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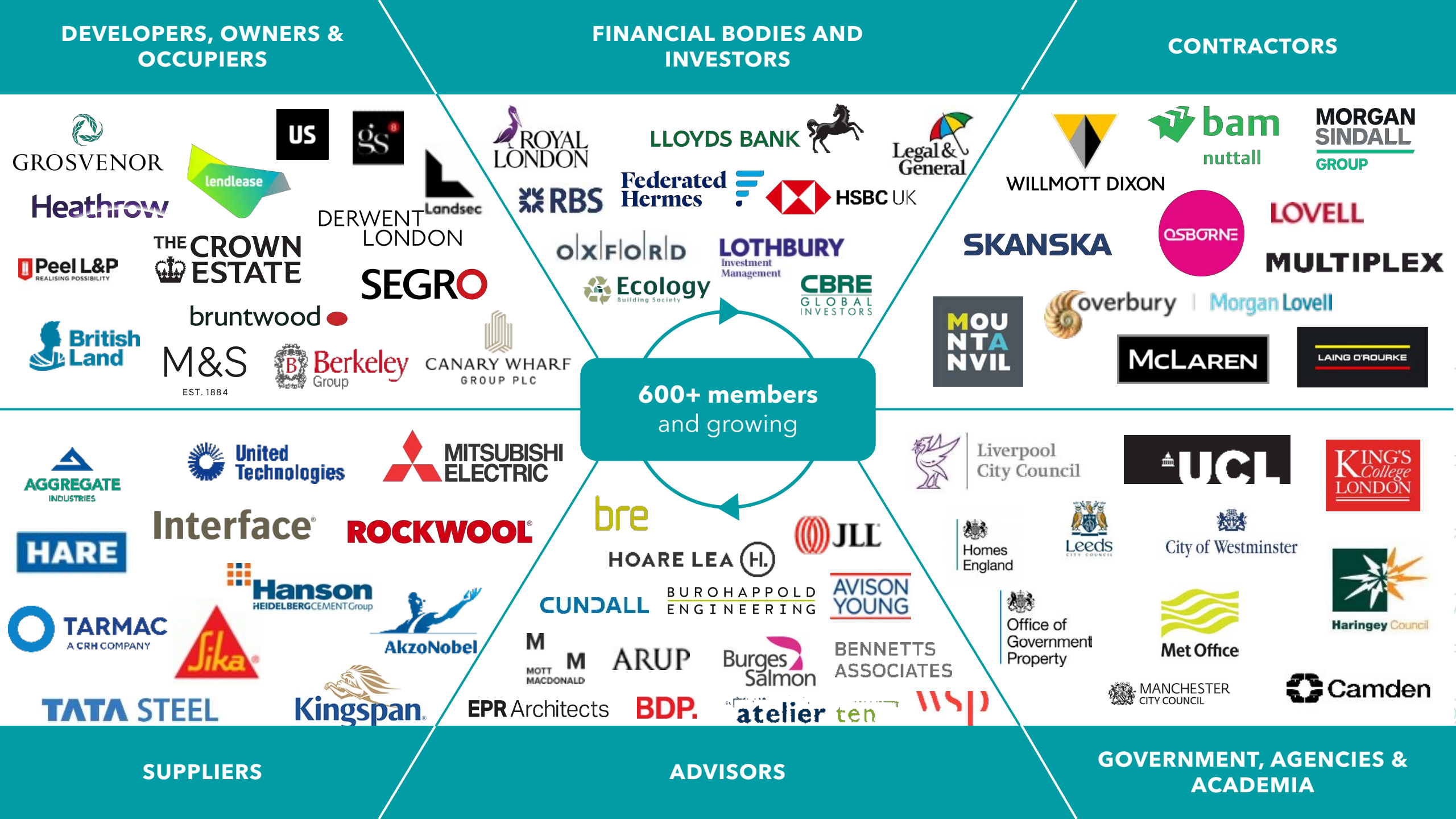
# Workplace Futures Sustainability: the challenges and the opportunities

**Yetunde Abdul**
Head of Climate Action, UKGBC

**UKGBC - Together for a better built environment**

**To radically improve the sustainability of the built environment, by transforming the way it is planned, designed, constructed, maintained and operated.**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Heathrow
DERWENT LONDON
Landsec
THE CROWN ESTATE
Peel L&P
REALISING POSSIBILITY
SEGRO
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600+ members
and growing
AGGREGATE INDUSTRIES
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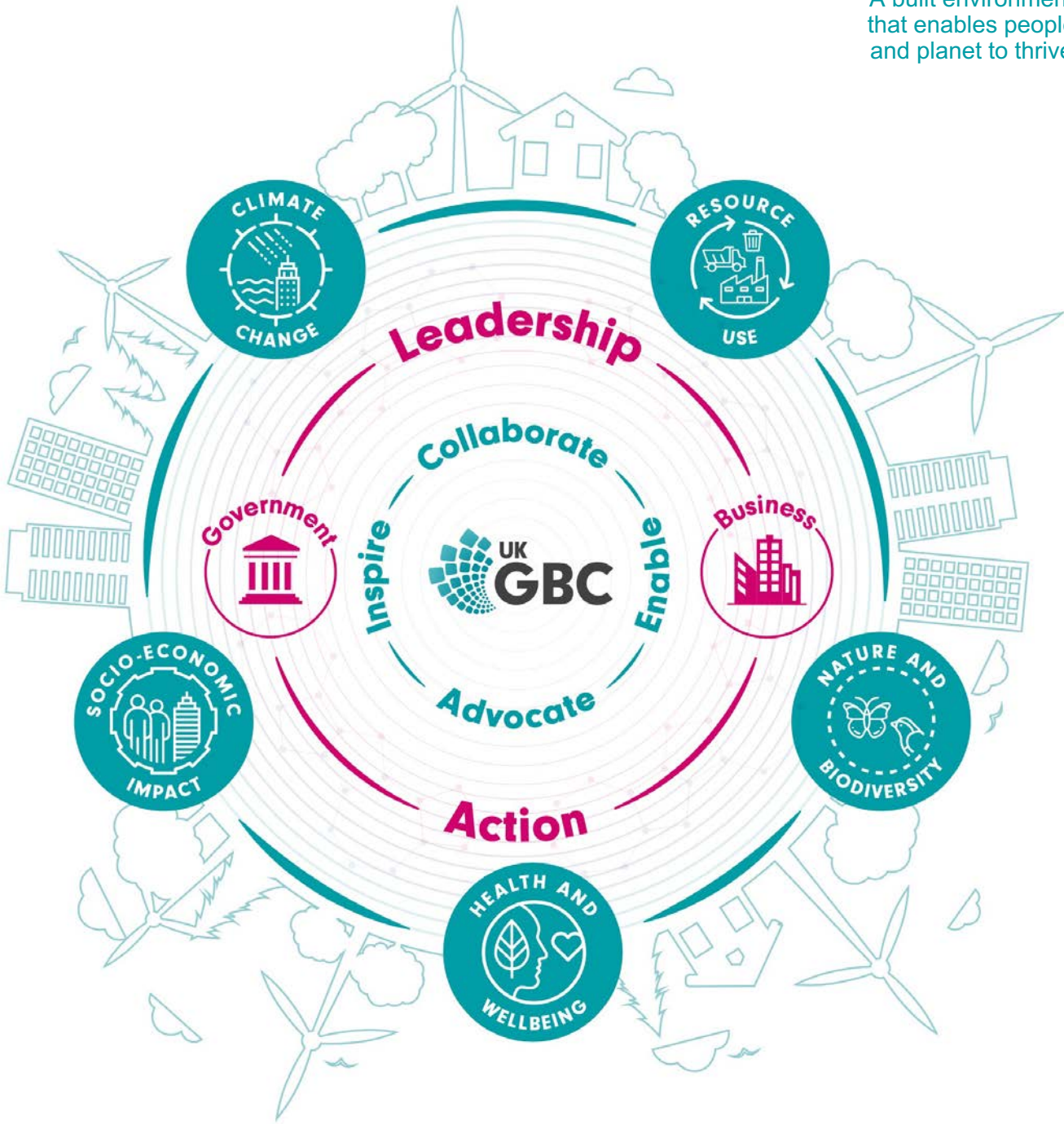
A built environmen
that enables peopl
and planet to thrive

**WE COLLABORATE** by convening diverse built environment organisations to engage in a common purpose

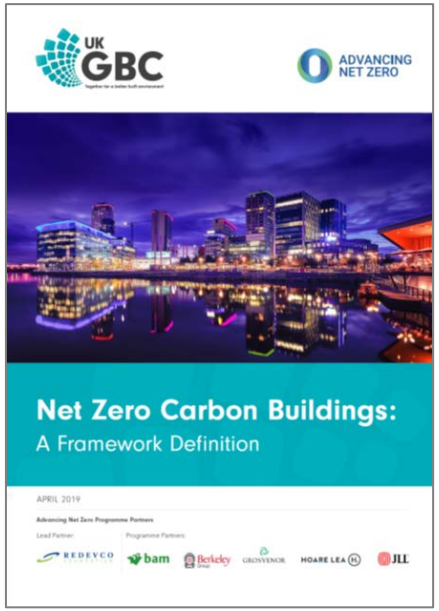
**WE ADVOCATE** by calling for ambitious commitments, stronger standards and progressive policy

**WE ENABLE** by developing guidance, showcasing solutions and stimulating innovation

**WE INSPIRE** by sharing knowledge and best practice, and encouraging transformational leadership



# Advancing Net Zero

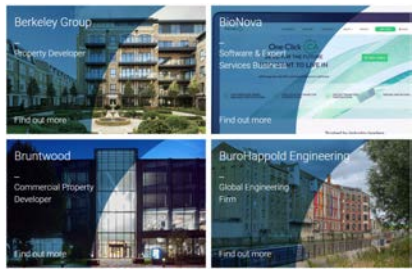






Case Studies

## Net Zero Carbon Buildings Commitment





BBP BETTER BUILDINGS PARTNERSHIP

LONDON ENERGY TRANSFORMATION INITIATIVE

RIBA Royal Institute of British Architects

SOLAR TRADE ASSOCIATION

BPF BRITISH PROPERTY FEDERATION

CIBSE

REA RENEWABLE ENERGY ASSOCIATION

RICS

Revo
Retail. Property. Community.

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# Making 2021 the most impactful year for climate action

2021 is the year of COP26, bringing an unprecedented opportunity for the building and construction sector to demonstrate its contribution to achieving Paris Agreement goals.

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# Launching Net Zero Whole Life Carbon Roadmap UK

## Project Vision:

To develop a roadmap of actions and secure the support of relevant market actors to deliver decarbonisation of the total impact (whole life cycle) of the built environment in the UK.

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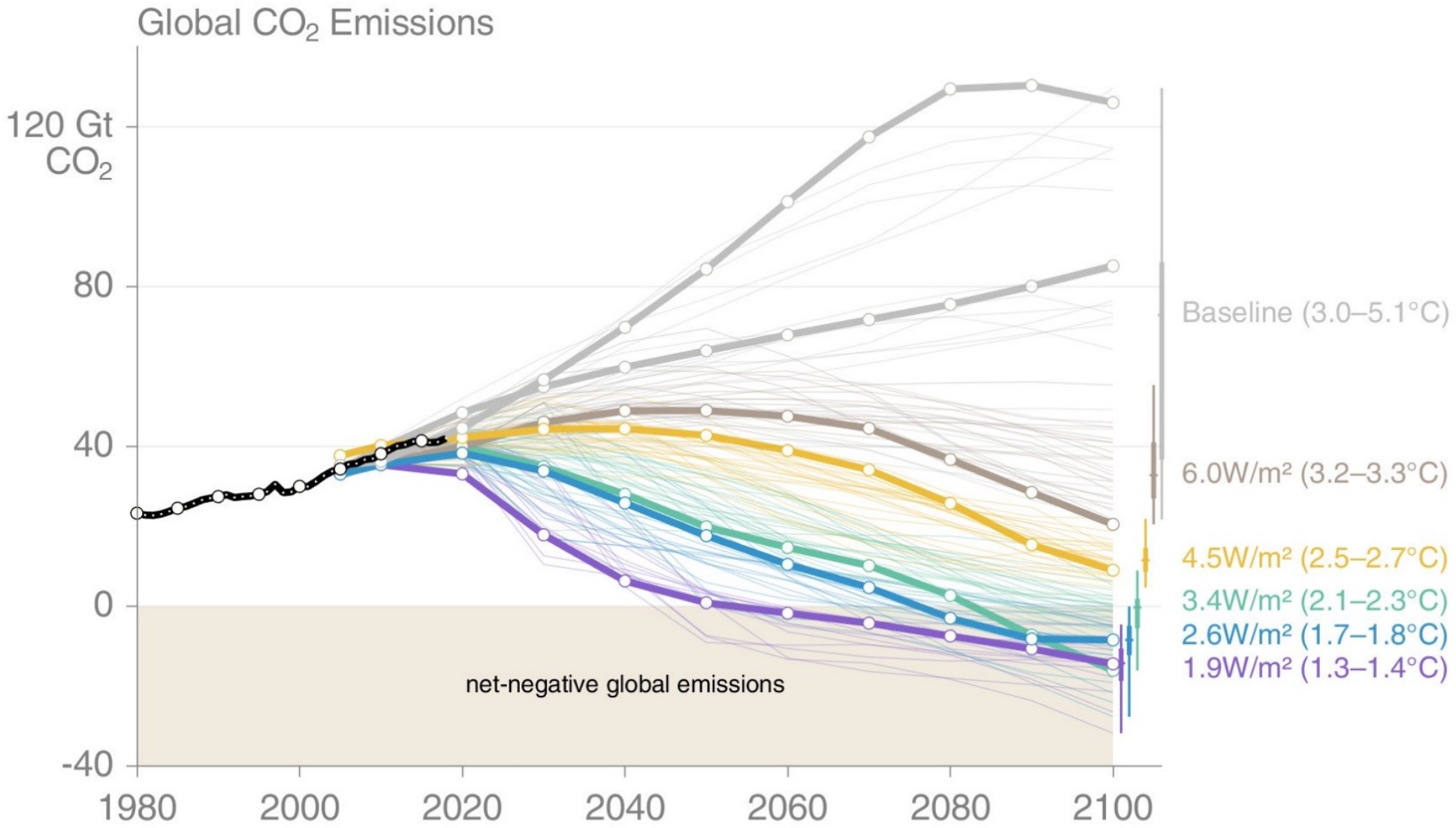
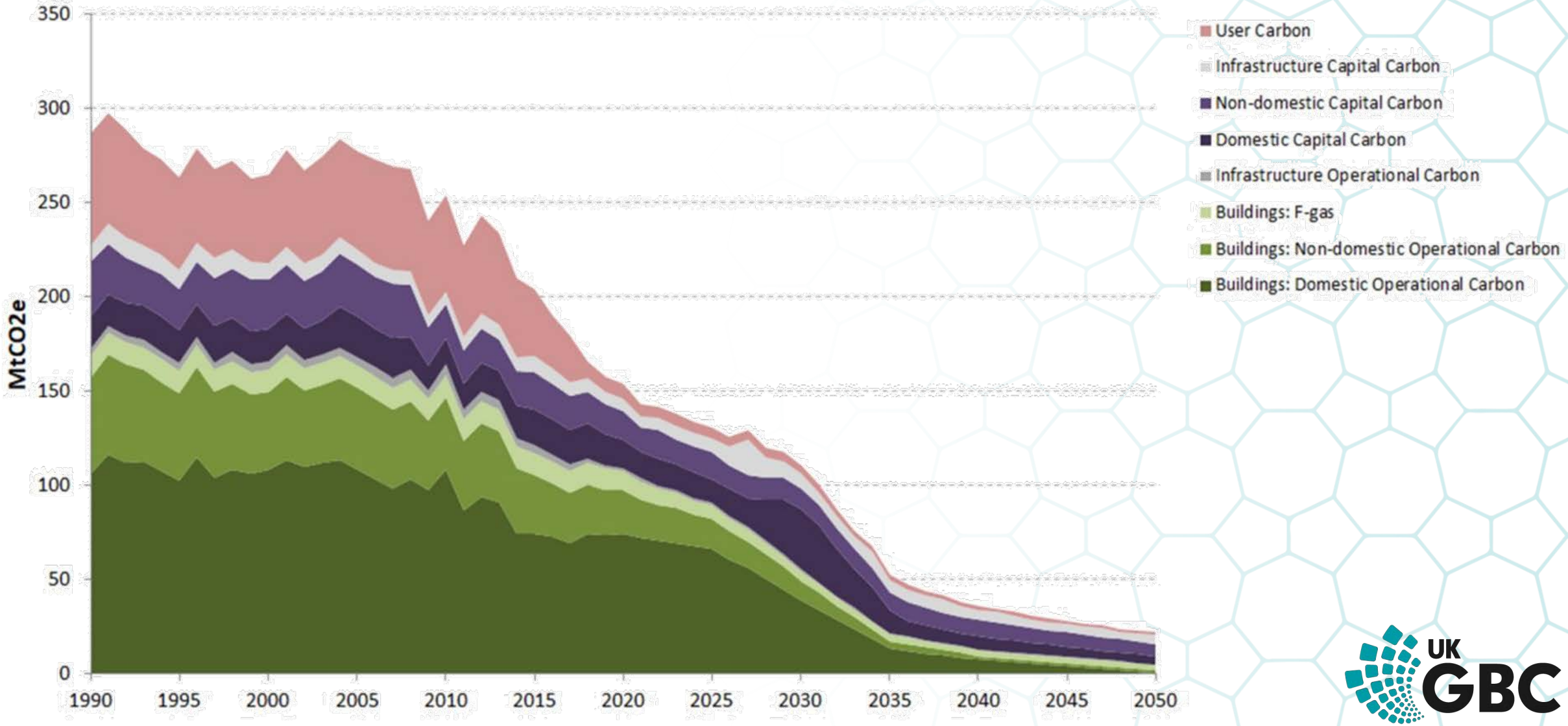
# Net zero whole life carbon roadmap objectives

- Build consensus on a pathway to a net zero carbon built environment among businesses and industry bodies
- Develop carbon targets in line with the Paris Agreement
- Set out actions, owners and processes to achieve targets
- Enable consistent sector-based action plans

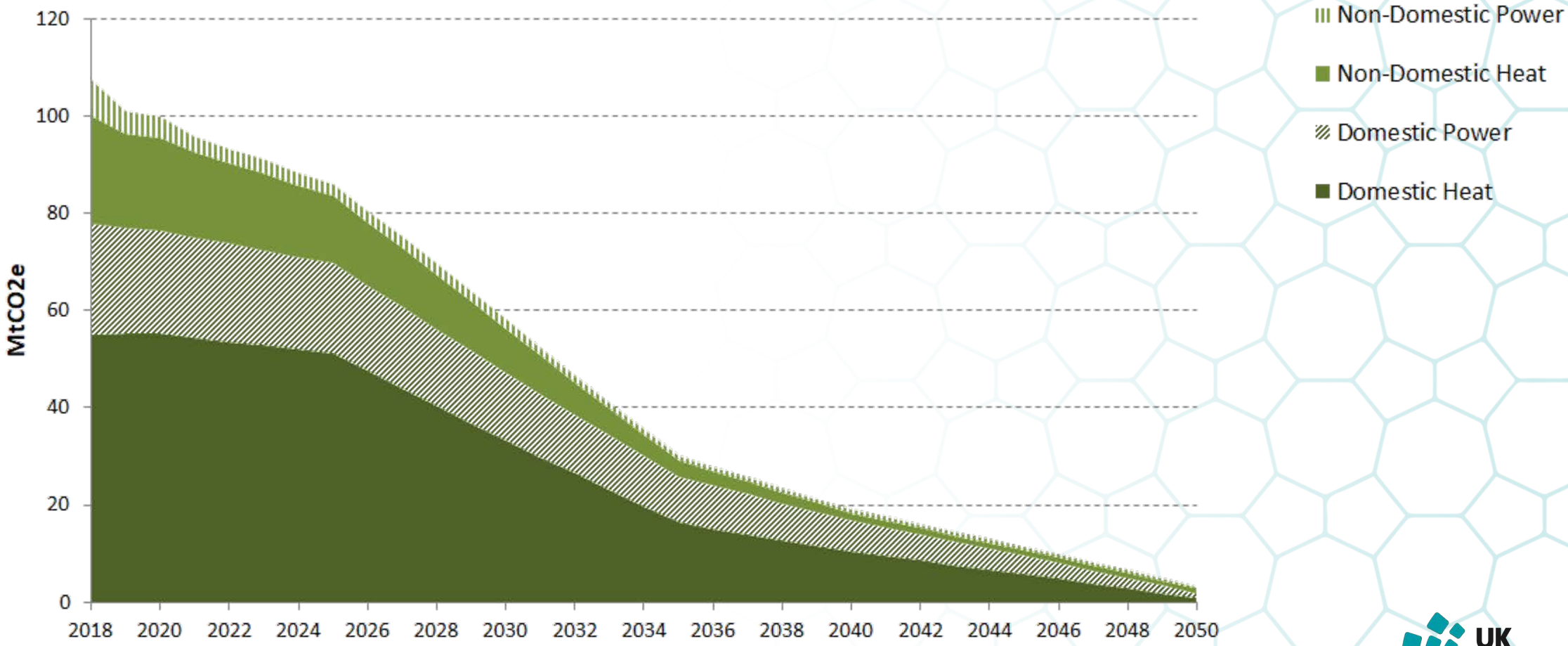
# Future global scenarios



# UK Whole Life Carbon Roadmap Trajectory



# Buildings – Operational Carbon



# Capital / Embodied Carbon

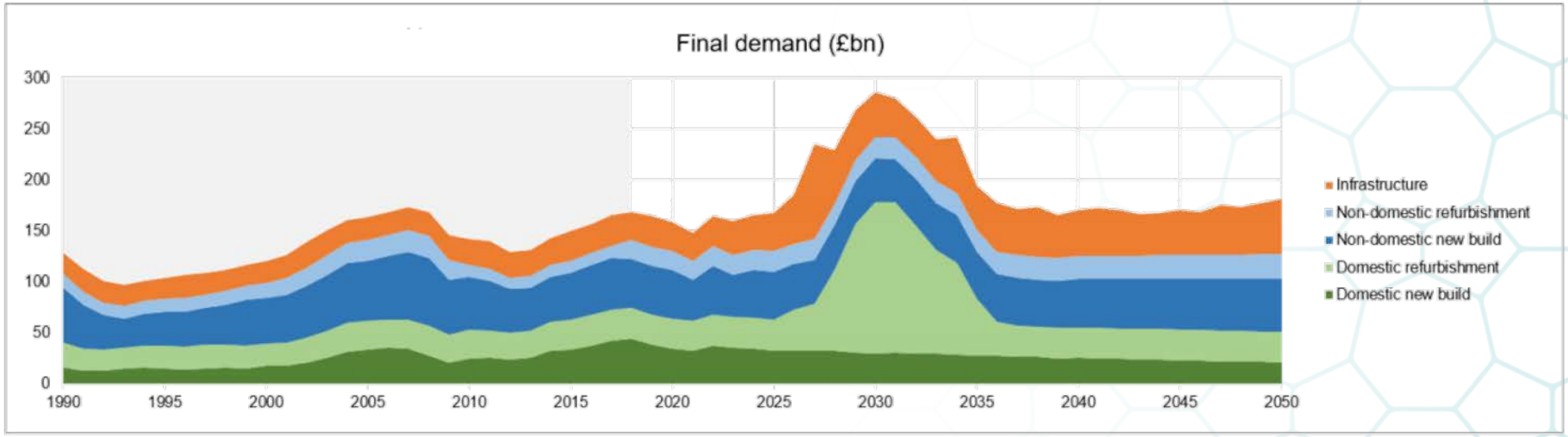
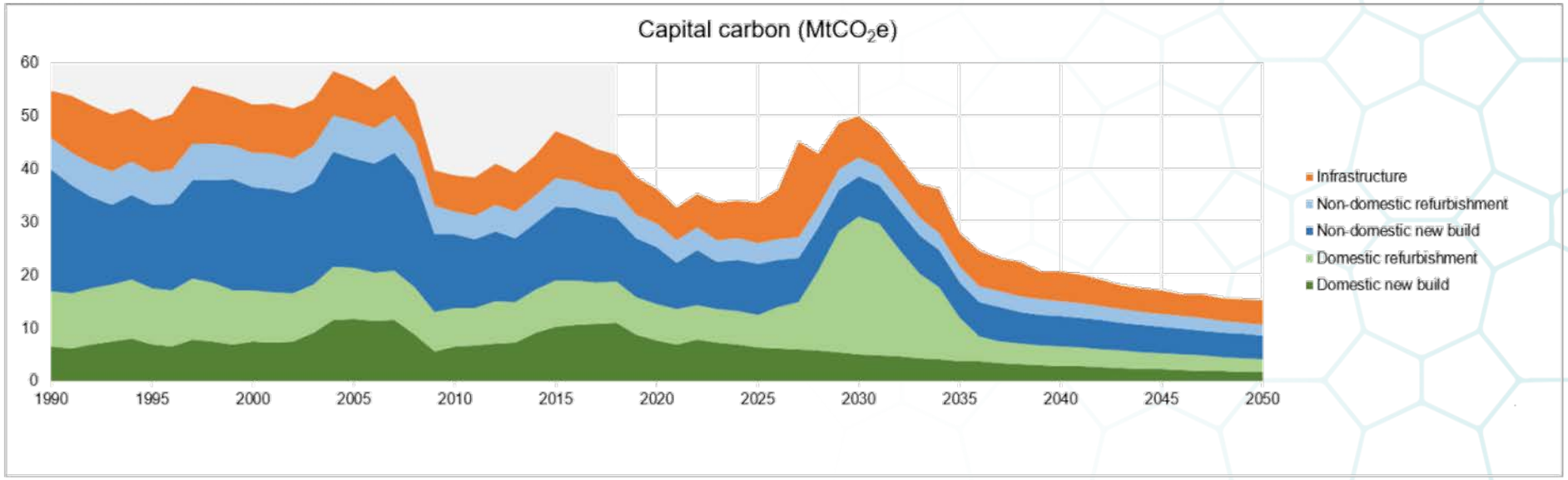
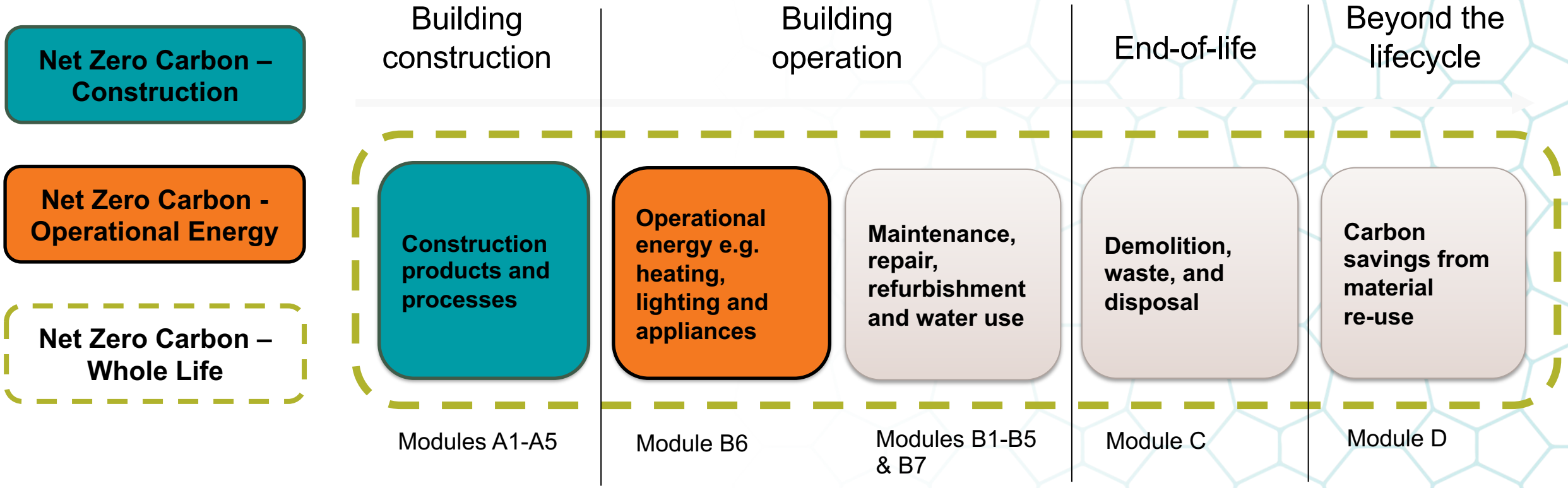



*Figure 54: Total Construction Demand split by Buildings and Infrastructure*

*Figure 55: Total Capital Carbon split by Buildings and Infrastructure*



# Net zero carbon scopes



# Policy Recommendations - Summary

## Domestic Retrofit

- National Retrofit Agency
- Update to SAP / EPC methodology
- EPC rating trajectories
- Funding mechanisms and incentives (Stamp duty incentives, VAT reduction, direct grants, etc)
- Skills & capacity building

## Non-Domestic Building Energy Performance

- Performance-rating schemes per sector launched through 2020s (starting with office >1,000m$^2$)
- In-use energy disclosure
- Minimum standards for existing / new buildings

## New Buildings

- Updates to Part L to shift from notional approach to In-Use energy metrics
- Thermal demand limits
- Peak demand

## Embodied Carbon

- Regulation of upfront embodied carbon in buildings by 2025/2027
- EPD uptake

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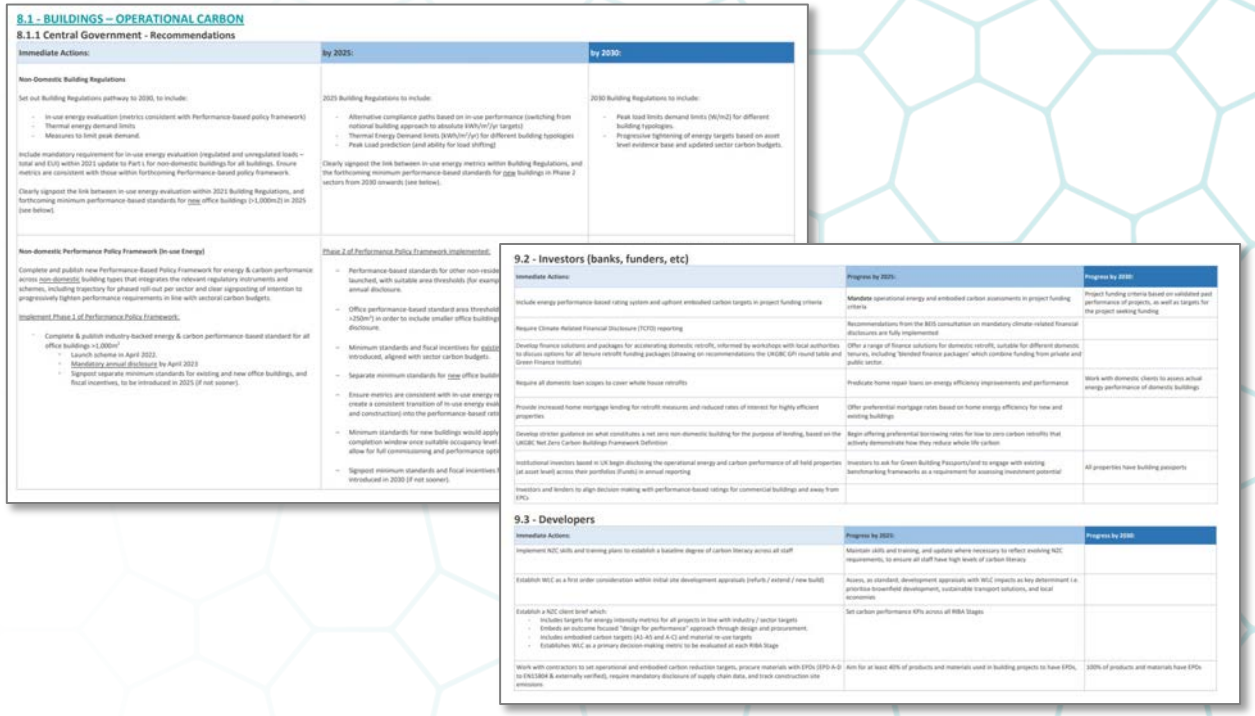
# Stakeholder Action Plans

9.1. NGOS / Trade Associations / Professional Institutions
9.2. Investors (banks, funders, etc)
9.3. Developers
9.4. Landlords / Owners
9.5. Occupiers
9.6. Facilities Managers / Maintenance
9.7. Contractors
9.8. Material & Product Manufacturers
9.9. Architects
9.10. Building Services Engineers
9.11. Structural Engineers
9.12. Homeowners and Civil Society
9.13. Infrastructure Clients
9.14. Infrastructure Owners
9.15. Infrastructure Designers



8.1 - BUILDINGS – OPERATIONAL CARBON

8.1.1 Central Government - Recommendations

| Immediate Actions: | by 2025: | by 2030: |
|---|---|---|
| **Non-Domestic Building Regulations**<br>Set out Building Regulations pathway to 2030, to include:<br>- In-use energy evaluation (metrics consistent with Performance-based policy framework)<br>- Thermal energy demand limits<br>- Measures to limit peak demand.<br>Include mandatory requirement for in-use energy evaluation (regulated and unregulated loads – total and EUI) within 2021 update to Part L for non-domestic buildings for all buildings. Ensure metrics are consistent with those within forthcoming Performance-based policy framework.<br>Clearly signpost the link between in-use energy evaluation within 2021 Building Regulations, and forthcoming minimum performance-based standards for new office buildings (>1,000m2) in 2025 (see below). | 2025 Building Regulations to include:<br>- Alternative compliance paths based on in-use performance (switching from notional building approach to absolute kWh/m²/yr targets)<br>- Thermal Energy Demand limits (kWh/m²/yr) for different building typologies<br>- Peak Load prediction (and ability for load shifting)<br>Clearly signpost the link between in-use energy metrics within Building Regulations, and the forthcoming minimum performance-based standards for new buildings in Phase 2 sectors from 2030 onwards (see below). | 2030 Building Regulations to include:<br>- Peak load limits demand limits (W/m2) for different building typologies.<br>- Progressive tightening of energy targets based on asset level evidence base and updated sector carbon budgets. |
| **Non-domestic Performance Policy Framework (In-use Energy)**<br>Complete and publish new Performance-Based Policy Framework for energy & carbon performance across non-domestic building types that integrates the relevant regulatory instruments and schemes, including trajectory for phased roll-out per sector and clear signposting of intention to progressively tighten performance requirements in line with sectoral carbon budgets.<br>Implement Phase 1 of Performance Policy Framework:<br>- Complete & publish industry-backed energy & carbon performance-based standard for all office buildings >1,000m²<br>  - Launch scheme in April 2022.<br>  - Mandatory annual disclosure by April 2023<br>  - Signpost separate minimum standards for existing and new office buildings, and fiscal incentives, to be introduced in 2025 (if not sooner). | Phase 2 of Performance Policy Framework implemented:<br>- Performance-based standards for other non-reside launched, with suitable area thresholds (for exemp annual disclosure.<br>- Office performance-based standard area threshold >250m²) in order to include smaller office building disclosure.<br>- Minimum standards and fiscal incentives for existi introduced, aligned with sector carbon budgets.<br>- Separate minimum standards for new office build<br>- Ensure metrics are consistent with in-use energy m create a consistent transition of in-use energy evalu and construction) into the performance-based ratin<br>- Minimum standards for new buildings would apply completion window once suitable occupancy level allow for full commissioning and performance optio<br>- Signpost minimum standards and fiscal incentives introduced in 2030 (if not sooner). | |

9.2 - Investors (banks, funders, etc)

| Immediate Actions: | Progress by 2025: | Progress by 2030: |
|---|---|---|
| Include energy performance-based rating system and upfront embodied carbon targets in project funding criteria | **Mandate** operational energy and embodied carbon assessments in project funding criteria | Project funding criteria based on validated post performance of projects, as well as targets for the project seeking funding |
| Require Climate-Related Financial Disclosure (TCFD) reporting | Recommendations from the BEIS consultation on mandatory climate-related financial disclosures are fully implemented | |
| Develop finance solutions and packages for accelerating domestic retrofit, informed by workshops with local authorities to discuss options for all tenure retrofit funding packages (drawing on recommendations the UKGBC GPI round table and Green Finance Institute) | Offer a range of finance solutions for domestic retrofit, suitable for different domestic tenures, including 'blended finance packages' which combine funding from private and public sector. | |
| Require all domestic loan scopes to cover whole house retrofits | Predicate home repair loans on energy efficiency improvements and performance | Work with domestic clients to assess actual energy performance of domestic buildings |
| Provide increased home mortgage lending for retrofit measures and reduced rates of interest for highly efficient properties | Offer preferential mortgage rates based on home energy efficiency for new and existing buildings | |
| Develop stricter guidance on what constitutes a net zero non-domestic building for the purpose of lending, based on the UKGBC Net Zero Carbon Buildings Framework Definition | Begin offering preferential borrowing rates for low to zero carbon retrofits that actively demonstrate how they reduce whole life carbon | |
| Institutional investors based in UK begin disclosing the operational energy and carbon performance of all held properties (at asset level) across their portfolios (Funds) in annual reporting | Investors to ask for Green Building Passports/and to engage with existing benchmarking frameworks as a requirement for assessing investment potential | All properties have building passports |
| Investors and lenders to align decision making with performance-based ratings for commercial buildings and away from EPCs | | |

9.3 - Developers

| Immediate Actions: | Progress by 2025: | Progress by 2030: |
|---|---|---|
| Implement NZC skills and training plans to establish a baseline degree of carbon literacy across all staff | Maintain skills and training, and update where necessary to reflect evolving NZC requirements, to ensure all staff have high levels of carbon literacy | |
| Establish WLC as a first order consideration within initial site development appraisals (refurb / extend / new build) | Assess, as standard, development appraisals with WLC impacts as key determinant i.e. prioritise brownfield development, sustainable transport solutions, and local economies | |
| Establish a NZC client brief which:<br>- Includes targets for energy intensity metrics for all projects in line with industry / sector targets<br>- Embeds an outcome focused "design for performance" approach through design and procurement.<br>- Includes embodied carbon targets (A1-A5 and A-C) and material re-use targets<br>- Establishes WLC as a primary decision-making metric to be evaluated at each RIBA Stage | Set carbon performance KPIs across all RIBA Stages | |
| Work with contractors to set operational and embodied carbon reduction targets, procure materials with EPDs (EPD A-D to EN15804 & externally verified), require mandatory disclosure of supply chain data, and track construction site emissions | Aim for at least 40% of products and materials used in building projects to have EPDs, | 100% of products and materials have EPDs |

# Stakeholder Action Plans

Net Zero Whole Life Carbon Roadmap:
Stakeholder Action Plan

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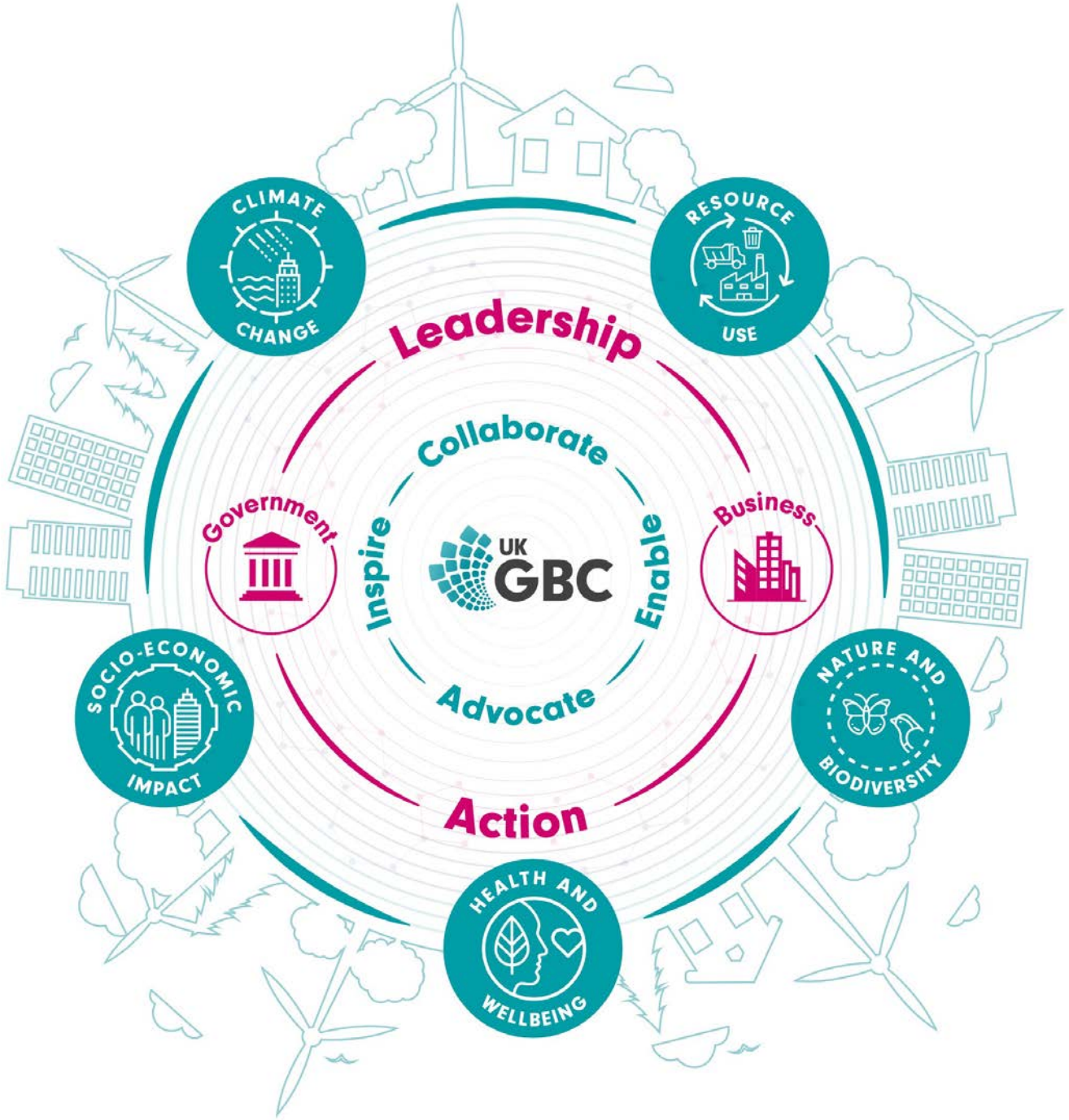
## Facilities Managers / Maintenance

| Immediate Actions: | Progress by 2025: | Progress by 2030: |
|---|---|---|
| Implement skills and training plans for all students and staff to understand energy targets and plant maintenance requirements for net zero archetypes. | Undertake accredited training for all staff to deliver optimal building service management. | Staff fully equipped to manage and deliver Net Zero Carbon (NZC) energy targets. |
| Commit to assessing, monitoring, and implementing building performance plans, set against energy use reduction targets over time, including clear plans for ongoing engagement with end users/occupiers. | By 2025, report on performance against plans and demonstrate significant progress. | |
| Incorporate data associated with operational carbon, embodied carbon, and building / infrastructure lifecycles within the ongoing management of existing / future assets to drive low carbon decisions. | Managers adopt BIM-based building passports. | |
| Share learnings from maintaining / operating net zero assets to inform future projects and retrofits, including the submission of operational and embodied carbon data into a centralised data base to inform new projects. | | |
| Advocate for earlier involvement in the design and renovations process to ensure the project brief is informed by aftercare and vice versa. | Managers are advocates for NZC buildings. | |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Leadership
Collaborate
Inspire
Enable
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Action
HEALTH AND WELLBEING

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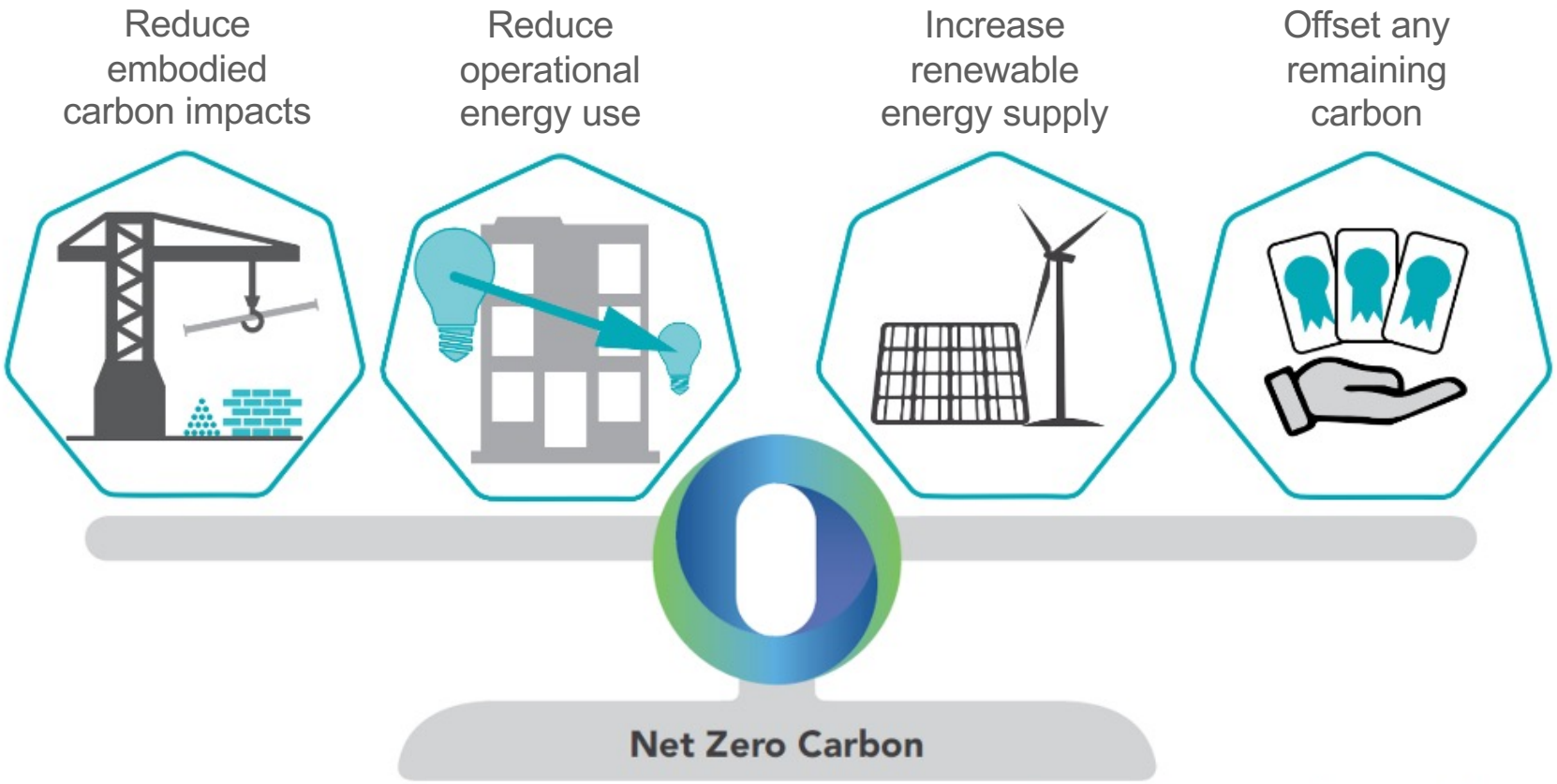
# We must balance the scales...



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# Thank you

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