Carbon Reduction Code for Infrastructure Sector Clients & Supply Chain Members – Draft Issue 1.0

Introduction: This document was drafted by the *CSIC Achieving Net Zero Cross-Industry Working Group*. It is a first step to facilitate action by relevant parties towards reducing carbon emissions (CO_2eq) related to design, construction, maintenance and operation of built assets. It is not intended to replace PAS 2080 (or equivalent standards), which provides a common framework for all infrastructure sectors and value chain members on how to manage whole life carbon when delivering infrastructure assets and programmes of work.

Carbon reduction is more likely to happen when all organisations within a value chain are committed to reducing their footprint and saving costs. Carbon collaboration is the key to success, and with alignment across all parties we are confident we'll achieve transition towards the net zero carbon objective.

This will need to be delivered within and alongside the wider, coordinated system-of-systems approach needed across the economy.

[Note: in this document, where we refer to carbon we mean CO_2eq]

THE CODE:

All organisations:

1. We will aim to reduce our direct and indirect (Scope 1, 2 and where appropriate Scope 3)[1] carbon emissions by at least 75% by 2025 (20% per year, compound, on average) in order to meet zero carbon emissions by 2045 (or the relevant government stipulated date, if earlier).
2. We will set out our plans to meet net zero by 2045, including annual targets, recognising that the majority of cuts need to be made by 2030 [see note 1]. We will publish this, and our progress against it, annually.

Client Organisations (including Public Sector and Regulated clients)

CORE COMMITMENTS:

3. We will include carbon reduction targets and reporting commitments explicitly in all our procurement documents from 2021, as a deliverable of the procurement process, to move the 'cost-carbon' balance in favour of low carbon choices. This will include capital carbon (product, A1-A3 and construction processes, A4-A5, according to the quantification framework of PAS 2080). We will use PAS 2080 (or equivalent standard) as the reference document for this.
4. We commit to providing a carbon baseline for each of our projects and setting targets for carbon reduction against these, which will drive innovation. We will also include, where appropriate, progressive carbon reduction targets throughout the life of a project and appropriate financial incentives, having regard to the other commitments on the code[2]. Carbon offsetting may be

[1] Ref. Greenhouse Gas Protocol https://ghgprotocol.org/

[2] Appropriate financial incentives might include contractual mechanisms/outcomes linked to low-carbon targets, such as: bonus structures, KPI regimes, performance failure damages, shared supply-chain incentive regimes, contract price rebates/reductions, pain/gain mechanisms, testing/defect remedies being activated and the required target being a condition of handover/acceptance.

unavoidable but should be the last resort and used when all other carbon reduction efforts are exhausted. Carbon offsetting should follow the Oxford offsetting principles [3] or equivalent.

5. We commit to having our carbon data externally verified as part of our reporting requirements e.g. via CEMARS in compliance with ISO 14064-1:2006

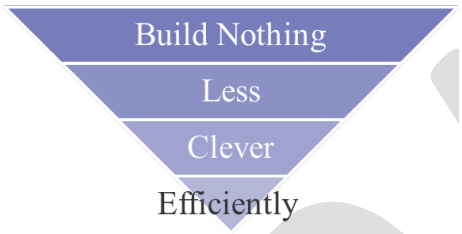
FURTHER COMMITMENTS TO FACILITATE THE TRANSITION TO NET ZERO:

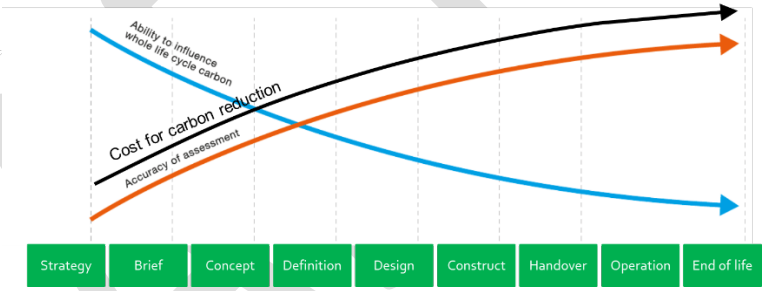
6. We commit to explore and adopt approaches that:

    a. improve our capability to evaluate, as well as reduce, embedded and operational carbon in the design and construction phase;

    b. measure and reduce carbon emissions during the life of existing assets and during decommissioning.

7. We will align our capital and operational investment plans with the national net zero carbon obligation, including retrofitting decarbonisation to our existing asset operations and their use. We will use early-stage optioneering to prioritise no-build and low-build solutions, which optimise existing assets, systems and processes, before new build is considered[4].





8. We will provide our supply chain with outcome-based[5] specifications and commercial arrangements, where possible, ensuring outputs are not constrained to current thinking but encourage low carbon innovations.

9. As clients, we will work together (with our peers, umbrella industry bodies and our supply chains) to share best practice around our methodologies for carbon measurement and management. By also understanding where we have 'common asset types and activities' we will ensure we all measure and report on the carbon in these assets/activities consistently by 2022.

10. By 2025 we will have in place an Infrastructure Carbon Data Set, which will be used wholly by the sector. To achieve this, we commit to share our carbon data openly, through a national carbon integrator (where available) and through working with industry.

11. Using our common understanding of ecosystem services we will share knowledge and information on the benefits of nature-based solutions for carbon sequestration and increased resilience instead of 'hard engineering' interventions. This will allow carbon capture to be reported on consistently across the infrastructure sector.

12. We will share our decarbonisation roadmaps both for new and existing assets, with the aim of contributing towards the national net zero carbon transition.

[3] https://www.smithschool.ox.ac.uk/publications/reports/Oxford-Offsetting-Principles-2020.pdf
[4] Diagrams based on the Infrastructure Carbon Review
[5] Ref. Project 13 http://www.p13.org.uk/

Supply chain organisations (contractors and consultants)

CORE COMMITMENTS:

3. We will report on our operational carbon (Scope 1, 2 and where appropriate Scope 3) publicly from 2021, and reduce the carbon intensity of our projects year on year (to achieve the long-term targets set out in Point 1)

4. We will automate production and delivery of CO_2eq information through design and construction by using integrated approaches to data creation and management. This will inform optimal solutions through the build phase and streamline delivery of information to clients.

5. We will proactively recommend and adopt carbon measurement and carbon reduction methodologies in all our projects for both design and construction, including whole-life carbon approaches, regardless of whether the clients are requesting them. We will use PAS 2080 (or equivalent) as the reference document for this.

6. We will work in close collaboration with clients and with our supply chain partners to deliver on the clients' carbon requirements, and inform the development of approaches and standards.

FURTHER COMMITMENTS TO FACILITATE THE TRANSITION TO NET ZERO:

7. *(Consultants)* We will work with clients to consider the carbon hierarchy options before a new build is committed to. Where possible, we will integrate nature-based solutions in the design development and delivery of projects.

8. We commit to sharing our own best practice across the supply chain and learning from and adopting others best practice where possible. (With reference to the Supply Chain Sustainability School[6], and annual reports of the Infrastructure Carbon Review[7])

9. *(Contractors)* We will proactively support our supply chain to adopt carbon measurement and carbon reduction, and will require them to report on carbon.

10. We will contribute carbon reduction data to a publicly available carbon measurement database for the purposes of benchmarking and performance improvement.

Note 1:

Note that in 2026, we will be 20% of the way to 2050, from 2019. It is anticipated that we will need to make most of our carbon reductions with existing technologies, rather than relying on new technologies to emerge.

According to the Pareto principle, we need to reach 80% reduction vs 2019 by 2026 in order to reach net zero by 2050 (current UK government law). This implies emissions reductions of ~20% per year:

	Residual annual emissions in given year, at given rate of reduction, vs. 2019 emissions:					
	10%/yr	**12%/yr**	**15%/yr**	**18%/yr**	**20%/yr**	**25%/yr**
2025	53%	47%	38%	31%	27%	18%
2026	48%	41%	32%	**25%**	**21%**	14%
2030	32%	25%	17%	12%	9%	4%

[6] https://www.supplychainschool.co.uk/
[7] https://www.gov.uk/government/publications/infrastructure-carbon-review

GUIDANCE AND INFORMATION

This initiative sits within a wider context of the ICE Carbon Project, the Infrastructure Carbon Review 7 Years On and CLC's Green Construction Board. On its own it is not sufficient to deliver a Net Zero UK, but it does enable individual organisations to publicise their annual progress, and thereby collaborate and share best practice on their journey to Net Zero with the intention of accelerating progress across the industry.

Related initiatives that may provide additional guidance and structures to achieve the commitments of the code include:

1. Infrastructure Carbon Review (2013) and the ICR Seven Years On Report [REF?]
2. PAS2080 (available from BSI) and the accompanying guidance document
3. Engineers Declare and related initiatives: Architects Declare; Civil Engineers Declare; Structural Engineers Declare
4. CIH Procuring for Value framework and toolkit
5. The Netherlands Carbon Performance Ladder: used in the Netherlands to reward improved carbon performance through procurement.
6. Construction Playbook 2020
7. HMG Green Book
8. ICE Carbon Project