

Purpose and objectives of the Report:

- Spark a **global conversation** around the **value and importance** of aiming for net zero embodied carbon (NZEK)
- **Communicate the urgency** and set goals and milestones for achieving NZEC
- **Stimulate demand** for NZEC and show it can be achieved through industry collaboration, transparency and immediate action
- **Advocate for policy and regulation** towards NZEC



Definition:

Net zero **embodied carbon** should be pursued as part of a whole lifecycle approach to carbon reduction that includes net zero **operational carbon**.

Our definition of net zero embodied carbon in practice:

A net zero **embodied carbon** building (new or renovated) or infrastructure asset is highly resource efficient with **upfront carbon** minimised to the greatest extent possible and all remaining **embodied carbon** reduced or, as a last resort, offset in order to achieve net zero across the lifecycle.



Principles:

1 Prevent

Avoid embodied carbon from the outset by considering alternative strategies to deliver the desired function

2 Reduce and optimise

Evaluate each design and construction choice in terms of the upfront carbon reductions and as part of a whole lifecycle approach

3 Plan for the future

Take steps to avoid future embodied carbon during and at end of life, maximising potential for maintenance, renovation, reuse and deconstruction

4 Offset

As a last resort, offset residual embodied carbon emissions within the project or organisational boundary where possible or if necessary through verified offset schemes.



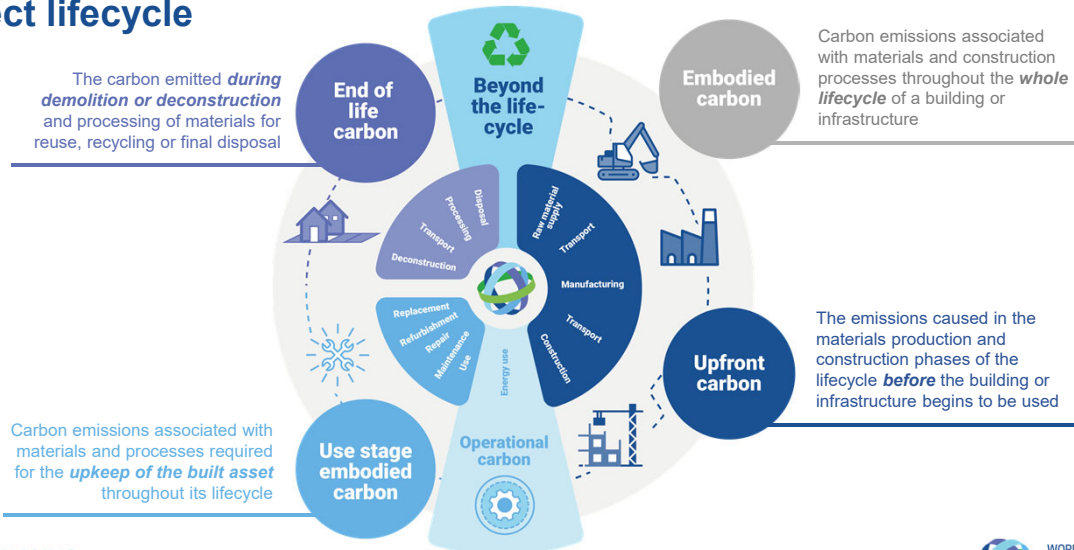
Vision:

By 2030, all new buildings, infrastructure and renovations will have at least 40% less **embodied carbon** with significant **upfront carbon** reduction, and all new buildings must be net zero **operational carbon**.

By 2050, new buildings, infrastructure and renovations will have net zero **embodied carbon**, and all buildings, including existing buildings, must be net zero **operational carbon**.



Project lifecycle



Summary of actions



Roadmaps



Data



Target setting



Policy



Disclosure



Build / develop



Leadership action



Tools



Certification



EPD EPDs



Finance



Renewable energy



Design



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Theory of change

Collaboration

Establishing roadmaps to form a common vision

Communication

Raising awareness and building capacity

Education

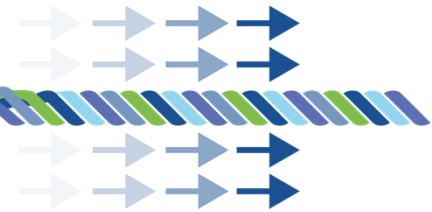
Addressing foundational gaps in skills, data and benchmarks

Innovation

Creating new business models, new technologies and circular patterns

Regulation

Mandating reductions in embodied carbon that are aligned with 1.5°C compliant decarbonisation pathways



Accelerate

Harness the power of voluntary, financial, policy and regulatory market forces



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Act Now! Immediately, all stakeholders must:

- **COLLABORATE** to create action roadmaps
- **COMMUNICATE** ambitions, successes and research
- **ADVOCATE** for embodied carbon reduction policies at regional, national and international level
- **EDUCATE** all relevant members of the value chain



Confirmed endorsements

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| <ul style="list-style-type: none"> • Aalto University, Department of Architecture • ABN AMRO Bank • AECOM • AESG • Akzonobel • Atelier Ten • Australian Sustainable Built Environment Council • Avison Young • B+H Architects • Barratt Developments PLC • Bennetts Associates • Building Research Establishment (BRE) • C40 Cities Climate Leadership Group • Canary Wharf Group • Carbon Leadership Forum • CEN/TC350, Sustainability of Construction Works • City Developments Limited • City of Melbourne • City of Sydney | <ul style="list-style-type: none"> • City of Vancouver • Climate Bonds Initiative • Climate Agency, City of Oslo • Cundall • Dalmia Cement (Bharat) Limited • Danish Building Research Institute, Aalborg University • EDGE ENVIRONMENT • EllisDon • Energy Research Institute @ Nanyang Technological University • Energy Transitions Commission • Entra ASA • European Bank for Reconstruction and Development • Frasers Property Australia • GECA: Sustainability & Environmental Certification Program • Global GreenTag International Pty Ltd • Global Infrastructure Basel Foundation • Google • Grosvenor • HeidelbergCement • Infrastructure Sustainability Council of Australia | <ul style="list-style-type: none"> • Integral Group • Interface • International Living Future Institute • JLL • Knauf Insulation • LafargeHolcim • Landsec • Lemay • Majid Al Futtaim Holding • Mantle • Microsoft • Ministry of the Environment, Finland • Morgan Sindall Group • Morrison Hershfield • Multiplex Global • New York City Mayor's Office of Sustainability • One Click LCA / Bionova Ltd • Pan-United Concrete Pty Ltd • Ramboll • RDT Pacific • RICS • Royal BAM Group • Royal Institute of British Architects • Ruukki Construction Oy | <ul style="list-style-type: none"> • Saint-Gobain • Schneider Electric • Signify • Skanska Group • Skidmore, Owings & Merrill LLP • SSAB AB • Stanhope PLC • Statsbygg (Norwegian Directorate of Public Construction and Property) • Stora Enso • Surbana Jurong Consultants Pte Ltd • The Carbon Trust • The Climate Group • thinkstep ANZ • Upponor Corporation • Urban Green Council • Volvo Construction Equipment • We Mean Business • Willmott Dixon • World Business Council for Sustainable Development • WSP |
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Endorsement Statement:

The following organisations endorse the vision and ambition of this report, recognising the need for coordinated action across the whole value chain to achieve this. Their endorsement is a call to others to join them and work together to fully decarbonise buildings and infrastructure by 2050.



**“Bringing embodied carbon
upfront”**



