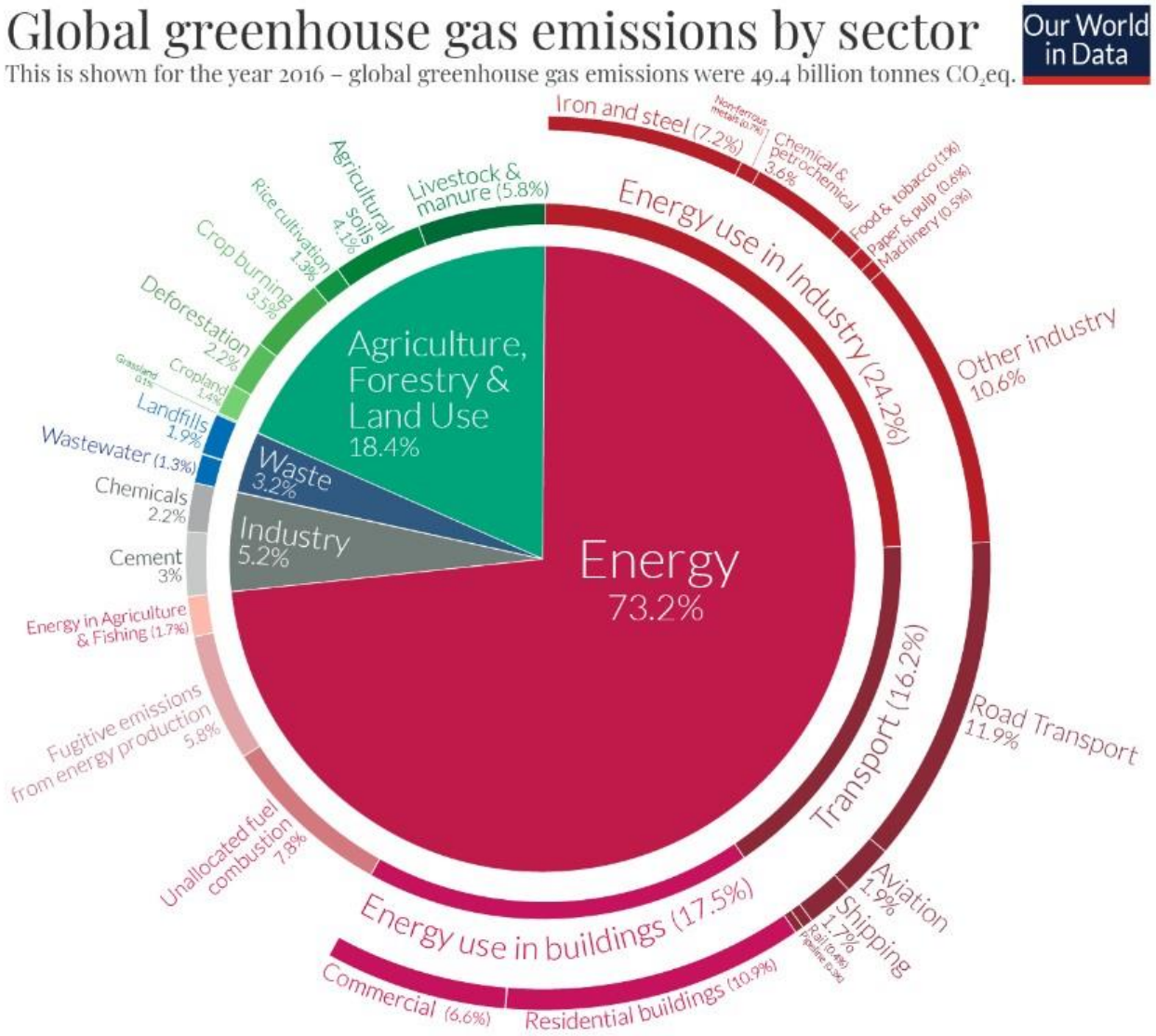
Thought Leadership & Analysis

Who are RICS?

- Global Professional Body, Standard Setter & Regulator
- 110k members
- Setting technical and conduct standards
- Working across the built and natural environment
- Working across the complete land and property lifecycle
- Working across land, residential, commercial, alternative and infrastructure assets
- Valuing real estate, businesses, intangibles, plant and machinery, personal property, and arts and antiques

Why Whole Life Carbon?



Market Drivers

- Occupier Demand
- Flight to Quality
- Maintaining rental and capital value
- Avoiding stranded assets
- It is the right thing to do!

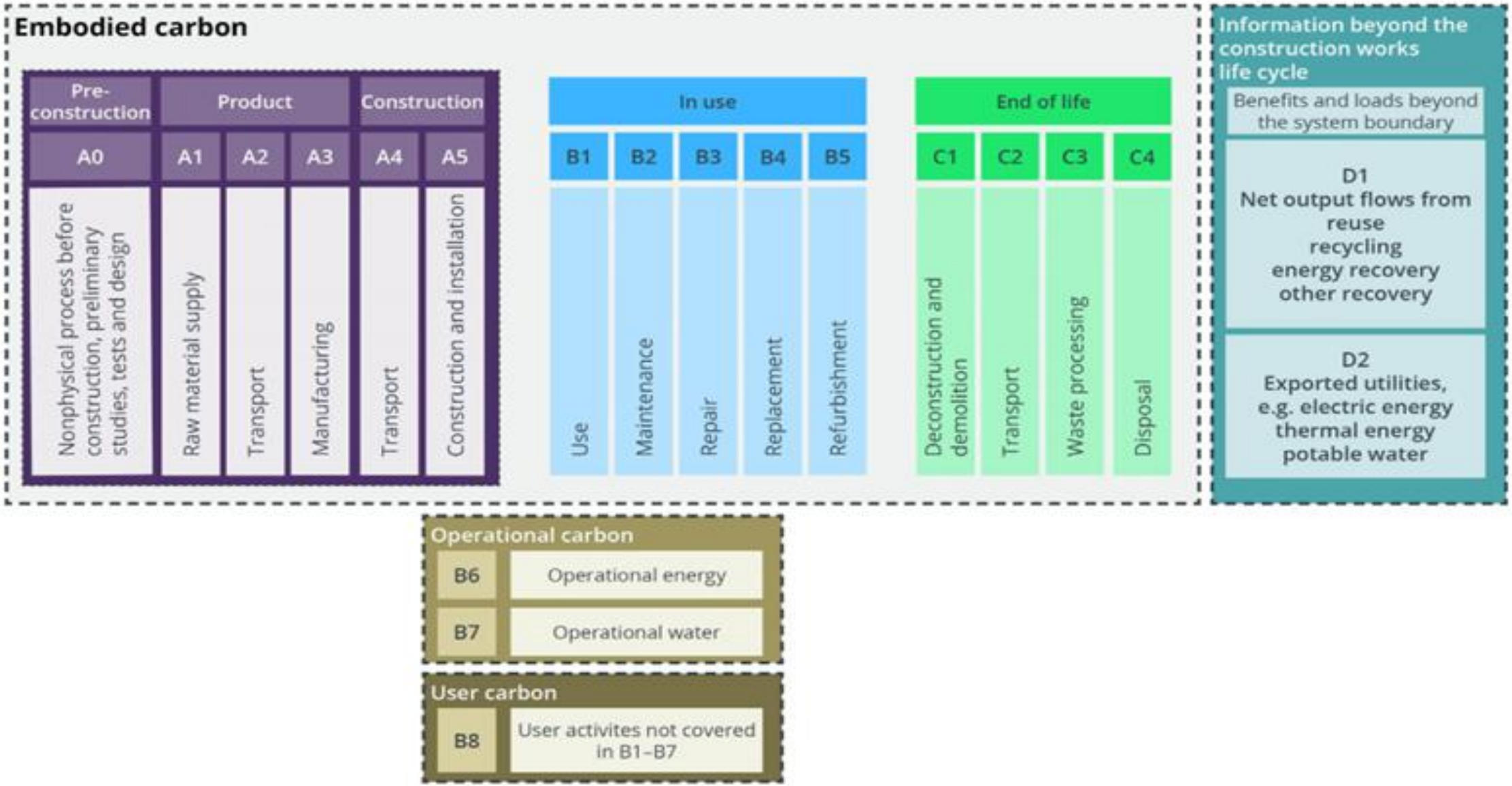
Regulatory Drivers

- ‘Fit By 55’:
  - Under the European Climate Law, the EU committed to reduce its net greenhouse gas emissions by at least 55% by 2030
- Energy Performance of Buildings Directive
  - Reduce greenhouse gas (GHG) emissions and energy consumption in the EU building sector, and make it climate neutral by 2050
  - All new buildings should be zero-emission as of 2030
  - New buildings occupied or owned by public authorities be zero-emission as of 2028
  - A common European framework for renovation passports must be established
  - Member states will have to renovate the 16% worst-performing non-residential buildings by 2030 and, by 2033, the worst-performing 26% through minimum energy performance requirements
  - Emissions will consider the life-cycle global warming potential of a building, including the production and disposal of the construction products used to build it
  - Measures for residential building to ensure a reduction in the average primary energy used of at least 16% by 2030 and at least 20 to 22% by 2035.

Whole Life Carbon Assessment - Goals

- Compare design options and products or materials
- Make end-of-life decisions
- Identify the most significant emissions contributors
- Comply with regulations
- Document environmental performance
- Achieve green building rating certification
- Develop a retrofit plan for existing assets
- Calculate the carbon footprint for a portfolio of assets for organisation-level reporting

Whole Life Carbon Assessment - Scope



ESG: Benchmarking & Certifications

- GRESB:
  - Evaluates environmental, social, and governance (ESG) factors
  - Operates globally, assessing real estate portfolios and infrastructure assets worldwide
  - Primarily focuses on assessing the sustainability performance of real estate portfolios and infrastructure assets
- SBTi:
  - Provides a framework and guidelines for companies to set science-based targets (SBTs) that align with limiting global warming to well below 2°C above pre-industrial levels,
- BREEAM:
  - Assessments result in ratings ranging from Pass to Outstanding, providing a framework for designing and operating sustainable buildings.
  - Originated in the UK but is now used internationally, with assessments conducted in various countries
  - Assesses various aspects of sustainability, including energy, materials, water, ecology, pollution, and management processes

ESG: Benchmarking & Certifications (cont'd)

- LEED:
  - Provides a framework for designing, constructing, operating, and certifying green buildings based on factors such as energy efficiency, water conservation, indoor environmental quality, and sustainable site development
  - Originally developed in the United States but has expanded globally, with certifications available for projects worldwide
- NABERS:
  - Australian sustainability rating system that measures the environmental performance of buildings, tenancies, and homes.
  - Assesses factors such as energy efficiency, water usage, waste management, and indoor environmental quality.
  - Ratings range from zero to six stars, with six stars representing market-leading performance
- CRREM:
  - Primarily assesses carbon intensity and associated climate-related risks of real estate assets
  - Provides a benchmarking tool for assessing carbon risk in real estate portfolios but does not offer certification.

ESG Data List for Real Estate Valuations

- A practical reference document on legislative, market-driven and future ESG requirements for valuers and financial clients in the EU

	ESG indicator	Data to be captured and analysed	Unit of measurement/indicative performance measure
01	Energy rating	• Energy Performance Certificate (EPC) • Other energy ratings in the market • Any improvements to the building made since the energy rating occurred?	• Energy label (A–G) • kWh/m² • Expiry date of EPC • Yes/no; if yes, please specify
02	Energy consumption	• Primary and final energy consumption • Energy intensity	• kWh/m²/year • kWh/m²
03	Renewable energy production (onsite)	• Method of energy generation • Quantity and specification of renewable energy systems (e.g. solar panels, heat pumps, biomass, wind turbines) • Heating source • Usage	• kWh/m²/year • % of primary/final energy demand met by renewable energy produced onsite • % used on-site versus % delivered back to the grid
04	Labels and certificates	• Green building certification schemes • National-level certificates • BREEAM, LEED, WELL, Fitwel, BOMA360, SHORE This is not an exhaustive list.	• Label/certificate – yes or no; if yes, specify the level • Date of issue and expiry
05	Greenhouse gas emissions	CO_2 emissions, both excluding and including refrigerant gases, based on real energy consumption	• $kgCO_2e/m^2$/year
06	Emissions pathway analysis	• CRREM pathway analysis • Other pathway analysis (examples include ParisProof in The Netherlands, DGNB SYSTEM for Buildings In Use (or DGNB AWARD 'Climate Positive') in Germany and beyond, BREEAM In-use and UK Net Zero Carbon Buildings Standard • Benchmark curve • Stranding date • Transition risk	• Whether current property performance is on the pathway and in line with future targets • Decarbonisation capex and updated stranded date

ESG Data List for Real Estate Valuations (cont'd)

	ESG indicator	Data to be captured and analysed	Unit of measurement/indicative performance measure
07	Physical climate risk	• Climate risk (such as flood, heat, drought, sea level, precipitation) analysis issued by a recognised source (e.g. MSCI, Moodies, R4R) • Mitigation measures already in place?	• Has the client done a study indicating whether the property is subject to climate risk by 2050 (yes/no)? • If no, or not entirely, are the mitigation measures taken into account in the capex budget?
08	Location characteristics	• Local infrastructure (including utilities for its occupants) • Connectivity (e.g. highways, distance from public transport, mass transit services/routes, frequency)	• Amenities in and around the building • Walkaility score (how easy it is to reach certain essential places on foot) • Types of buildings in the proximity • Public transport proximity and frequency
09	Mobility	• Number of EV charging points • Bicycle parking spaces for residents/occupiers	• Charging points per FTE/total number of parking spaces • Number of bicycle parking spaces per FTE
10	Building access	• Access for people with disabilities	• Confirmation of compliance
11	Landlord-tenant relationship	• Tenant activity • Rental contract types • Green leases in place	• Description of current tenants • Contracts and/or green leases in place
12	Material use	• Materials used for construction or renovation	• % of material by total weight/volume/value • % of material certified for their sustainable qualities

Q&A

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