

RDP - PAS2080: Managing Carbon in Infrastructure Webinar

18 April 2023

10am – 11.30am



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Action Sustainability
*Head of Consultancy
and Carbon*



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Keltbray
*Head of Environmental
Sustainability*



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Anglian Water
*Head of Carbon
Neutrality*

PAS2080: Managing Carbon in Infrastructure

Regional Delivery Partnership
(RDP) initiative

Mark Emmett National Highways
April 2023

Why do we need to achieve net zero?

- **Legal requirement** – Government has a legal requirement to cut emissions by 78% by 2035 compared to 1990 levels in line with carbon budget 6
- **Disruption** – Climate change causes extreme weather events, disruption and costs. UK 3rd Climate Change Risk Assessment forecasts up to **£20bn** per year by 2050
- **Growth** – Skidmore Review of UK progress towards 2050 net zero target finds **urgent action is needed** to stay on track (Jan 2023)

Net zero: Climate action delay will hurt economy, Tory MP's review says

© 13 January · Comments

UK average annual temperature in 2022 above 10C for first time, Met Office says



Our Net Zero Plan



**Net Zero
by 2030**

Our vehicle fleet
Our offices and depots
Corporate purchases
Business travel



**Net Zero
by 2040**

Material manufacture
and usage
Transport of materials
On-site activities



**Net Zero
by 2050**

Cars
Buses and coaches
HGVs
Sustainable travel

Overview of key achievements from 2022



CORPORATE EMISSIONS



Launched our Green Car Salary Sacrifice Scheme (54 EVs ordered)



Greened 20 of our depots through carbon reduction measures



67% of our vehicle fleet upgraded to ultra-low emission (exceeding DfT target)



Upgraded 28% of our road lighting to LED



Launched 4 carbon literacy e-learning modules

2021-22
68%
reduction



MAINTENANCE & CONSTRUCTION EMISSIONS



CMS implemented and accredited to PAS2080:2016



Developed our Carbon Construction Innovation Programme



Published net zero roadmaps for concrete, steel and asphalt



Trialled low carbon materials on schemes including the A590 and M42



Launched our low carbon opportunities register

2021-22
29%
reduction



ROAD USER EMISSIONS



Worked with DfT to understand approach to HGV trials



Trained 100% of our traffic officers to deal with electric vehicle (EV) breakdowns



Supported RIS3 planning in line with CB6



Undertook freight trials with our partners

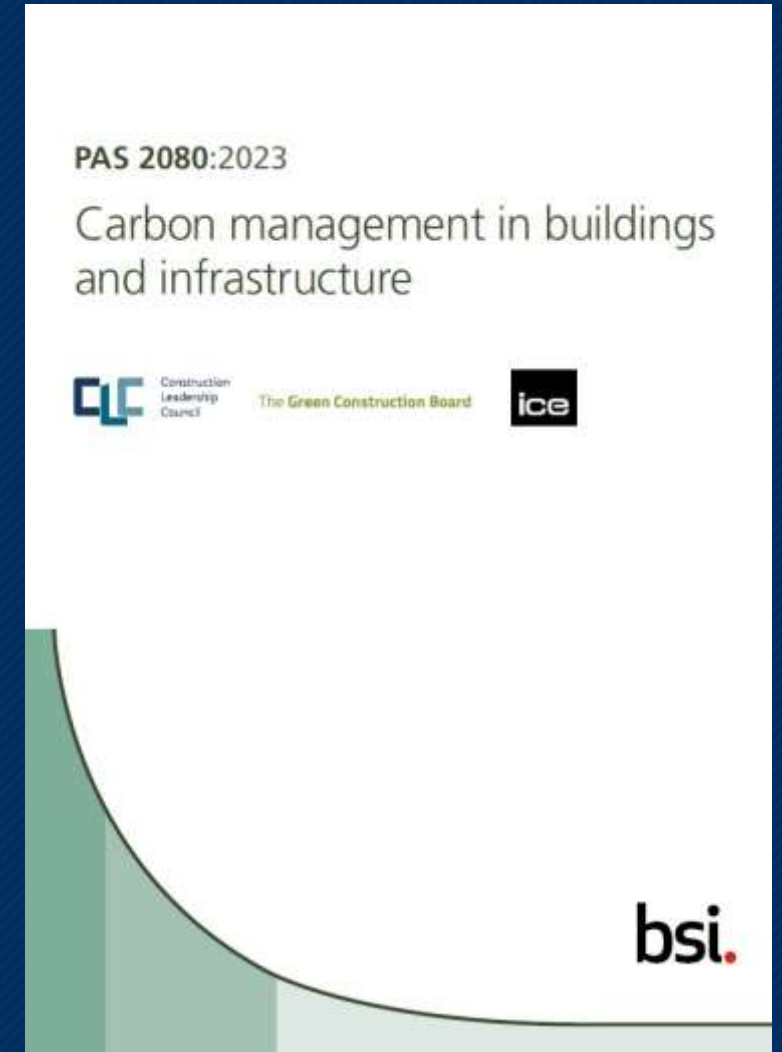


Integrated zero carbon into an update of our Planning Guide

2021-22
1%
reduction

What is PAS 2080?

- PAS2080: Carbon Management in Buildings and Infrastructure: Requirements for robust carbon management processes in infrastructure delivery – published earlier this month
- 5 key enablers:
 - Leadership
 - Metrics & Governance
 - Commercial Solutions
 - Culture
 - Innovation/Standards
- Being 'compliant' to PAS2080 means:
 - ❖ Having the capability to identify and deliver low-carbon solutions
 - ❖ Reviewing what you are doing against each of the 5 enablers
 - ❖ Gathering evidence and documenting responsibilities
 - ❖ Having your carbon management processes/approach verified (third-party is recommended)



Overview of priority deliverables for 2023



CORPORATE EMISSIONS



Identify locations for tree planting in the first year



Replace 15,000 road lighting bulbs with LEDs



Integrate net zero into our Environment sustainability Strategy



Agree a zero-carbon memorandum with our landlords



Provide EV charging infrastructure at 49 depots and outstations



Verify our carbon targets with SBTi



MAINTENANCE & CONSTRUCTION EMISSIONS



Share carbon resources through our new external SharePoint page



Embed our CMS into project delivery and maintenance activities as BAU



Pilot net zero plant on our construction sites



Integrate zero carbon into our procurement processes



Support our supply chain to become PAS2080 accredited (by 2025)



ROAD USER EMISSIONS



Publish a blueprint for EV charging services on our roads



Launch our plan to improve the experience for bus and coach passengers



Support £950m of rapid charging infrastructure at MSAs (Project Rapid)



Report on how we can help reduce empty lorry movements on the SRN



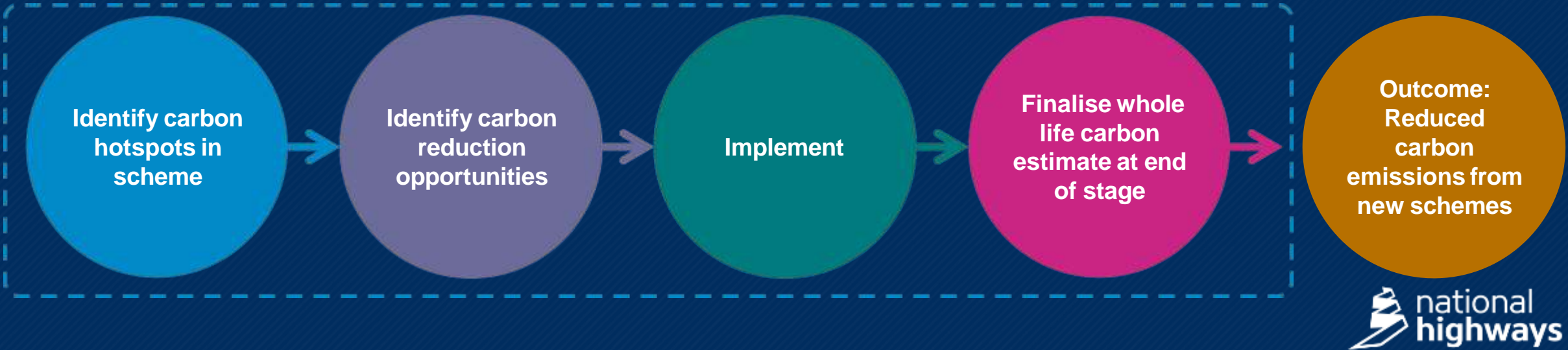
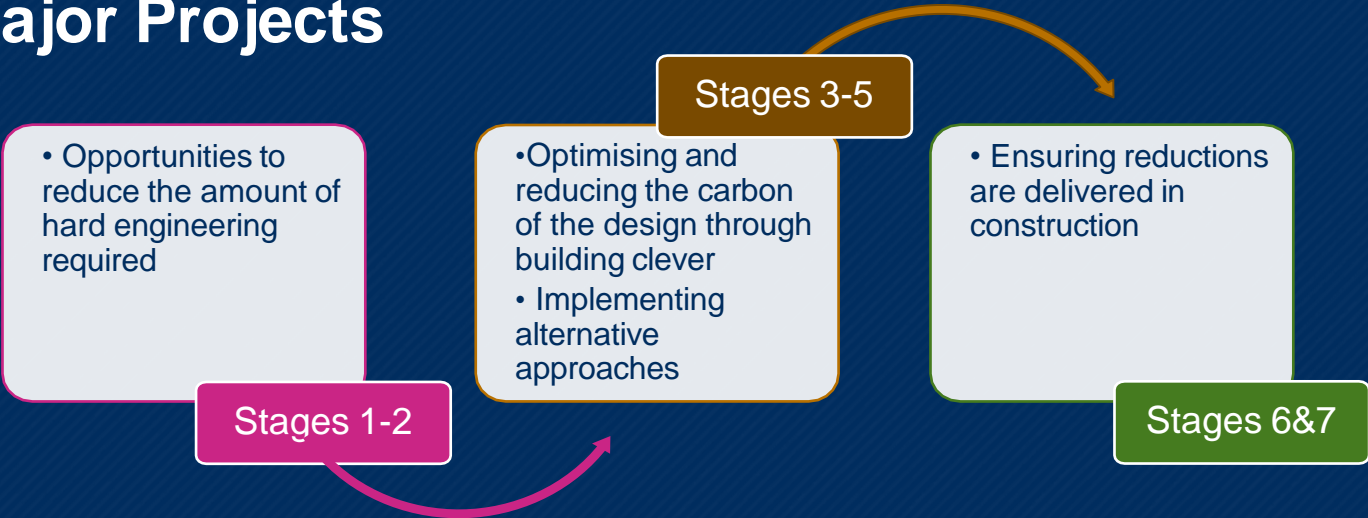
Deliver energy storage solutions at 11 MSAs

Our PAS2080 accredited Carbon Management System (CMS)



Carbon management process for Major Projects

PAS 2080 requires us to measure and reduce our carbon emissions on our projects. All projects will be required to identify and implement opportunities to deliver carbon reductions, quantify the estimated whole life carbon emissions at each PCF stage.



Carbon Construction Innovation Programme (CCIP)

Please contact
Melissa Giusti
(Senior Innovation
Advisor, SES) for
more information.

This year we've started
development of our Carbon
Construction Innovation
Programme (CCIP)

CCIP will oversee the
implementation of trials on our
projects and will help us
develop an evidence base –
We'll be able to identify which
opportunities can be rolled out
more widely across our
network, without
compromising safety.

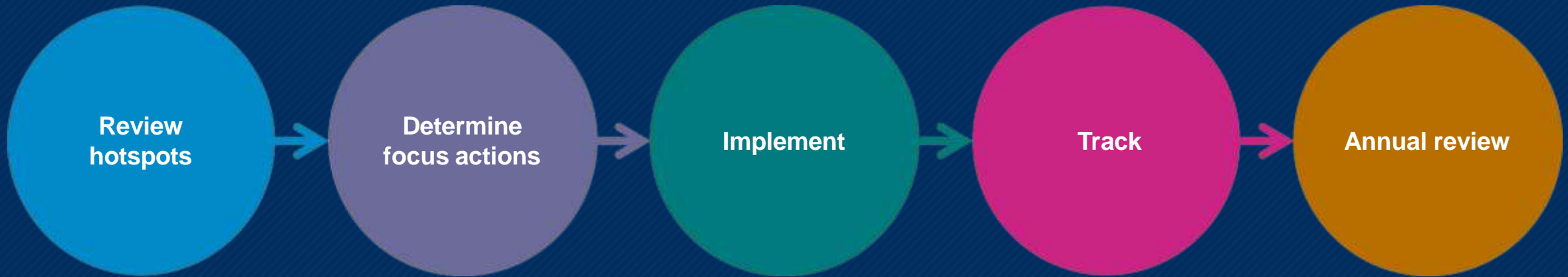
Our new Net Zero Innovation
Board will help identify and
define those challenges and
opportunities where
innovation has a role to play.



Operations 3D carbon management

To reduce carbon emissions through operations the key focus is renewals. A streamlined approach minimising time and effort whilst gaining good outcomes has been developed.

This involves the following key parts:



Low Carbon Opportunities Register

In each Road Period we will identify which low/zero carbon products, technologies and opportunities we could use in construction and maintenance

Our ambition was: to develop and maintain a comprehensive register of all low carbon opportunities known to National Highways. This is designed to be a single source of reference.

115 opportunities have currently been validated for publication with additional opportunities to be included.

Potential **CO₂e reduction** captured qualitatively and against a clear baseline

All opportunities have been allocated 5 point scales for **innovation maturity** and **applicability to the SRN**

Updates or additions to the register can be logged via a form available on the landing page

Carbon reduction hierarchy and **opportunity type** to help users navigate the register

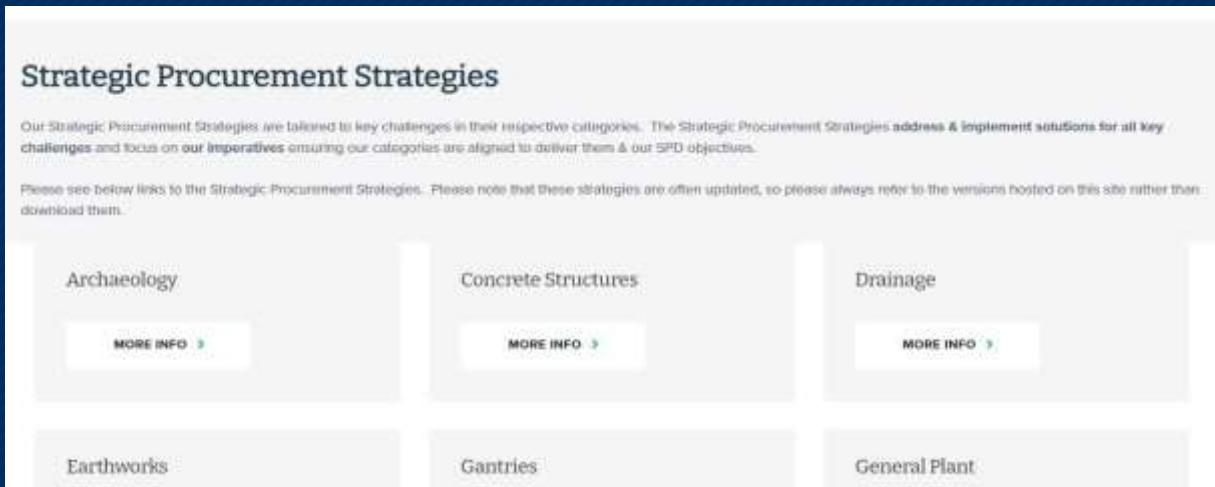
Opportunities mapped by:

- MCHW series no
- Asset class
- Procurement categories

Not a replacement for standards
Interpretation of which opportunities to pursue ultimately sits with the end user

Net Zero Materials Roadmaps & Category Carbon Plans

- We have developed and published roadmaps to help concrete, asphalt and steel reach net zero by 2040.
- They set out the steps that we and our supply chain will need to take to achieve net zero emissions for each material.
- For all other procurement categories, a carbon plan has been developed, which outlines phased goals and deliverables to 2025 and beyond.



What we need from you



We need our supply chain to innovate and reduce carbon

- UK 2050 Net Zero Target
- DfT Mandate
- We need to work together to reduce our carbon emissions



Suppliers will have their own CMS accredited to PAS2080

- This will be mandated for Tier 1 and 2 suppliers by 2025
- Proportionate approach for small and micro suppliers, but will still be expected to align with key principles



NH to focus spend on suppliers which have SBTi aligned targets

- Near and long term with Net Zero target
- Within 5 years of National Highways submitting their own targets to SBTi

We are the first major roads organisation to achieve PAS 2080 accreditation

- Our Carbon Management System was successfully accredited to PAS2080:2016 in December 2022
- We're the first major roads organisation to achieve this accreditation
- We'll be PAS2080 audited every year and will need to show continual improvement – our Carbon Management System will be key to this
- Our Net Zero Plan includes a commitment that our Tier 1 and Tier 2 suppliers will also need PAS2080 accreditation by the end of 2025

We become world's first roads organisation to achieve global carbon management standard



Our management system to reduce carbon during the design, construction, and operation of England's strategic road network has achieved Publicly Available Specification (PAS) 2080 accreditation.

Leadership and governance

Set the tone for carbon reduction

The carbon management process

Build carbon into delivery and decision-making processes

Quantification

Deliver consistent whole-life carbon assessments

Target setting and baselines

Targets drive projects and programmes to deliver low-carbon solutions

Reporting

Document and share information that supports low-carbon

Continual improvement

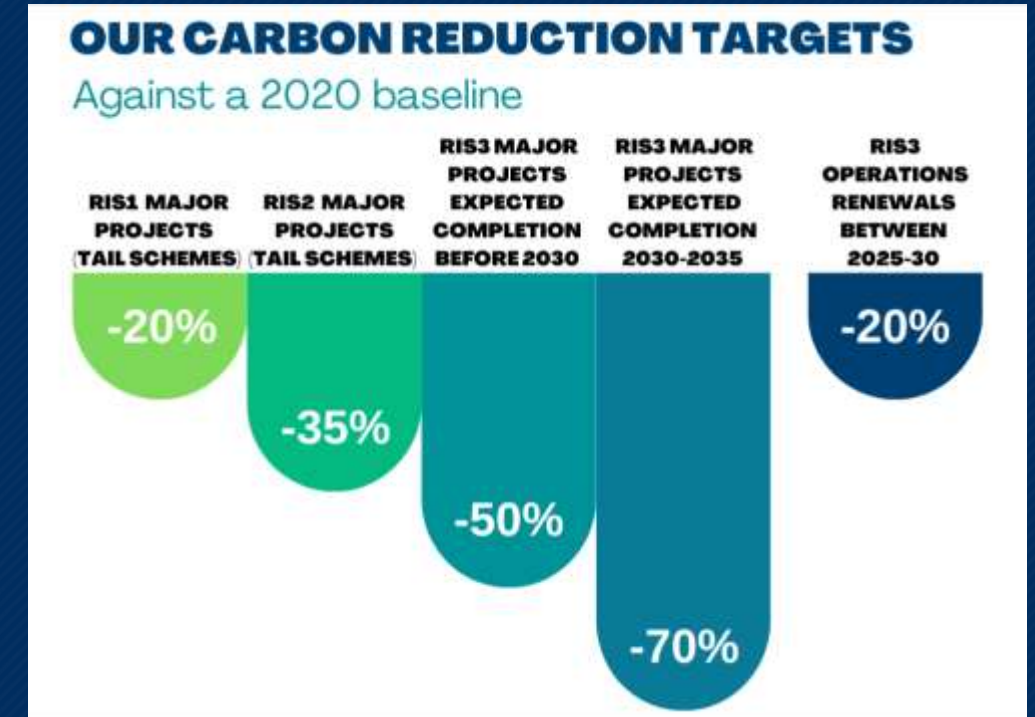
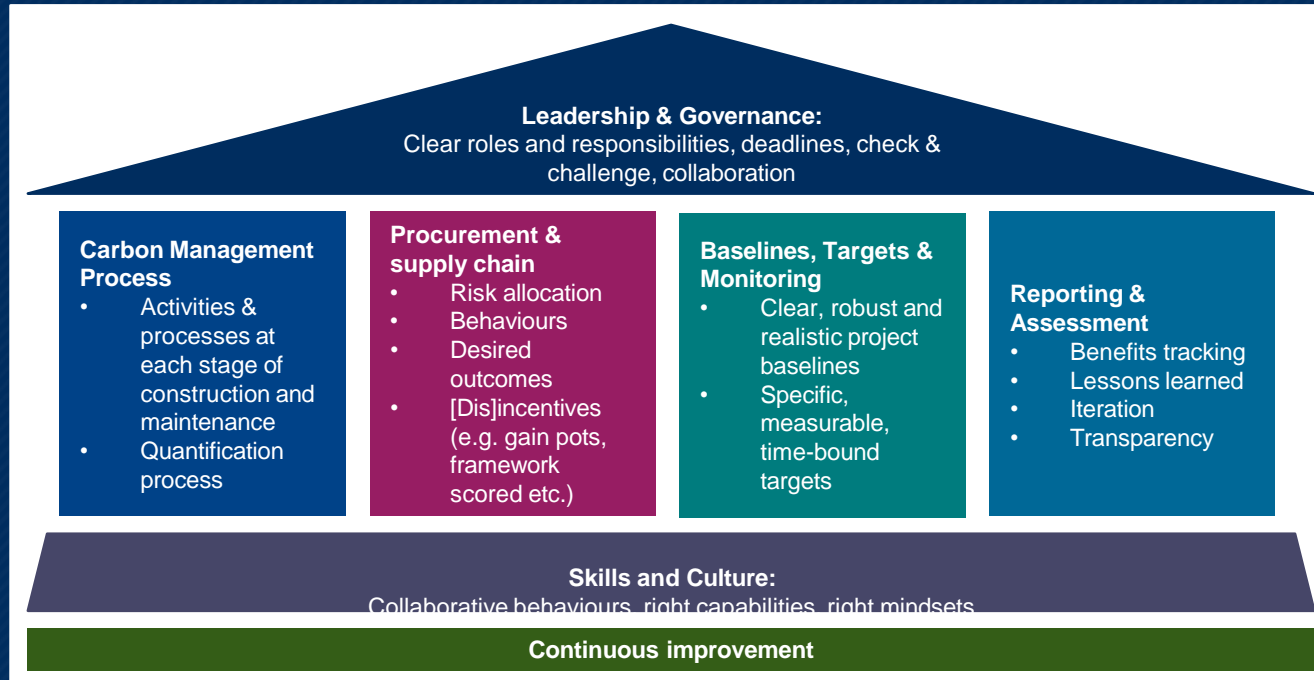
Embrace new ideas and share successes and failures with their value chain

Assessment of carbon reductions

Consider and evaluate low-carbon options available

Overview of our Carbon Management System

- PAS2080 requires us to set **carbon reduction targets for our projects** and monitor how well we are achieving them
- These targets have been **signed off and approved** by the National Highways Executive and are being applied to our projects and programmes



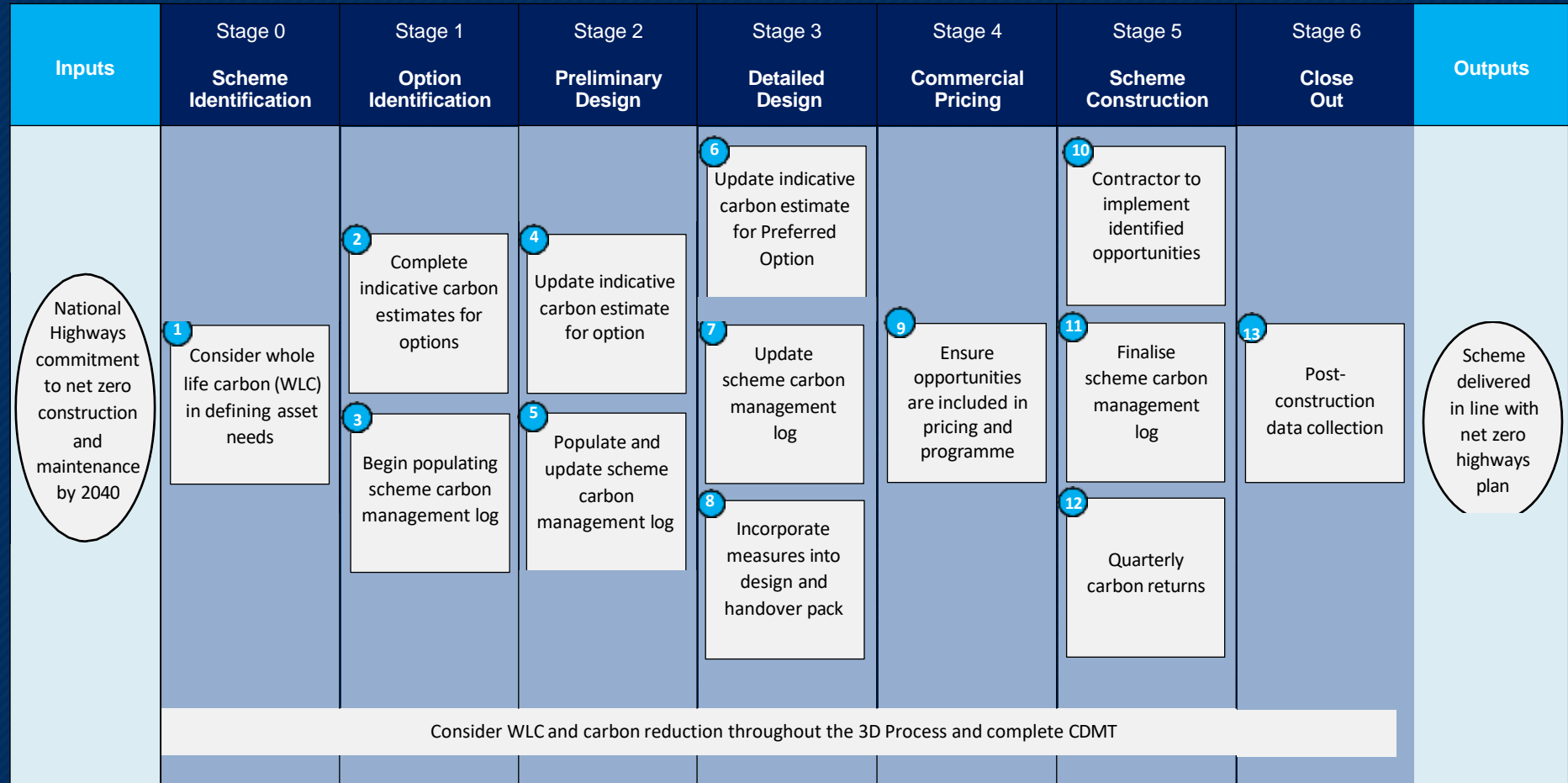
What we need from you

- Get involved in the National Highways Supplier Engagement Forum, to keep up to date with progress on the Net Zero Plan
- Complete the Carbon Literacy e-Learning via the [Sustainability Supply Chain School](#)
- Visit our new external [Carbon Hub](#) (access will be provided upon request), which will include:
 - Our Carbon Management System
 - The Low Carbon Opportunity Register and supporting resources;
 - Link to the Carbon Emissions Calculations Tool - 2020 Baseline
 - Learning Resources and Q&A's



The 3D Process – Carbon Management

- At each stage of the 3D process different carbon activities will be focusing around the use of the 3D Carbon Dashboard
- These activities will take limited time and be simple to undertake



Any questions?



Carbon@nationalhighways.co.uk





PAS 2080 Journey

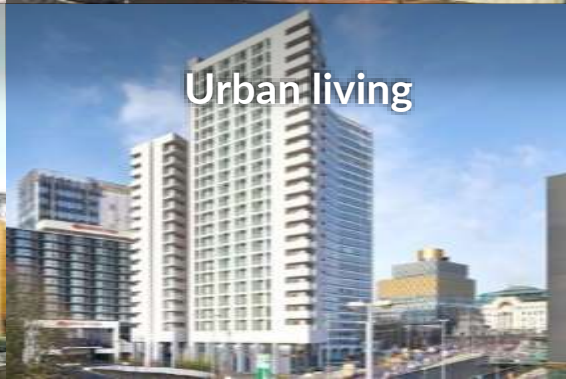
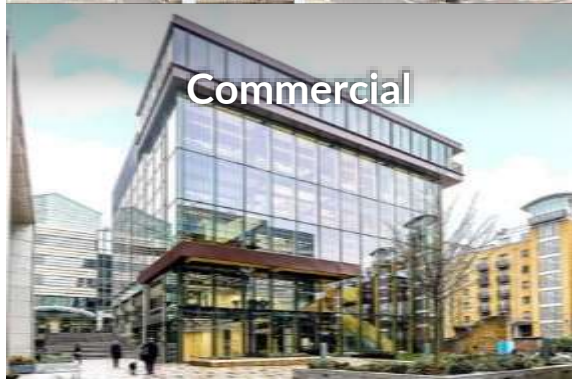
SCSS 18th April 2023








Poppy Parsons

Head of Low Carbon
Construction

Our sectors

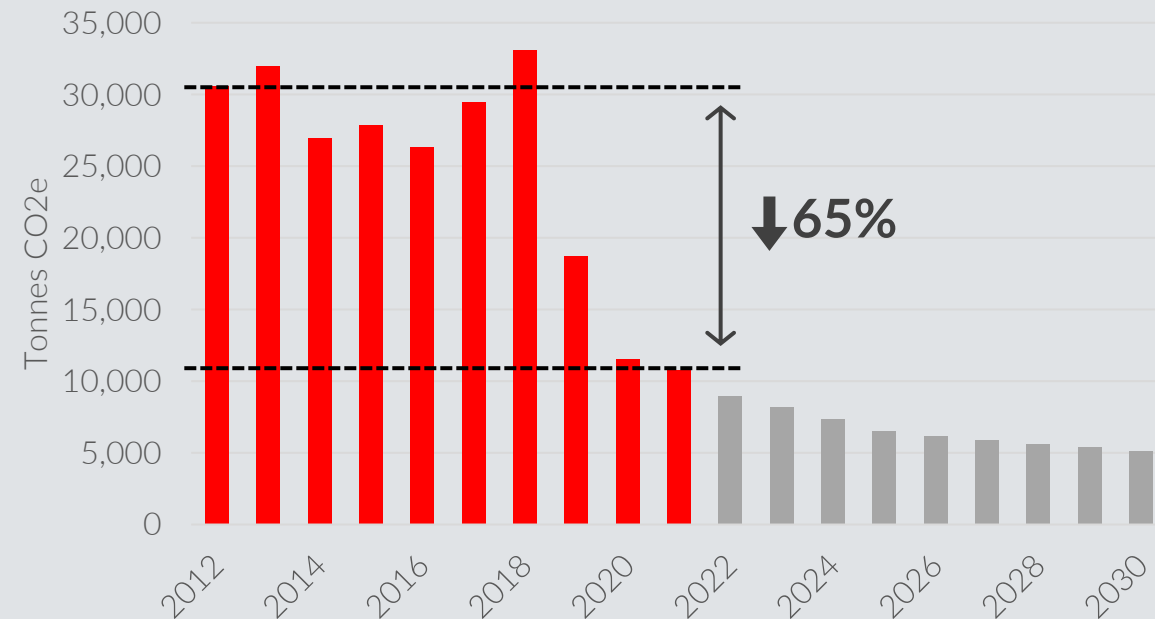


GT Journey to Net Zero

-  43% electric/PH vehicles.
-  Renewable energy for offices.
-  Electric/alternatively fuelled plant.
-  Earlier grid connections.
-  Agile working.

'Climate Leader' in the Financial Times Statista list.

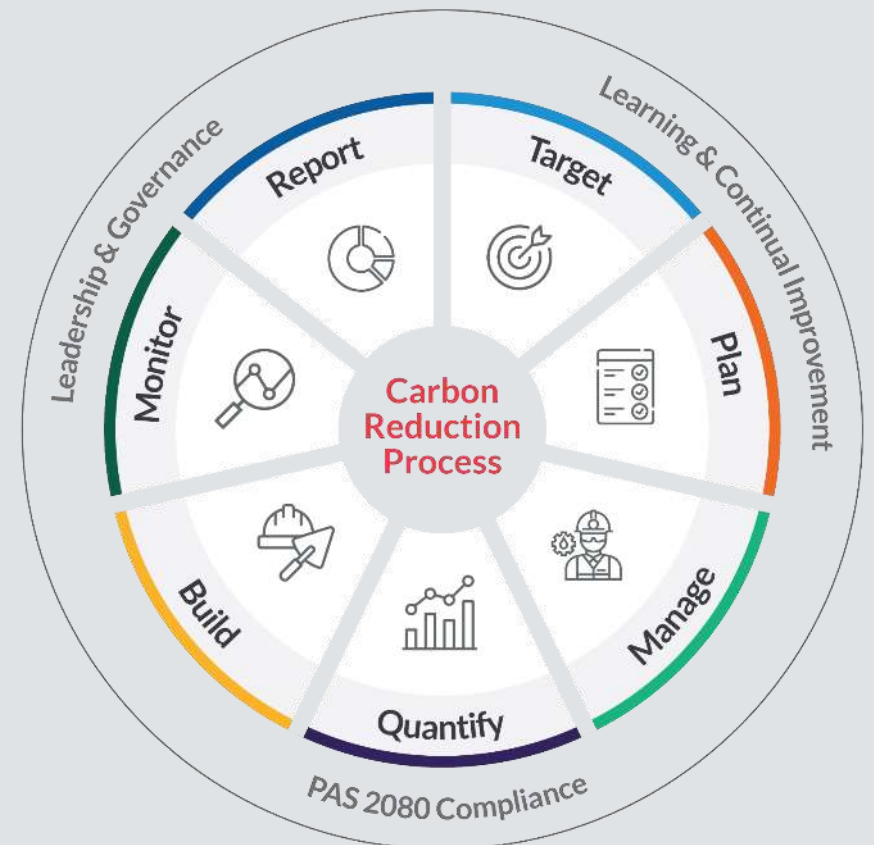
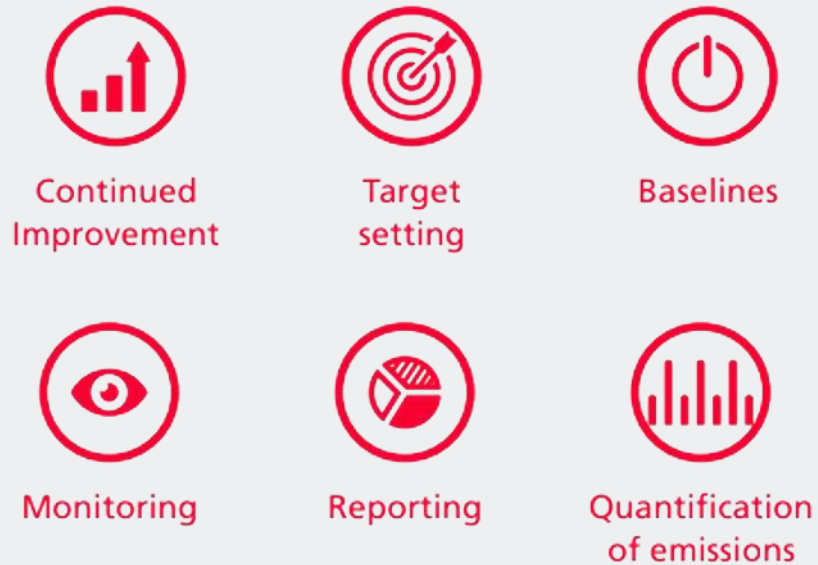
Scope 1 and 2 carbon emissions
Actual and projected reduction trajectory



Managing carbon

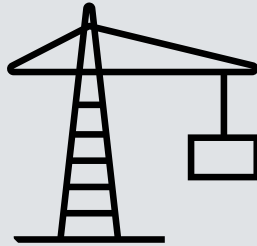
PAS 2080 Carbon Management in Infrastructure

(Buildings to be added by Q1 2023)



PAS 2080 Carbon management process

Galliford Try Carbon Targets



2030

**Net Zero carbon
across our own
operations**

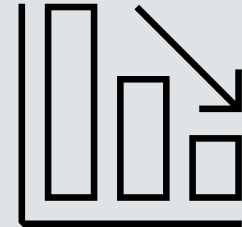
(scope 1 & 2 + business travel)



2030

**Achieve a verifiable
Science-Based Target**

(scope 1, 2 & 3)



2045

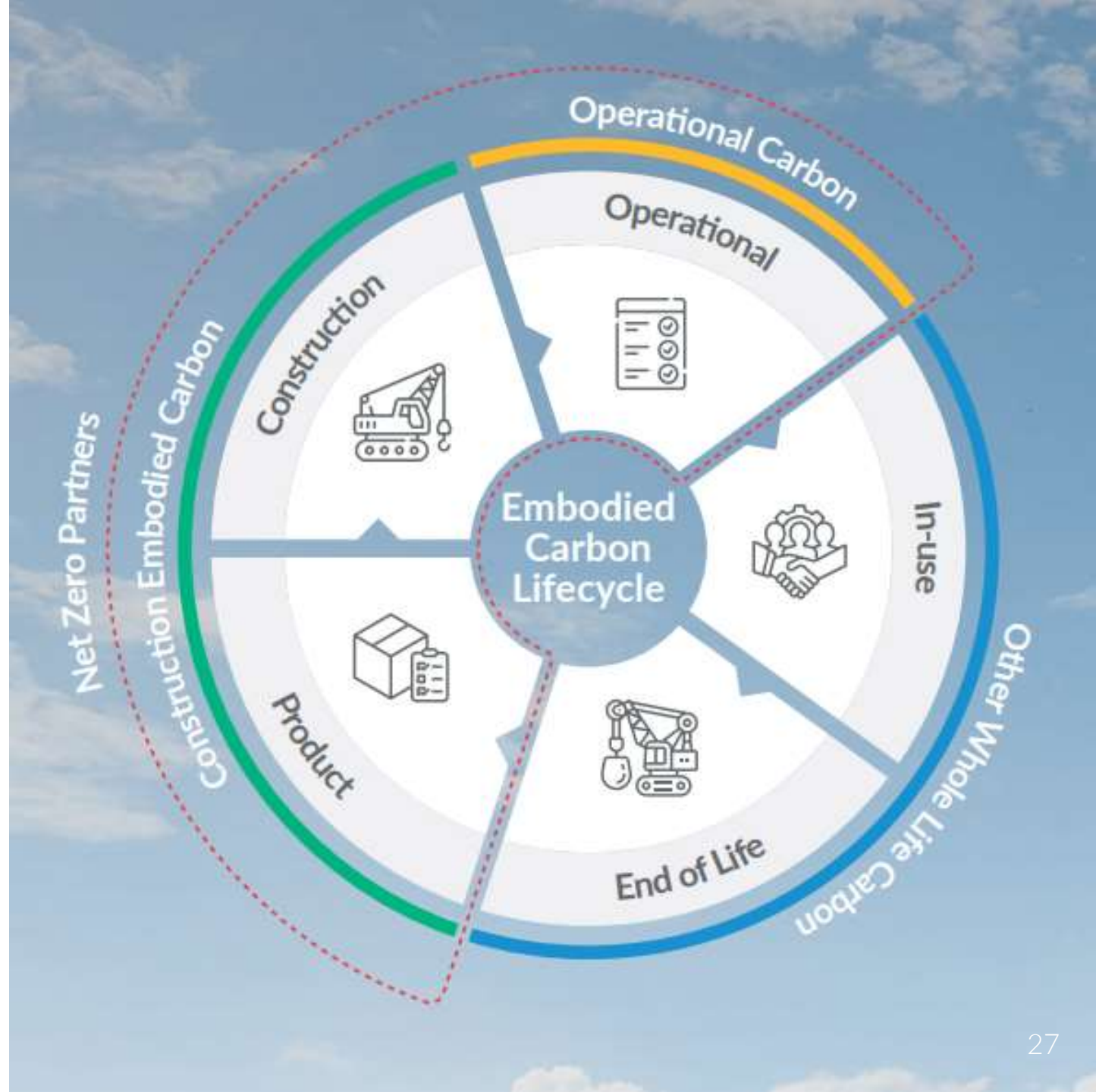
**Net Zero across all
activities**

(scope 1, 2 & 3)

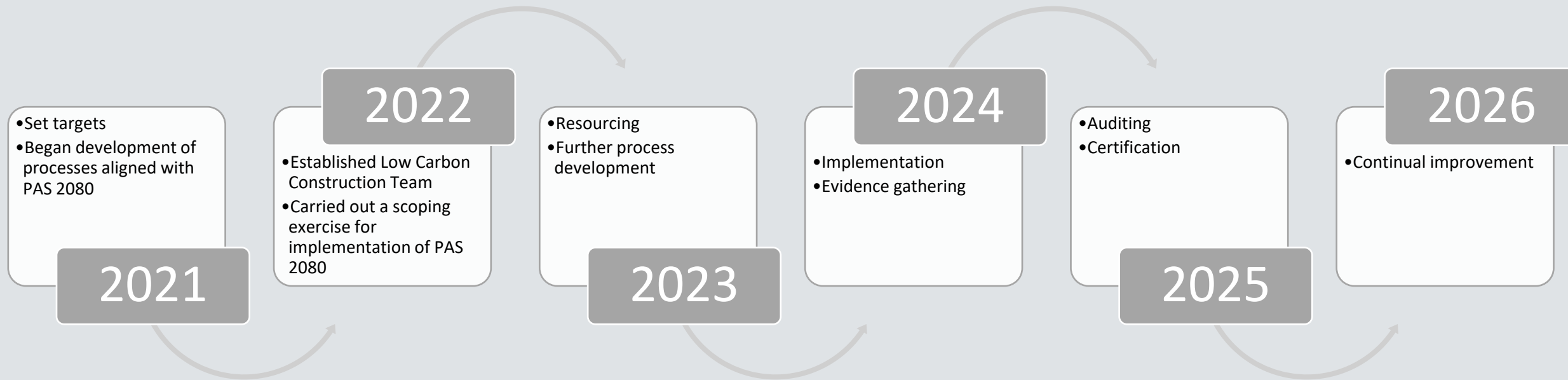
Net Zero Partners

Aligned supply chain

- Collective effort to move our clients to net zero.
- Net Zero Partners supports the upskilling of our Aligned supply chain.
- Also allows us to learn from them.



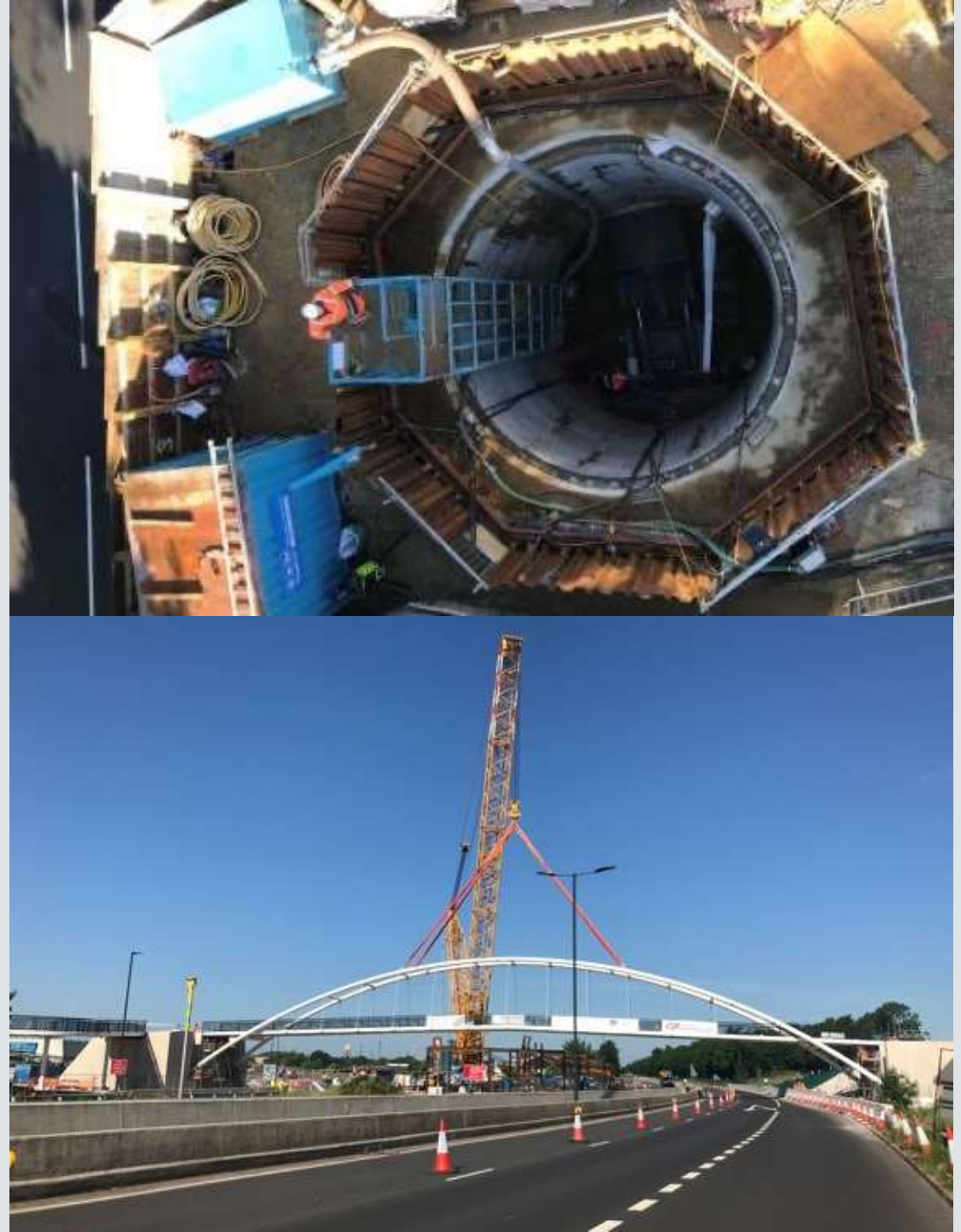
Our PAS 2080 Journey



Challenges

- Knowledge
- Fear
- No single definition of good looks
- Expectation of a single solution
- Number of different reporting requirements and tools

SOLUTION = Collaboration







Achieving PAS:2080 – Carbon Management in Infrastructure



Introductions



Kiro Tamer

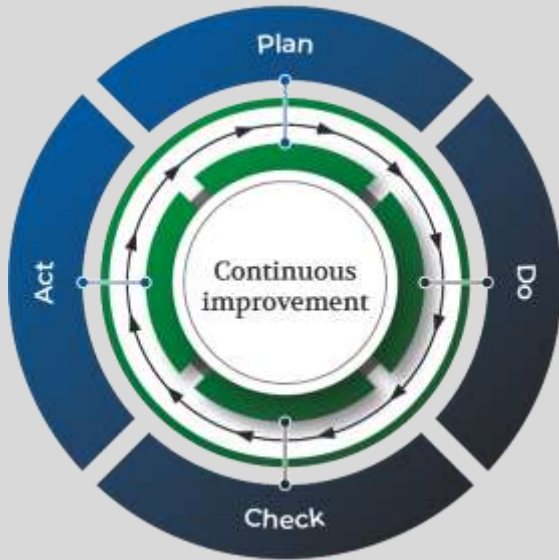
Head of Environmental Sustainability

ISO 14001 processes

- ISO 14001 Environmental Management System
- Policy and strategy for carbon management
- Implement a carbon management process
- Continuous improvement



Shared processes



- Integrate carbon management process with existing business practices (procurement, environmental management)
- Promote early engagement
- Objectives and targets
- Apply the carbon emission reduction hierarchy

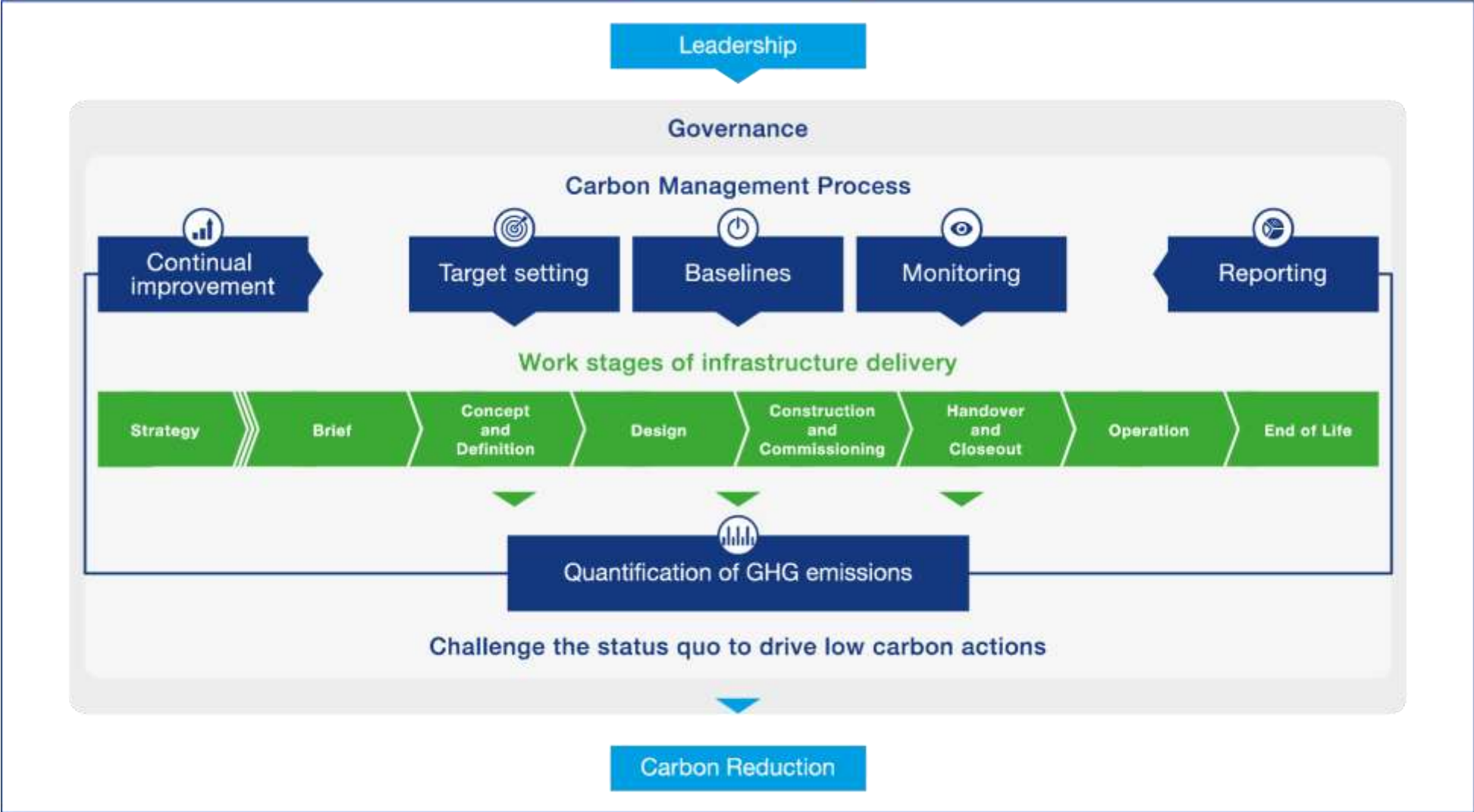


Carbon Management processes

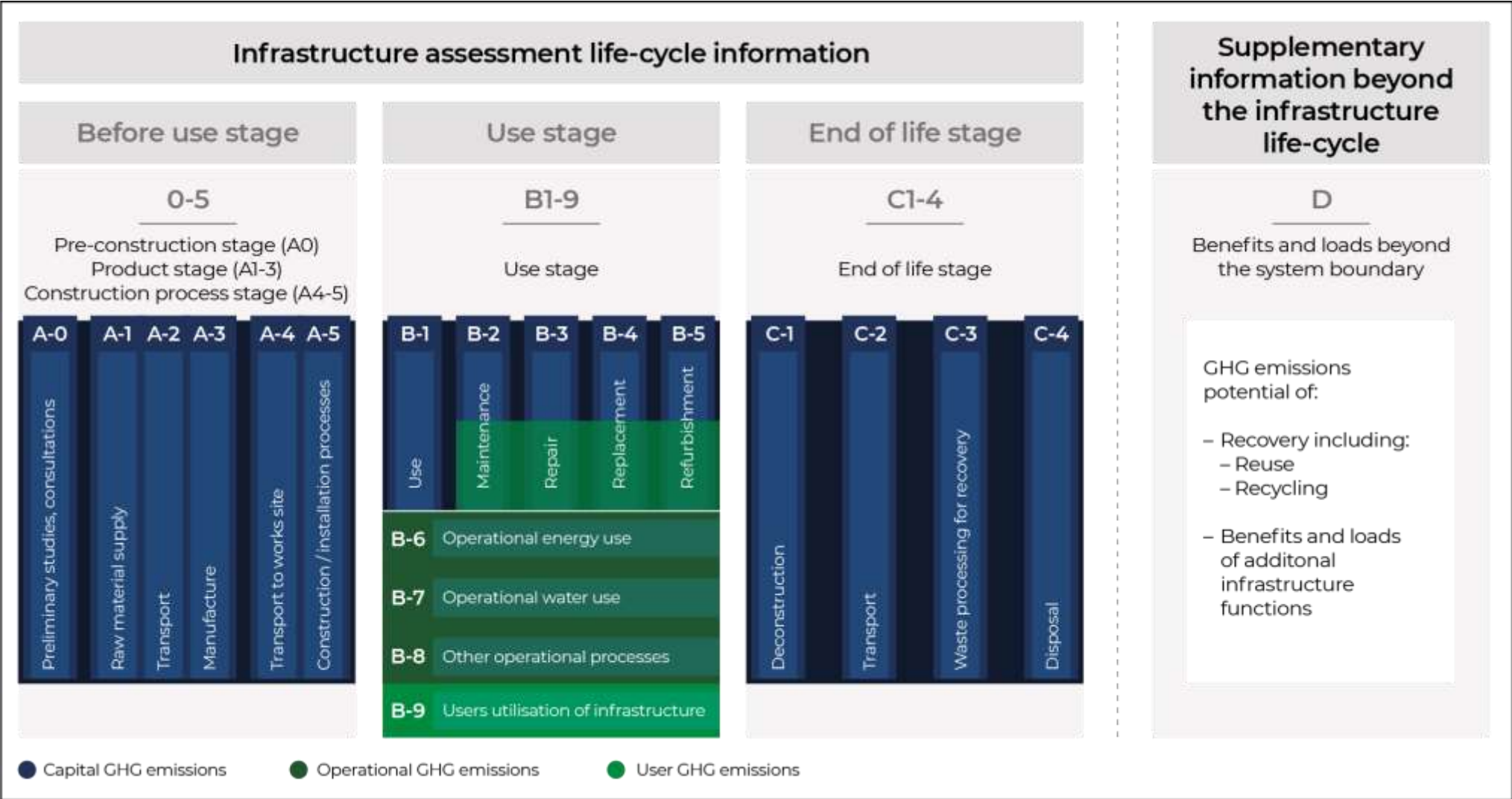
- PAS:2080 Carbon Management in Infrastructure
- Implement governance structure (programme of work roles and responsibility, low carbon solutions)
- Challenge product/material suppliers for low carbon solutions
- Systems in place to quantify GHG emissions



Carbon Management process



Life-cycle stages for GHG emissions

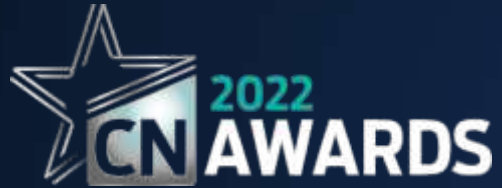


Key achievements

- Carbon Reduction Plan
- Central Carbon Group
- Integrated processes
- Science Based Target, Scope 1, 2 & 3
- Adoption of new materials
- New processes to better quantify the impact of the life-cycle stages
- Adoption of new technology
- Employee engagement
- Reduced emissions
- Better position in the industry



Our recent awards



Best Innovation Award

HIPER® Pile



Net Zero Trailblazer of the Year Award

HIPER® Pile



Productivity Initiative of the Year Award

HIPER® Pile – Enhancing Productivity through utilising DfMA



Best Equipment Award

HIPER® Piles – DfMA in large diameter piling



Reduction of Fuel Generators Use on Site

AND

Drone for Utilities Inspections



Sustainability Award

Design and installation of HIPER® Piles for structural and geothermal capacity



Thank you



Some of our sustainable initiatives



Hydrogen fuel



HIPER® Pile



Energy-efficient solutions



Low Carbon materials

PAS 2080:2023

Carbon management in buildings
and infrastructure



Construction
Leadership
Council

The Green Construction Board

The logo for BSI (British Standards Institution), featuring the letters 'bsi.' in a bold, black, sans-serif font.
A decorative graphic on the left side of the slide, featuring a green area with a curved line and a light blue area below it.

PAS2080 Carbon Management in Buildings and Infrastructure

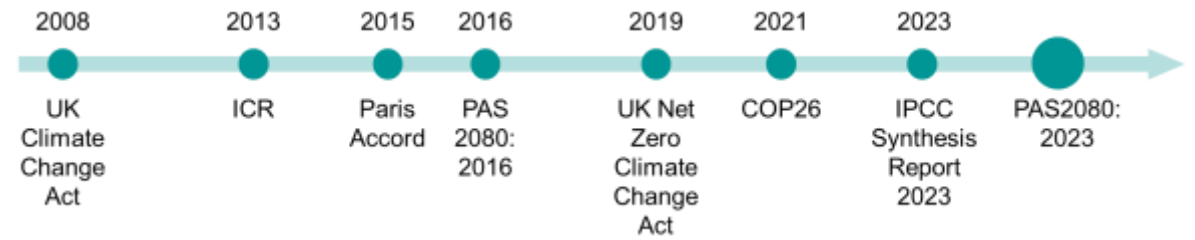
David Riley

Head of Carbon Neutrality

Anglian Water

driley3@anglianwater.co.uk

Context



Whole Life Carbon Management

PAS2080:2023 is about

- Managing to reduce whole life carbon
- Consistency in framing in the control and influence
- **INTEGRATING CARBON IN DECISION-MAKING**

1.

Buildings and infrastructure

2.

Systems thinking and net zero

3.

Taking a whole life view

4.

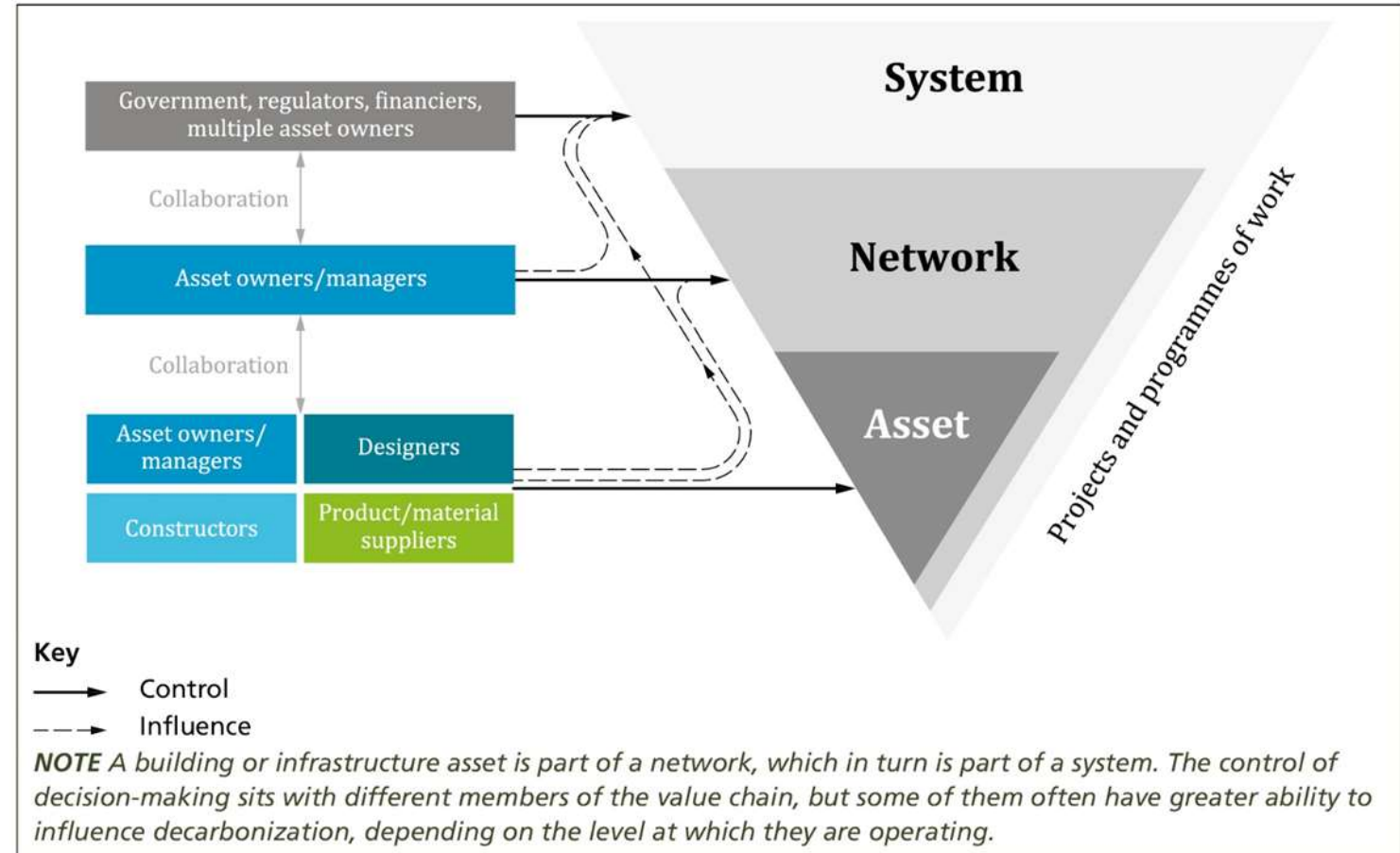
Nature Based Solutions and Resilience

5.

Collaboration

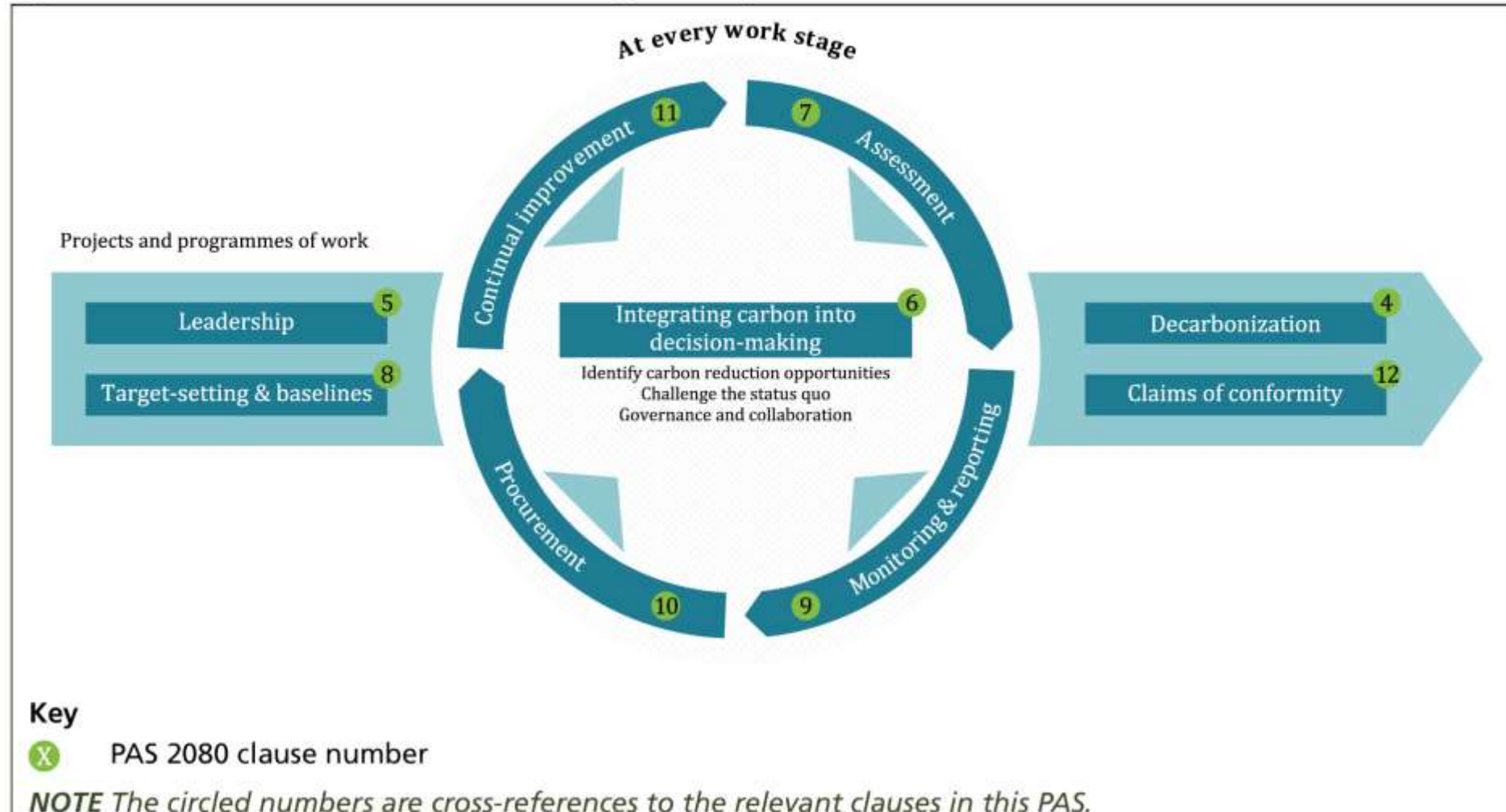
From assets to networks and systems

Figure 1 – Relationships between value chain members across assets, networks and systems



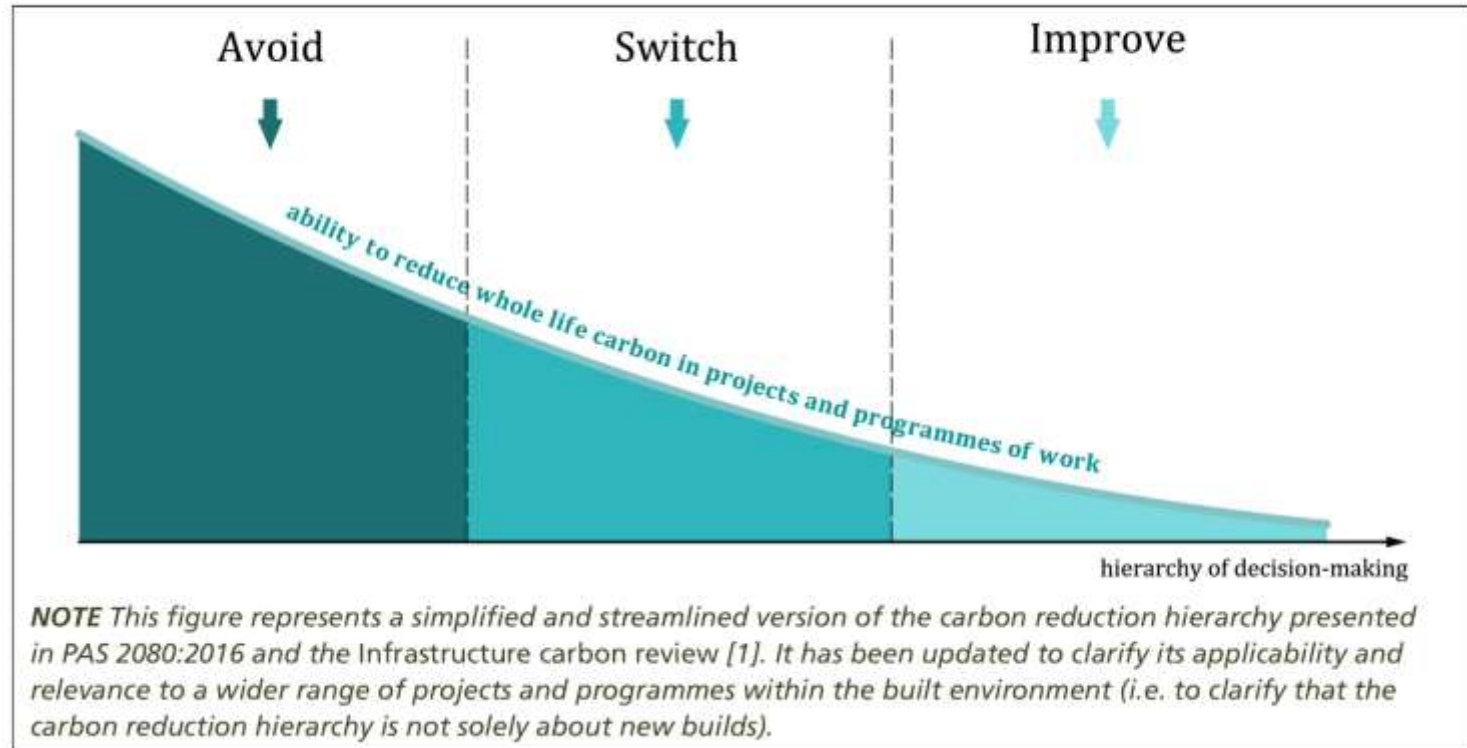
The Carbon Management Process

Figure 6 – The PAS 2080 carbon management process



Decarbonisation Principles

Figure 5 – Carbon reduction hierarchy



Focus on the updated procurement clause

Clause 10: Procurement

Incentivising and challenging each other to maximise decarbonisation benefits

- Promoting collaborative behaviours and healthy challenge
- Tender selection process to consider carbon management and capability
- Clearly communicating set targets
- Including meaningful baselines
- Incentivising absolute carbon reductions
- Common data and scope to ensure consistency



Leadership is key for implementing ambitious decarbonization across the built environment.

And we need to act **faster**...



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