

# Overview of PAS2080

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# Agenda

- What problem does PAS2080 address?
- What are the parts of PAS2080?
- How can PAS2080 add value to your organisation?

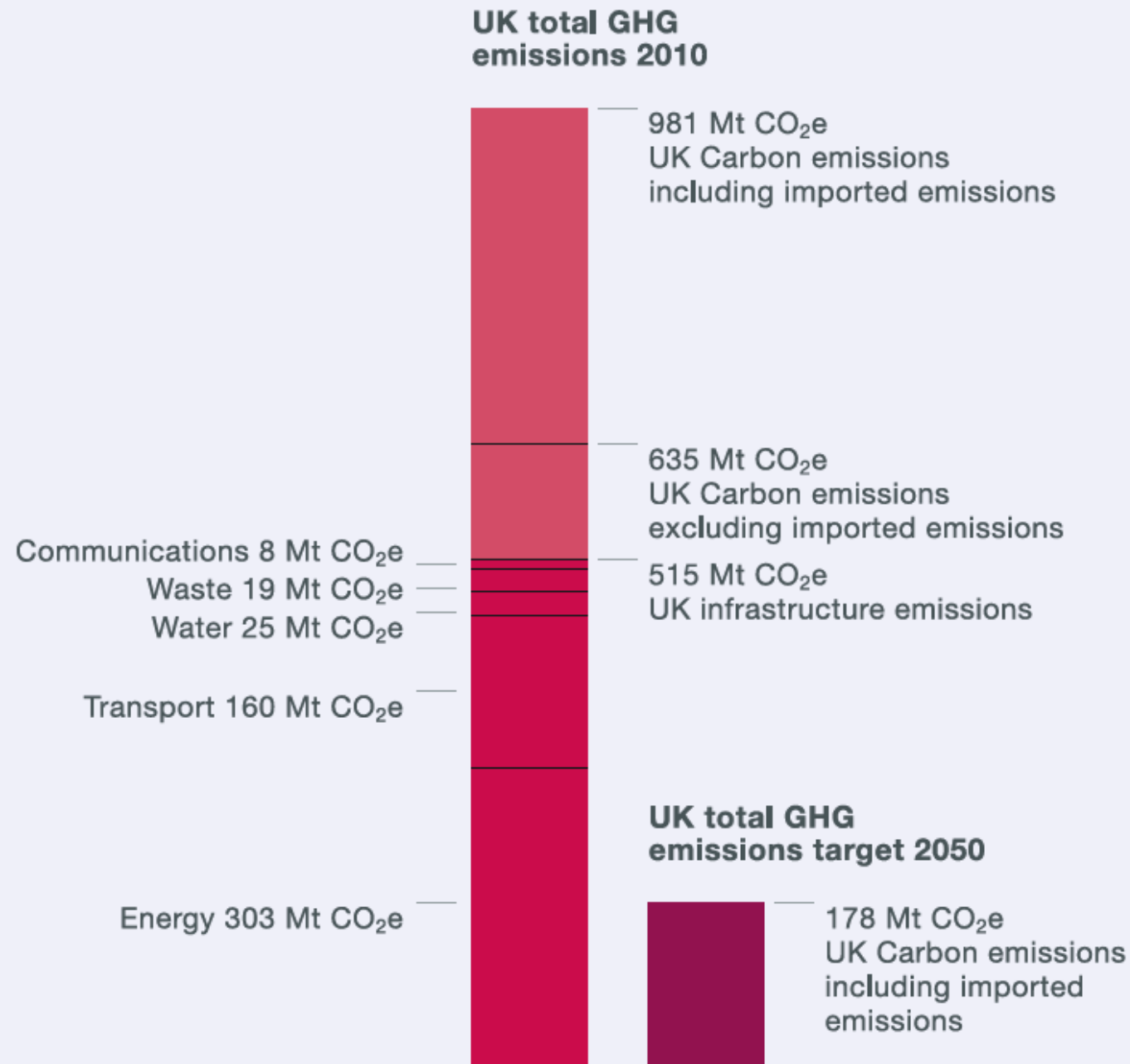


# What problem does PAS2080 address?



# UK Context

- Infrastructure is responsible for 53% of the UK's GHG emissions
- Of which 30% is directly related to the construction, operation and maintenance of assets, and
- 70% is attributed to users use of infrastructure
- This is set against a target of reducing emissions by 80% by 2050

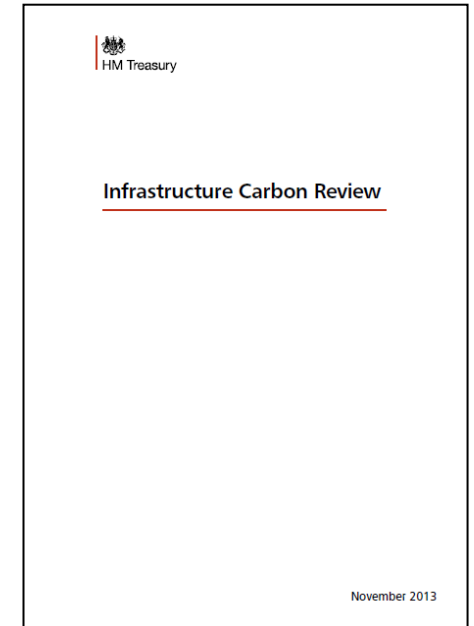


All figures sourced from infrastructure Carbon Review given in Mt CO<sub>2</sub>e/yr

# The Infrastructure Carbon Review

The Treasury's Infrastructure Carbon Review (2013) set out the case that cutting carbon, cuts cost. It unlocks innovation. It increases efficiency. And it contributes to climate change mitigation.

The ICR is the sister document of the Infrastructure Cost Review, and highlights the key role of cutting carbon in unlocking further cost reductions

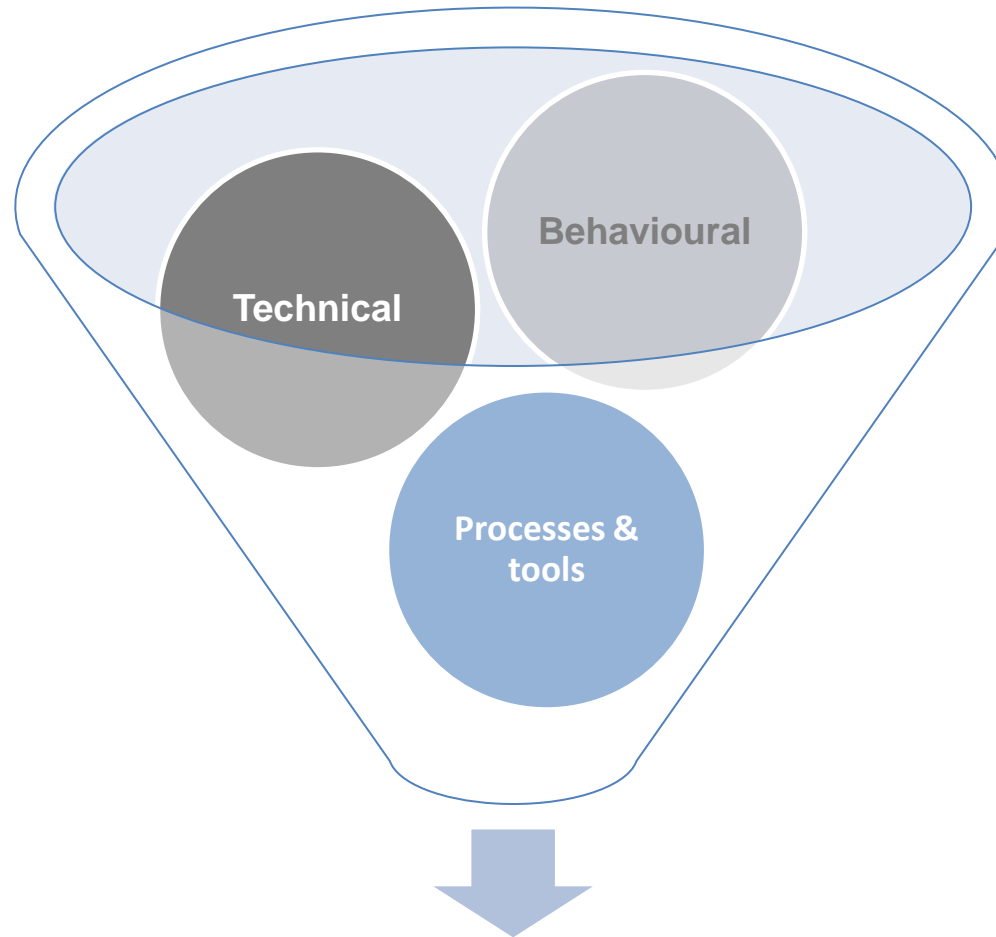


# Recognising the ingredients of carbon reduction

**Low carbon solutions in projects and programmes of work**

*Technologies, materials, design practices, programme rationalisation*

*Revising technical specifications*



**Carbon reduction**

**Culture and competence**

*Leadership*

*Challenge*

*Ownership*

*Training*

**Embedding processes & tools in business as usual**

*Embedding in investment process*

*Assigning gate deliverables*

*Identifying responsible people*

# PAS2080

To deliver the benefits the whole value chain should be aligned and consistent in their approach. PAS2080 provides the framework for a carbon management process.

Guidance Document

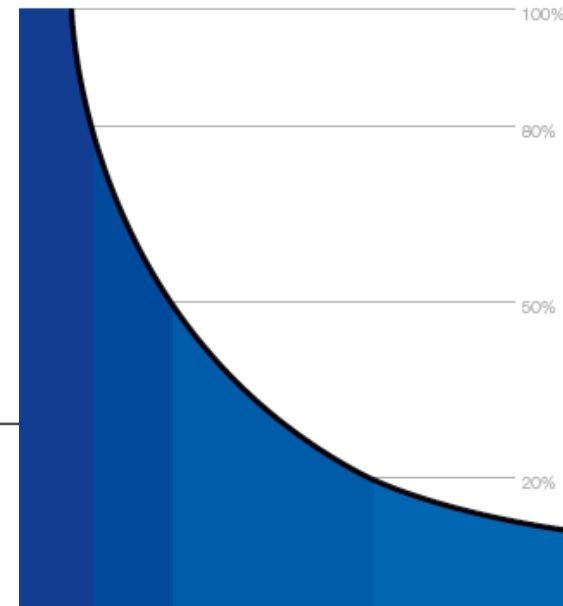
PAS 2080:2016

## Carbon Management in Infrastructure

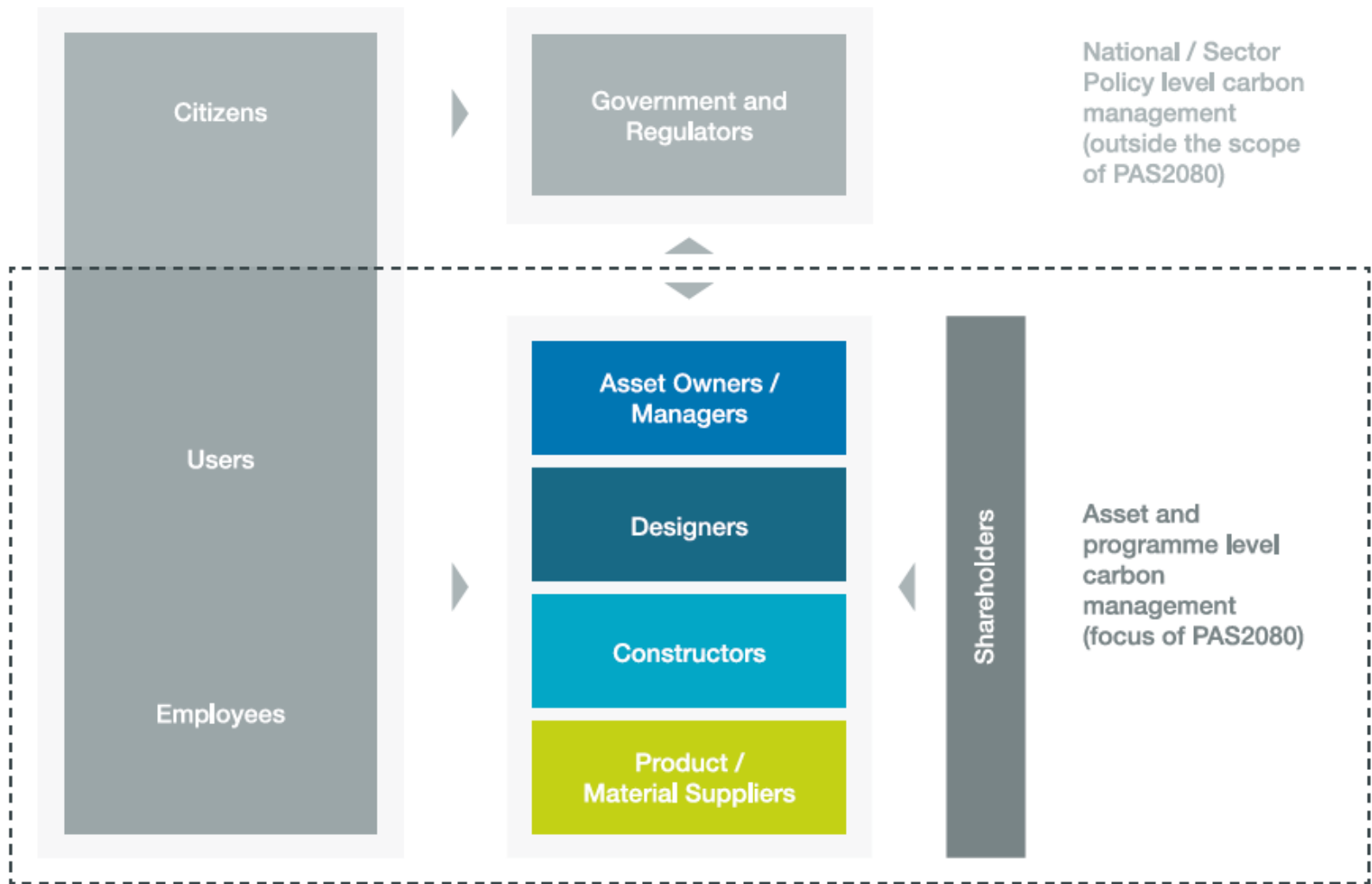


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Leadership  
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bsi.



## Value chain

The PAS is focused on four key parts of the value chain

Each of these members has shared and own responsibilities in PAS2080

The biggest benefits come from working together



# What are the parts of PAS2080?



'Build nothing'

'Build less'

'Build clever'

'Build efficiently'

### Carbon reduction

The PAS is structured around Work Stages of Infrastructure Delivery

At the earliest stages exists the greatest chance to reduce carbon and cost

The approach taken to managing carbon, and the people involved may be different as delivery progresses



Ability to influence whole life cycle carbon

100%

80%

50%

20%

Strategy

Brief

Concept

Definition

Design

Construction and Commissioning

Handover and Closeout

Operation

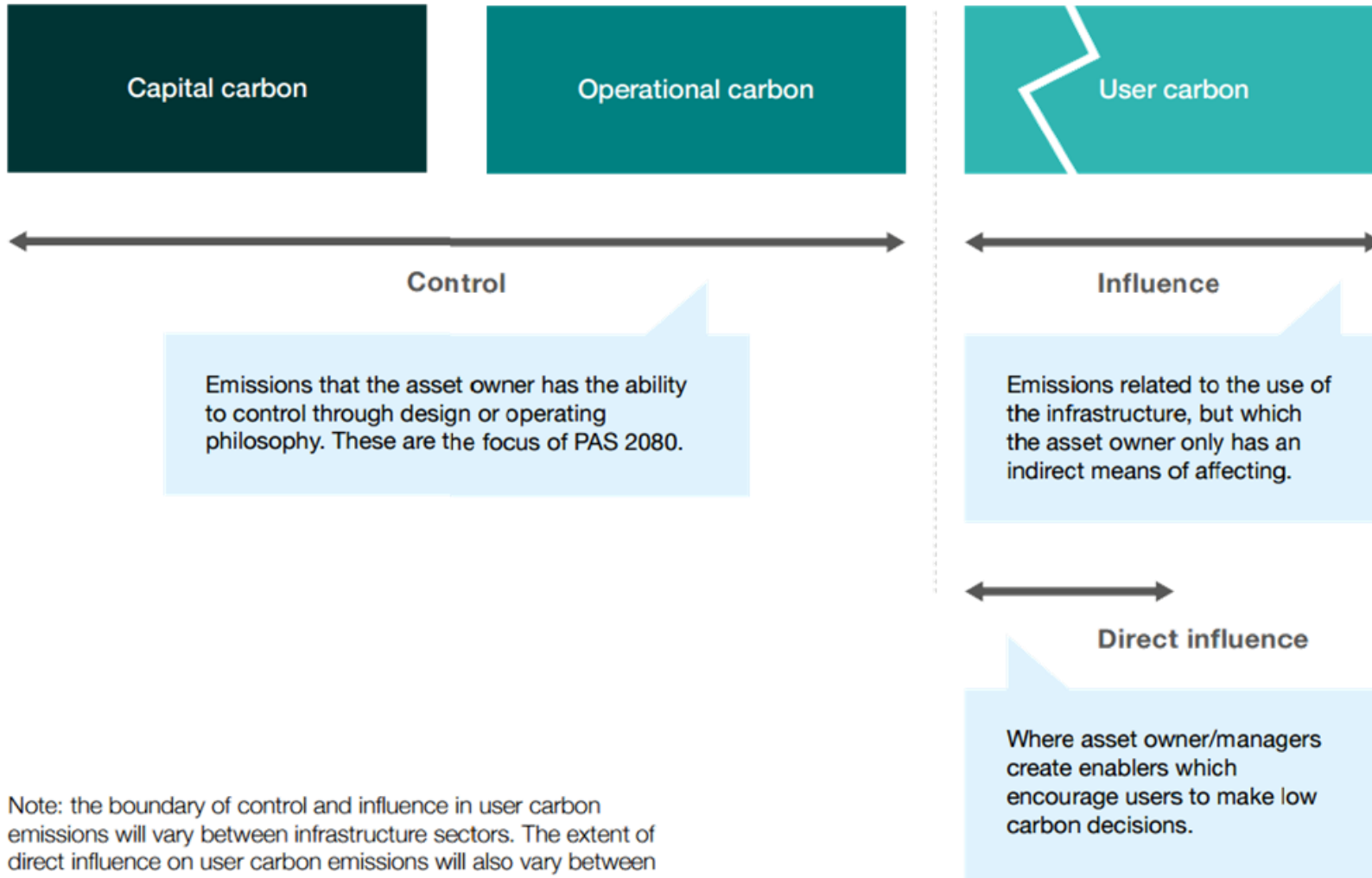
End of life

Work Stages of Infrastructure Delivery

Procurement

Maintenance

Use of the asset



Note: the boundary of control and influence in user carbon emissions will vary between infrastructure sectors. The extent of direct influence on user carbon emissions will also vary between infrastructure sectors.

## Types of GHG

PAS2080 includes all emissions under the control of an organization. This includes the capital carbon and operational carbon.

For certain infrastructure there may be further emissions e.g. modal shift which can be influenced at certain times.

# The process

To get carbon reduction a process is needed

The dark blue boxes represent clauses in PAS2080. These set requirements which give the greatest chance for carbon reductions.

This is supported by robust governance and leadership which allows the space to challenge

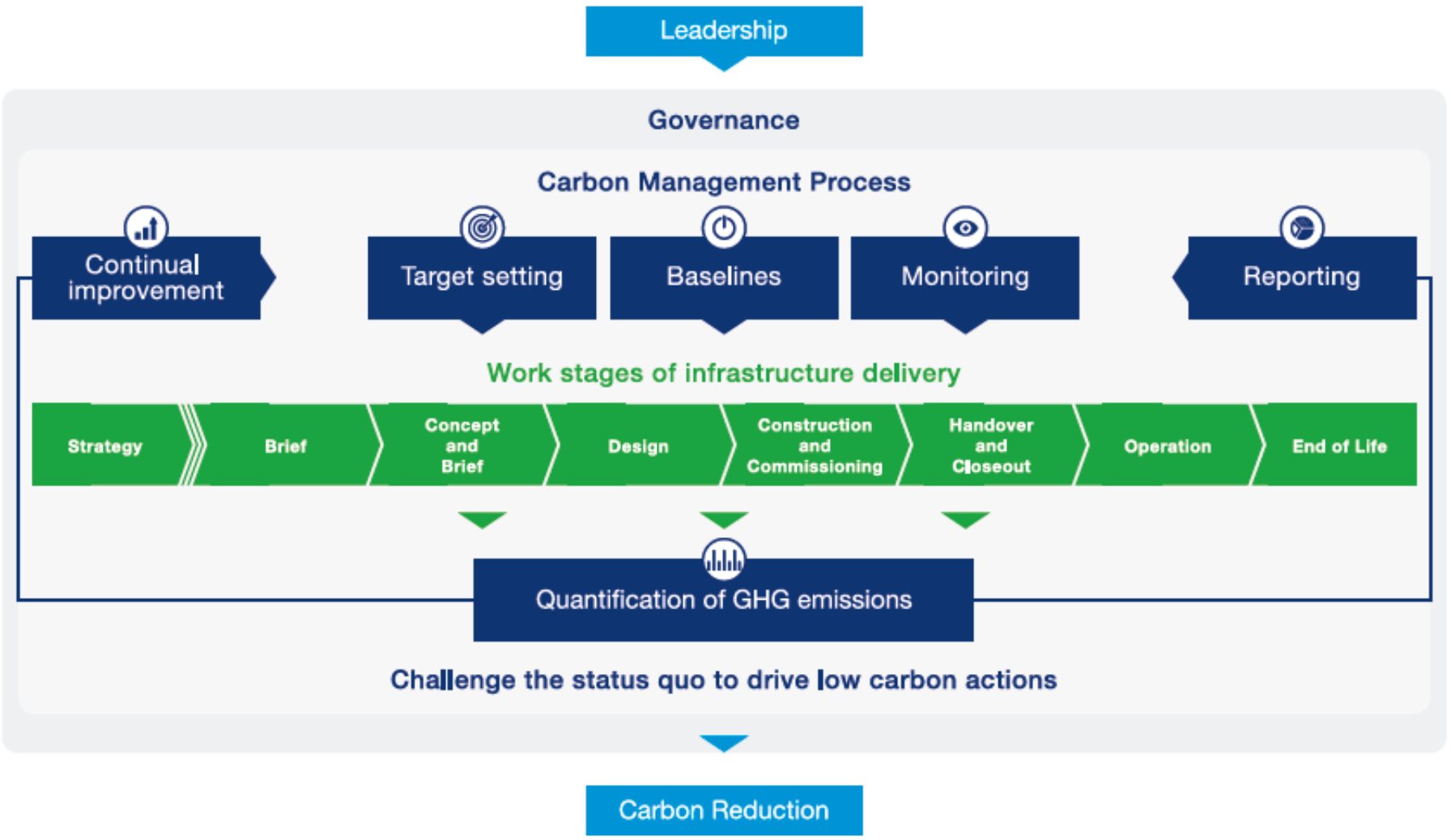


Figure from PAS2080

## Asset Owner/Manager

Practitioner	Responsibilities
Leadership Team	Setting the overall carbon management direction including targets and governance systems.
	Ensuring staff have adequate carbon management skills through training or recruitment.
Strategy Planner	Ensure strategic plans for new and existing assets incorporate clear carbon objectives and targets.
Procurement Manager	Procure products/materials/services using the criteria agreed to achieve the organization's carbon objectives.
	Involvement from the strategy stage through to operation/end of life depends on the procurement strategy of the organization, e.g. whether procurement of construction materials is responsibility of constructors.
Infrastructure delivery manager	Engage across the value chain to ensure that technologies and solutions proposed and implemented are in line with carbon targets.
Operator/Operations Manager	Ensure assets are operated to achieve carbon targets.
	Ensure asset maintenance and replacement strategies incorporate carbon objectives.
	Managing carbon throughout the life of an asset.

## Practitioners

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Within an organization, there are many roles that must contribute to deliver carbon reductions.

The main message is about giving the people the freedom to work together, challenge and innovate.

This is key to making carbon reduction part of normal delivery.

# What does this mean for you?

- What can you offer your clients?
- How can you reduce carbon and cost in your projects and programs of work?

Carbon Management Process activities during Concept and Definition work stages	Asset Owner/ Manager	Designer	Constructor	Product/ Material Supplier
High level quantification of all options (and use of tools, where appropriate) against baselines	RA	R	C	C
Challenge the need for a new asset. Set and refine objectives for subsequent work stages	R	RA	R	R
Report on project activities, materials/components and carbon categories where the greatest emissions occur and where reductions can be made	I	RA	C	C
Engagement with value chain for carbon reduction of design options, focus on preferred solution and its identified hotspots (follow the carbon reduction hierarchy)	R	RA	C	C
Report and monitor progress against targets	R	RA	I	I

**Table B 1 – Carbon management process responsibilities as they could be applied to an infrastructure asset and/or programme of work**

	Strategy	Brief	Concept	Definition	Design	Construction   Commissioning	Handover   Closeout	Operation   Use	End of life
<b>Leadership and Governance</b>	Set objectives for carbon management (In organization and/or asset or programme of work), aligned with business goals. Define roles and responsibilities. Establish robust governance framework for Infrastructure delivery	Communicate governance framework throughout value chain. Communicate objectives and carbon reduction targets, Internally and externally. Set incentives, where appropriate, to encourage desired behaviours. Assign staff to roles. Delegate Internally/externally to deliver carbon management process requirements, as appropriate.		Ensure sufficient (and trained) resources to deliver the carbon management process requirements. Apply governance framework to ensure challenge at each work stage and throughout value chain, to achieve or exceed carbon reduction targets and to promote sharing of current good practice. Recognise and reward Innovative behaviours.			Review carbon reduction performance, act on feedback and drive continuous improvement through better data collection, capturing current good practice in carbon reduction, etc.		
<b>Target setting   Baselines   Monitoring</b>	Set measurable targets to achieve objectives. Determine responsibility for carbon baselines.	Challenge carbon targets where there is potential for improvement Develop appropriate and realistic baselines				Capture construction data and feedback to help improve baselines	Capture operational data and feedback to improve baselines.		
<b>Carbon reduction hierarchy</b>	<b>Build nothing:</b> Challenge the need for an asset and explore alternative approaches to achieve outcomes that minimise whole life carbon.		<b>Build less:</b> Maximise use of existing assets. Optimise operational efficiency to reduce construction and whole life carbon		<b>Build clever:</b> Use low carbon materials/ products to minimise resource use and select technologies for efficient operation	<b>Build efficiently:</b> Embrace construction techniques that reduce resource consumption.	Operate, maintain (and decommission) efficiently.		
	Identify carbon hotspots in existing asset operation and opportunities for reduction.	Identify carbon hotspots in proposed solutions and opportunities/approaches for reduction. Assess opportunity to reduce capital, operational and user carbon.		Ensure impacts of design on the carbon emissions of construction, future operation and use are minimised.	Minimise material use, transport to site, construction waste and maximise opportunities for reuse/recycling/recovery.	Minimise operational use of energy, transport, chemicals and other consumables in new or existing assets.			
		Share/develop/deploy low carbon solutions technologies, materials, products or methods to be incorporated into solutions							
<b>Quantification</b>	Set and communicate functional unit(s) for measuring performance. Define and communicate quantification requirements. Identify appropriate data sources. Review suitability of existing tools.	Develop and apply appropriate tools to aid quantification (asset owner/manager could delegate this responsibility). Define goal, scope and assumptions. Establish scope & boundaries of GHG assessment. Select calculation methodology.		Collect and assess data. Calculate GHG emissions. Ensure options are assessed within consistent boundaries. Take account of forecast emissions in operation and use.	Undertake more detailed quantification of forecast GHG emissions, as required.	Assess actual GHG emissions from construction up to handover	Assess actual GHG emissions of operation (from actual activity data).		
		Share existing information on GHG emissions quantification of technologies, products and materials considered or used.			Quantify GHG emissions of materials/products supplied, as required				
<b>Reporting</b>	Define reporting requirements and communicate throughout value chain.		Capture data on Innovative approaches, technologies, materials and products to be used. Report forecast emissions and performance against targets, in accordance with general principles and reporting requirements.		Capture data on Innovative construction techniques, materials and products used. Report actual emissions and performance against targets, in accordance with general principles and reporting requirements.		Report actual emissions and performance against targets, in accordance with general principles.		
		Provide reporting on the performance of technologies, materials and products (to be) used.							
<b>Opportunity to reduce carbon</b>	Highest								Lowest

Key to table	Asset owner/manager	Designer	Constructor	Supplier	All parties
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A summary of the requirements is presented in Annex B of PAS2080.

# Thank you

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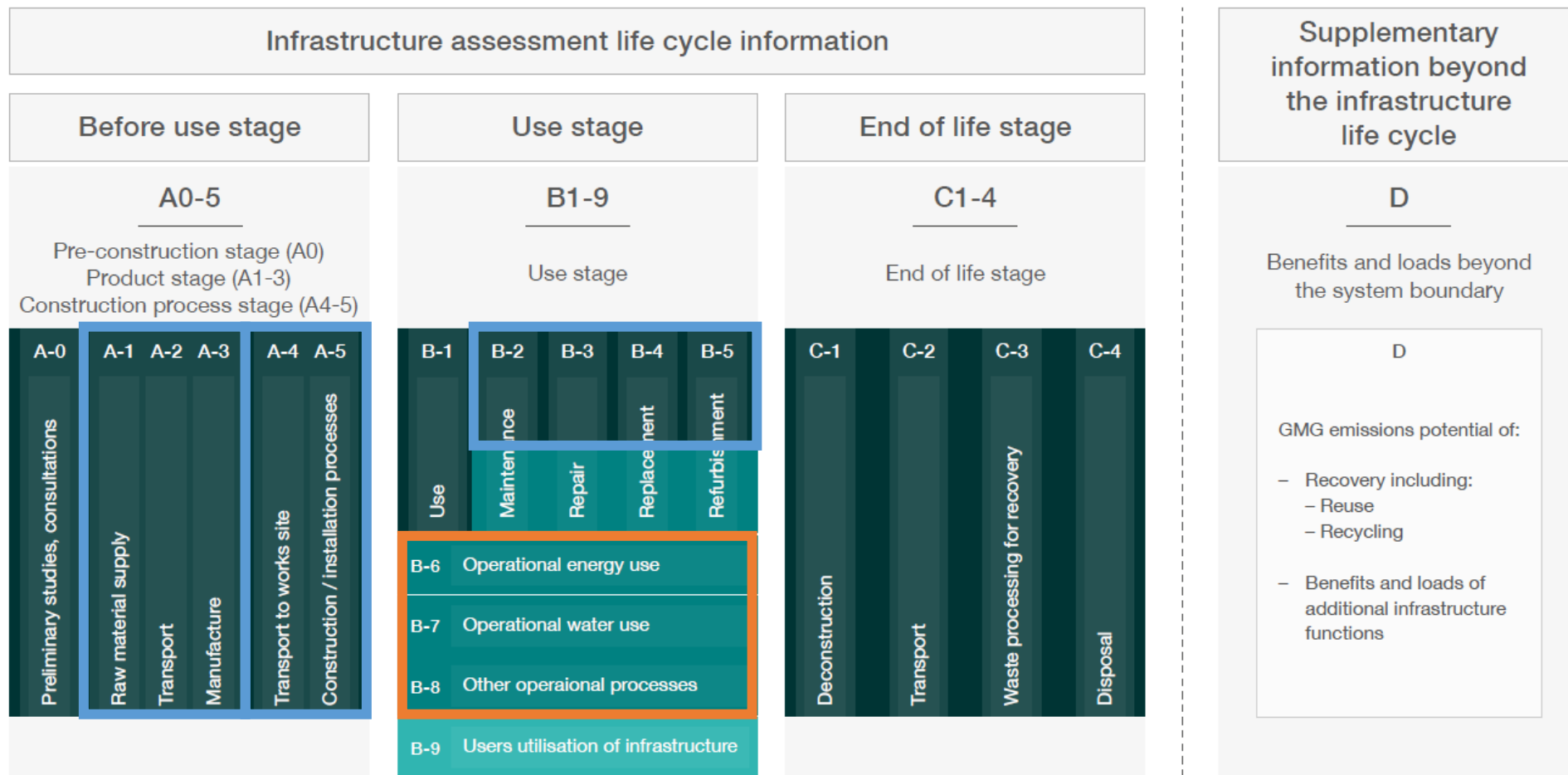
**VOLVO**



# Appendix



# Quantification



- Capital GHG emissions
- Operational GHG emissions
- User GHG emissions

# The key clauses in PAS2080

## Examples of requirements



Continued  
Improvement



Target  
setting



Baselines



Monitoring



Reporting



Quantification  
of emissions

### 8.2.2 Baselines

In addition to Clause **8.1** asset owners/managers shall set baselines which:

- a) Create a reference level against which future performance can be compared with respect to the desired outcome;
- b) Assist with finding carbon emissions hotspots, on which to focus efforts to reduce emissions;
- c) Transparently state any assumptions used to fill data gaps and the limitations this may have on the relevance of the baseline;
- d) Follow the principles of GHG emissions quantification (Clause **7**);

# The key clauses in PAS2080

## Examples of requirements



Continued  
Improvement



Target  
setting



Baselines



Monitoring



Reporting



Quantification  
of emissions

### 8.4.3 Monitoring

In addition to Clause 8.1 constructors shall:

- a) Monitor carbon emissions of construction and where appropriate commissioning activities, during the relevant infrastructure work stage for the purpose of affecting performance against the carbon realigning target;
- b) Where opportunity for improvement to the asset owner/manager's approach to monitoring is identified, recommend and where accepted, assist in its implementation in the delivery of assets and programmes of work;
- c) Where monitoring improvement proposals are made, they shall be documented in evidence of their submission to the asset owner/ manager, supported by identification of the anticipated benefits to the quantification and record of the outcome;
- d) Identify and report where the greatest carbon emissions have occurred and where future reductions can be made.