

Mission impossible?

The role of place in mission-oriented innovation and sustainability policy

GM Policy Hub Seminar

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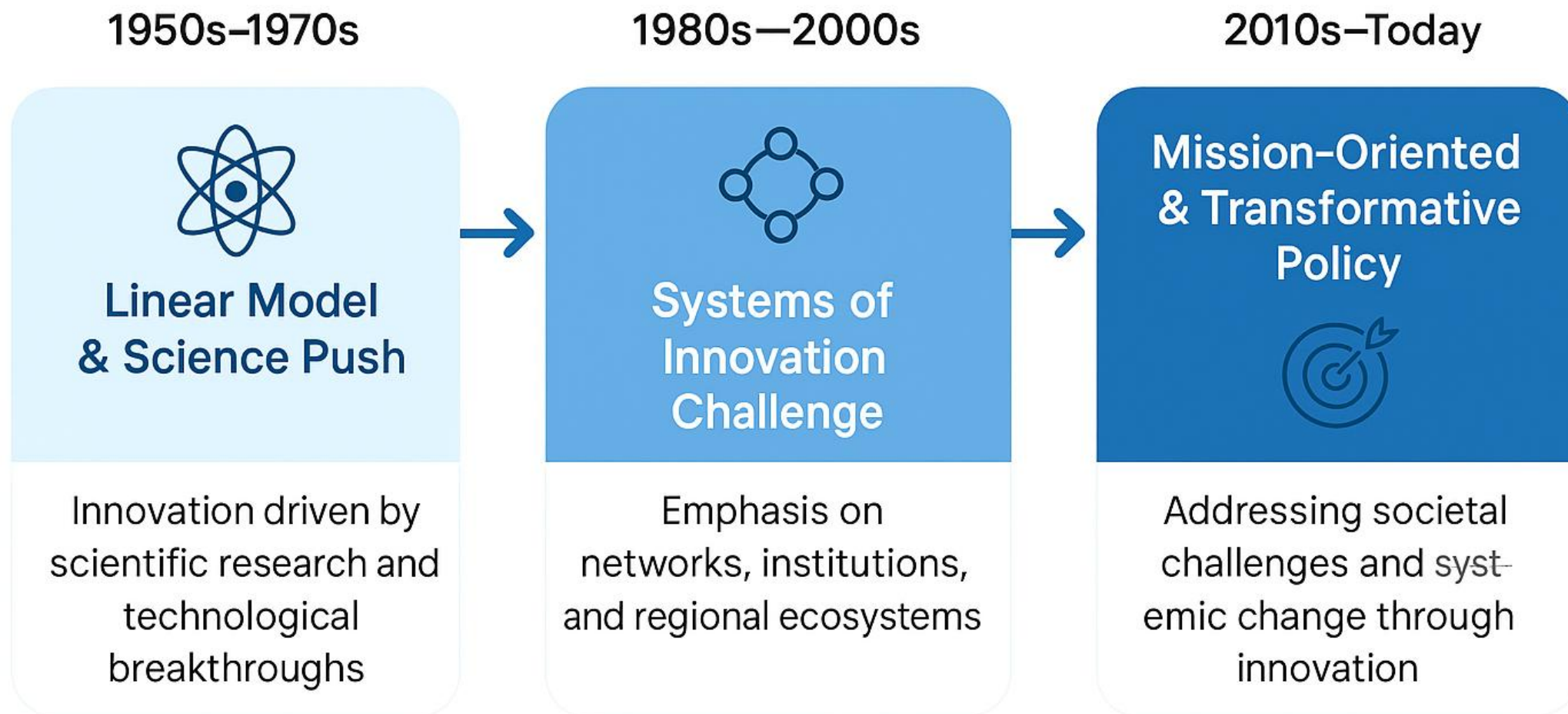


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01

Setting the stage for Mission Oriented Innovation Policy

Evolution of Innovation Policy



Characteristics of Old and New Missions

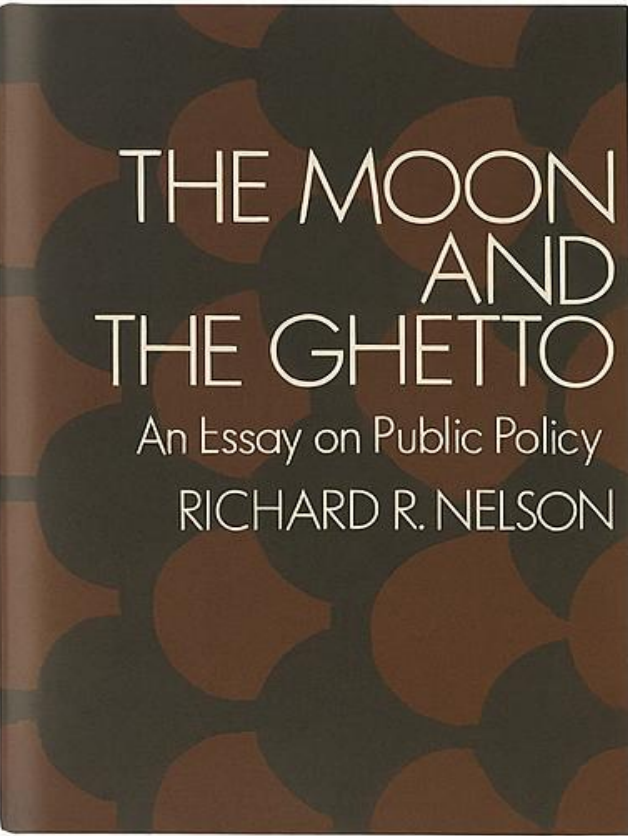
FOCUS	Defence, nuclear, aerospace	→	Environmental technologies & societal challenges
GOALS	Narrow; diffusion outside core discouraged	→	Broad; diffusion is central and encouraged
DEFINITION	Technical achievements; economic feasibility	→	Economically feasible solutions to societal problems
DIRECTION	Expert-driven; defined in advance	→	Multi-actor; government, firms, consumers shape it
POLICY MIX	Self-contained; little policy coherence	→	Many firms; radical and incremental innovation

Modern missions are systemic, inclusive, and diffusion-oriented

Source: Soete and Arundel (1993)

Wicked vs. Tame Problems

“If we can put a man on the moon...”

The book cover for 'The Moon and the Ghetto' by Richard R. Nelson. It has a dark brown background with a pattern of lighter brown, irregular circular shapes. The title 'THE MOON AND THE GHETTO' is written in large, white, serif capital letters. Below the title, in smaller white capital letters, is 'An Essay on Public Policy' and the author's name 'RICHARD R. NELSON'.

Moon landing: technically complex, but solvable with clear goals



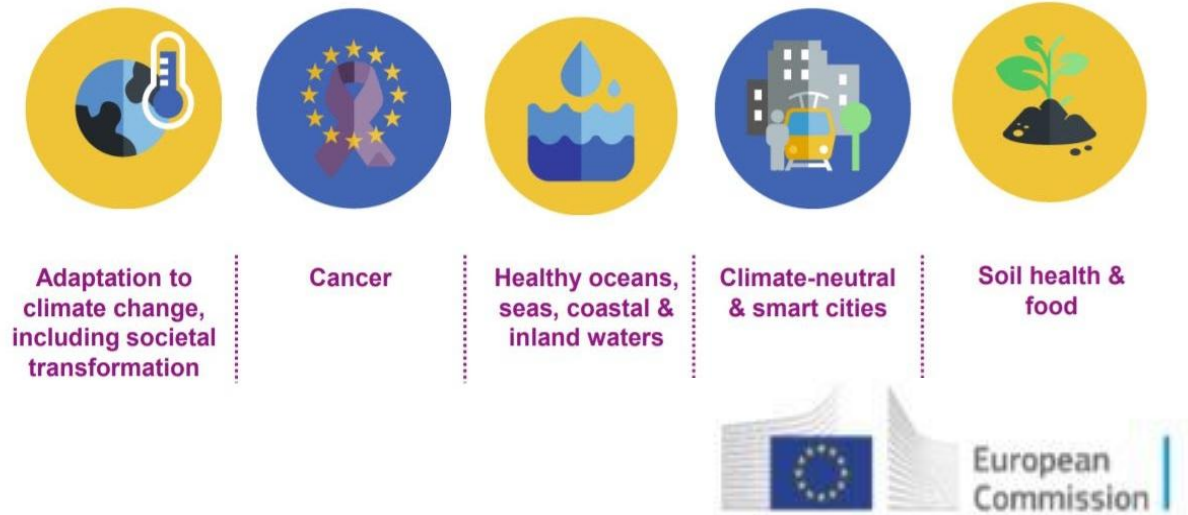
Social issues: multi-causal with no single solution *“Wicked problems”*

Why it matters Policy challenges are wicked, requiring adaptive, systemic solutions.

Characteristics of Mission Oriented Innovation Policy

- **Directionality:** Concrete problems to be solved with clear purpose
- **Ambitious & Ground-breaking:** Often cross-disciplinary with large impact
- **Well-defined Goals:** Quantified targets with predefined milestones
- **Systemic Approach:** Coherent portfolio of complementary instruments
- **Multi-stakeholder:** Government, private firms, and consumer groups

Source: Mazzucato (2018)



Key critiques

Ideological/Conceptual

- Do governments have the knowledge and **capacity** needed for such ambitious policies?
- Risk of mission **capture**: Powerful incumbents may shape missions toward their own interests.
- Simplified historical narratives: Past “mission successes” are often overstated or selectively interpreted. Not enough learning from **failure**.
- **Conceptual** dilution: calling everything a “mission” leads to vague goals and poor policy design.

Implementation

- Missions often sit within science & technology **silos**, failing to mobilise wider policy areas.
- **Technological bias**: Focus on technological solutions can overshadow social innovation and behavioural change.
- **Context blindness**: Insufficient attention to institutional variation and local implementation conditions — leads to place-blind design.
- **Limited stakeholder engagement**: Citizen, civic, and regional involvement often shallow or inconsistent.
- **Evaluation & funding** constraints: Difficulty measuring mission progress; funding remains fragmented and largely supply-side.

Danger of ‘Spatially-Blind’ Missions



- Missions are often framed as universal and place-neutral.
- But societal challenges vary geographically — the *geography of problems* differs from a *geography of solutions*.
- Tech-centred missions risk reinforcing spatial **inequalities**, favouring stronger regions.
- Top-down design raises **legitimacy** questions — who defines the problem, and for whom?
- Weak consideration of ‘place’ undervalues local experimentation, reduces learning and ownership, and weakens democratic legitimacy.



Example: cities and net-zero mission

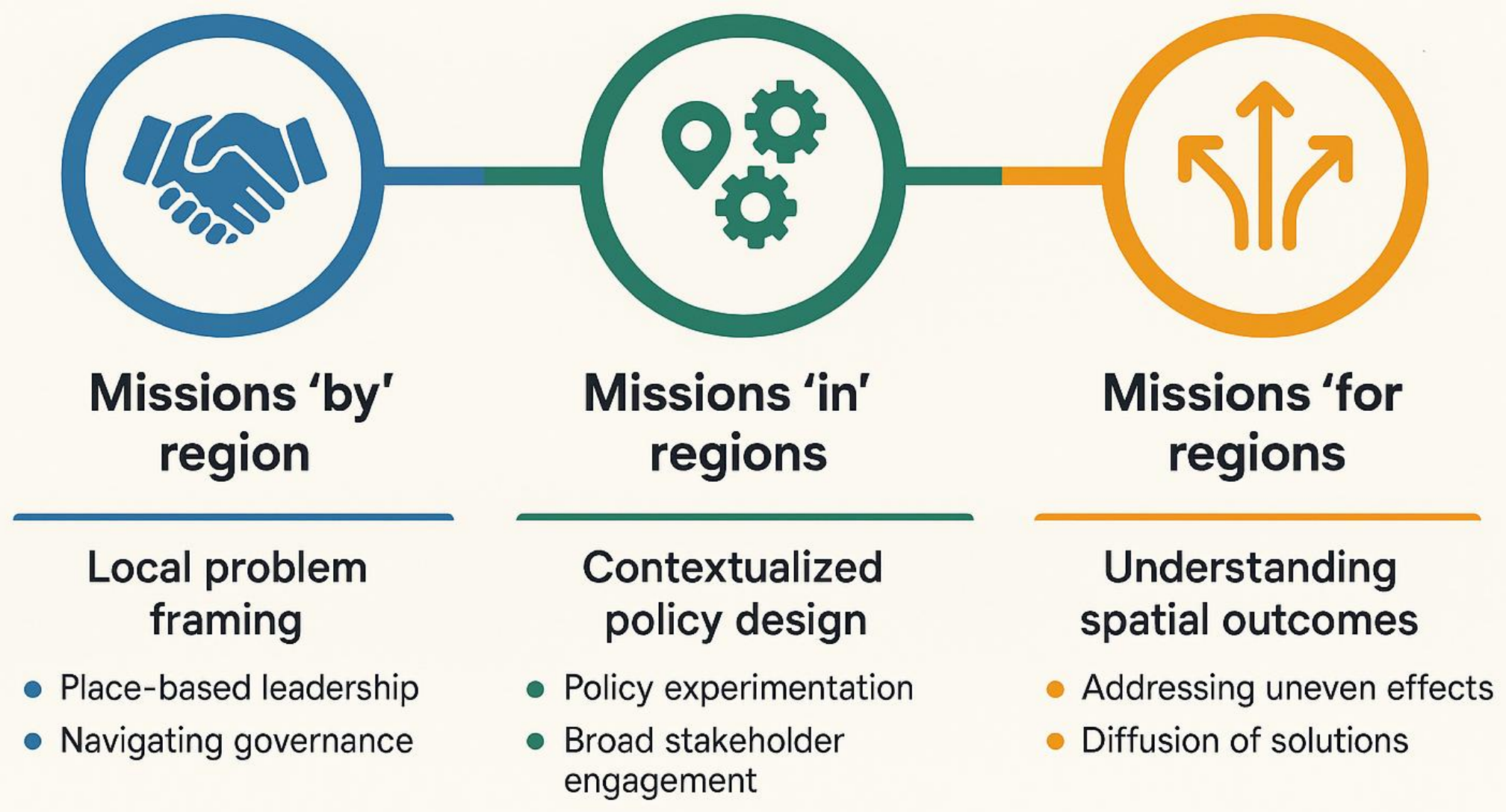
Cities are part of the problem

- Urban areas are major contributors to greenhouse gas (GHG) emissions, and it is where the vast majority of vulnerable populations and critical infrastructure are located
- 66% of global population projected to live in cities by 2050
- But different climate vulnerabilities and levels of preparedness

They are also part of the solution:

- Key hubs of science and innovation
- Local (place-based) policy initiatives – many cities have begun to intervene and undertake measures (congestion charges, low emission zones, etc.)
 - Sometimes despite lack of national action
- Local (city-level) implementation of national level policies
- Division (and coordination) of power/policies between local/city and national levels

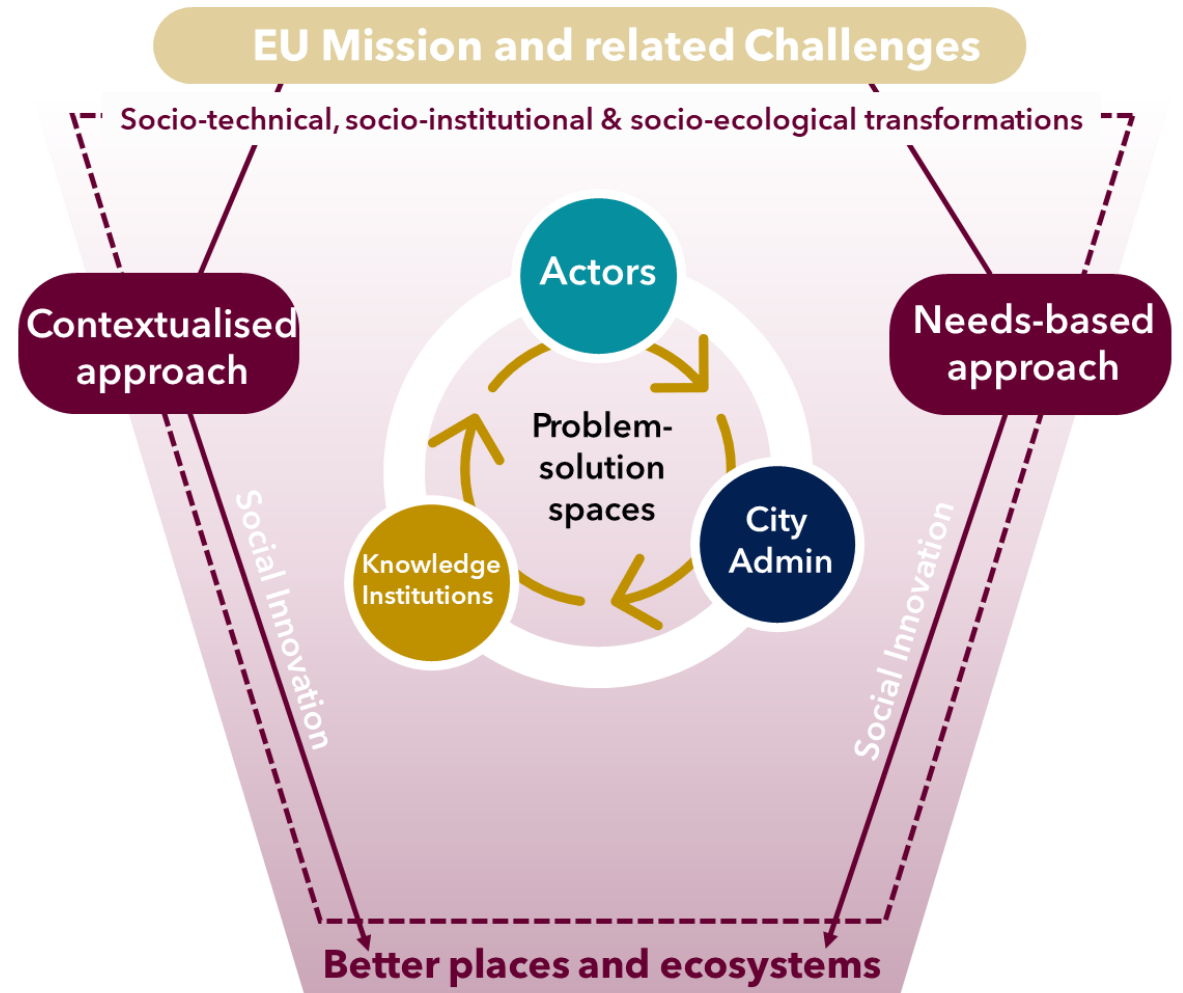
Dimensions of spatially-sensitive mission policy



Source: Uyarra, E., Bugge, M.M., Coenen, L., Flanagan, K. & Wanzenböck, I. (2025)

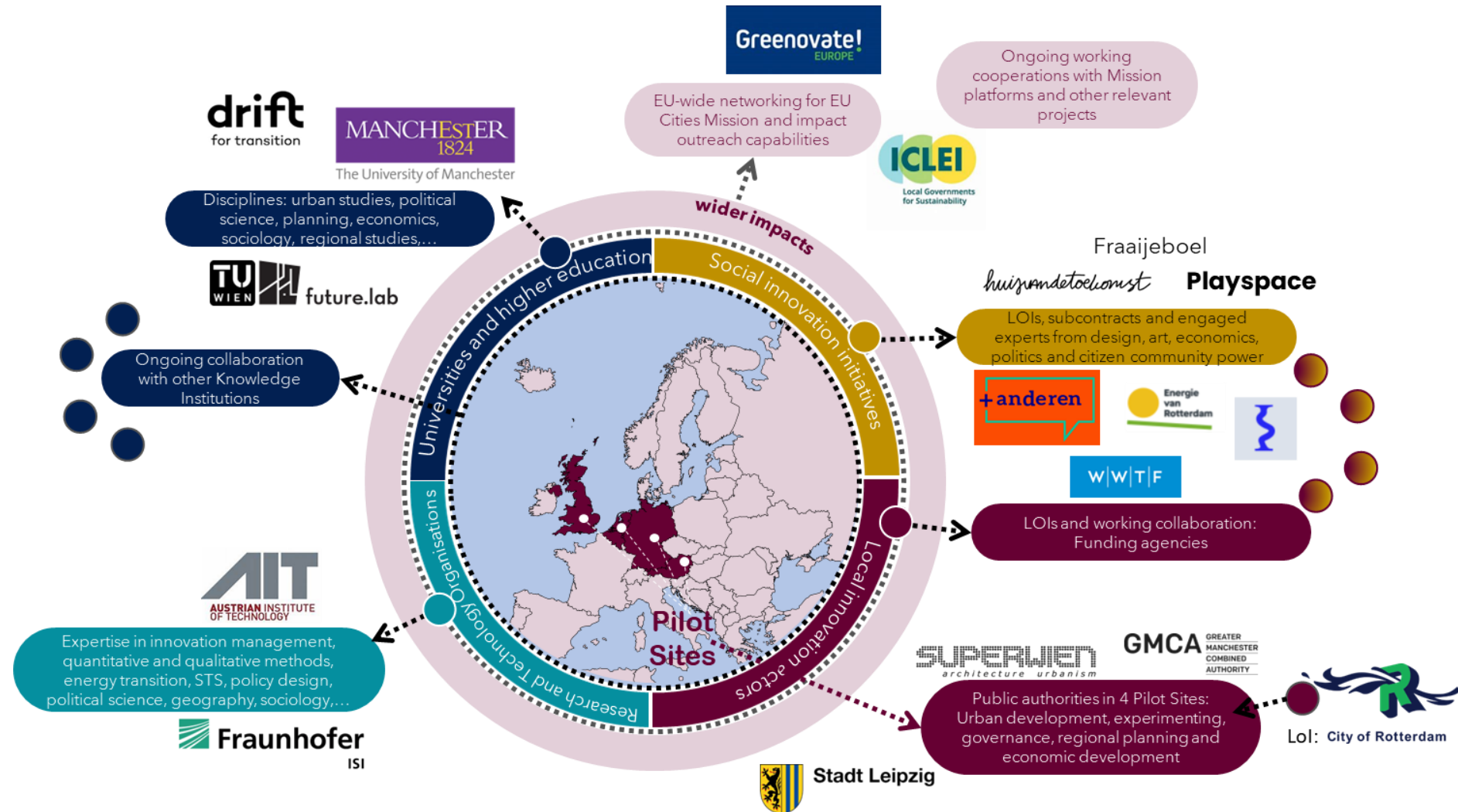
This is what Catalyse is aiming to do

- Bring a spatially-sensitive perspective to mission-oriented policy.
- Strengthen the role of knowledge institutions in translating missions into local contexts.
- Support deeper engagement with cities, regions and communities.
- Enable local experimentation, learning and more legitimate mission design.
- Build capabilities for more inclusive, context-responsive implementation.



Partners

- 4 pilot sites
- 11 partners
- 3 years



02

Greater Manchester's Clean Growth Mission

How to frame grand challenges locally to mobilize action?

- Applies challenge thinking to industrial strategy.
- Clean growth is one of the key missions.
- Informed by an extensive review of local economic conditions and consultation with stakeholders.



Local Industrial Strategy (2019)

NORTHERN POWERHOUSE



First 5 Year Environment Plan

- 15 interviews (so far).
- Observations during my time as a member of the Research & Policy Team at GMCA.
- Archival sources (2008 to 2019) such as policy briefs, meeting minutes, and progress evaluation reports.

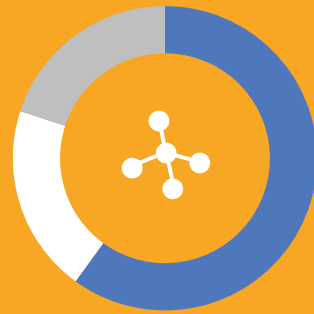


Greater Manchester's 'clean growth' mission



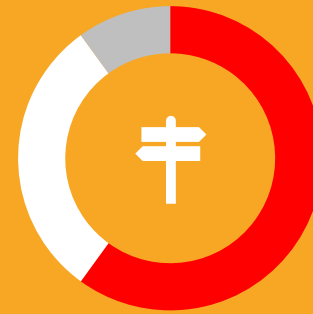
Stage 1

2008 - 2012
Mini Stern for GM



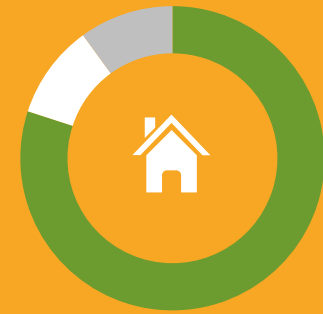
Stage 2

2014 - 2016
Local mobilisation



Stage 3

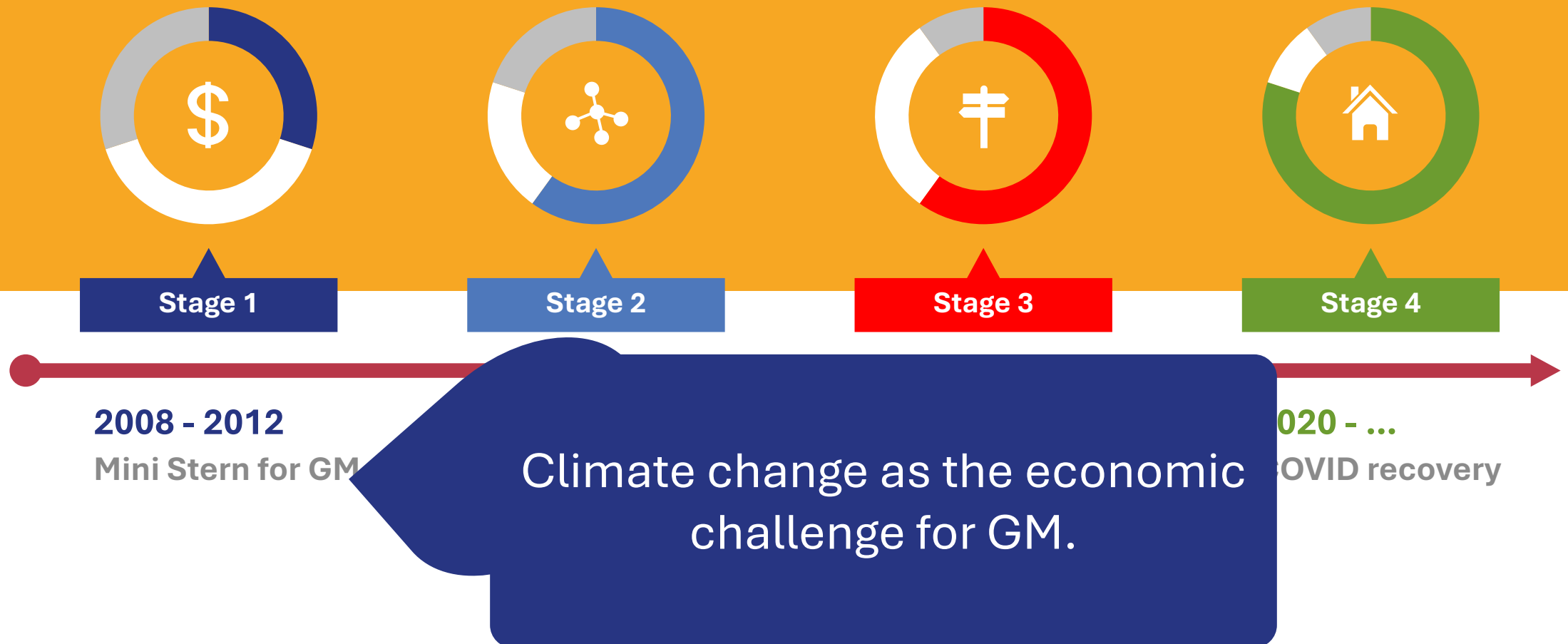
2017 - 2018
National Industrial
Strategy



Stage 4

2020 - ...
COVID recovery

Greater Manchester's 'clean growth' mission

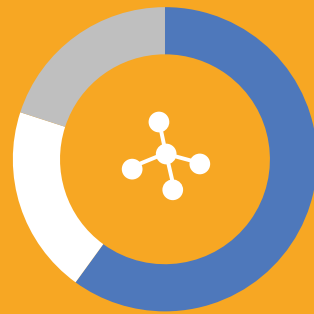


Greater Manchester's 'clean growth' mission



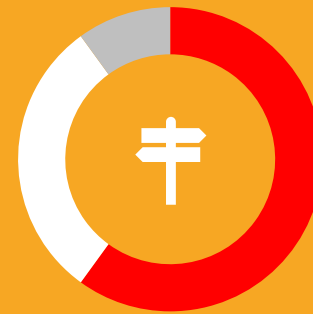
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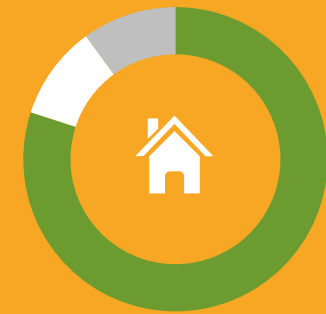


Stage 2

2014 - 2016
Local mobilis



Stage 3



Stage 4

Climate change as a challenge
shared between multiple local
stakeholders.

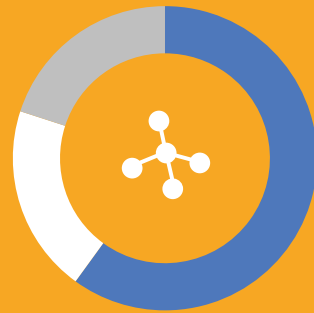


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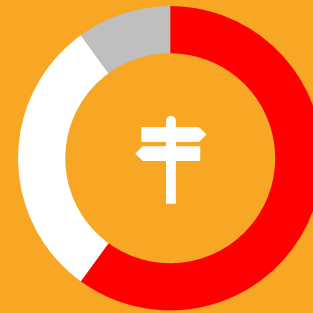
Greater Manchester's 'clean growth' mission



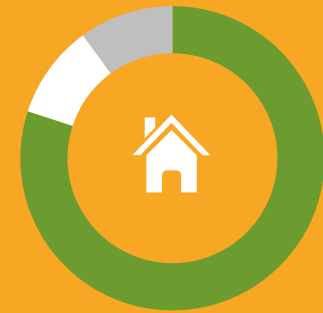
Stage 1



Stage 2



Stage 3



Stage 4

Climate change disappears
and then returns as a
challenge for the UK economy

2017 - 2018
National Industrial
Strategy

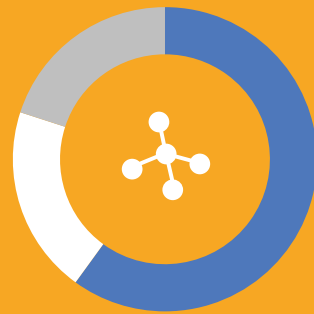
2019 - ...
COVID recovery



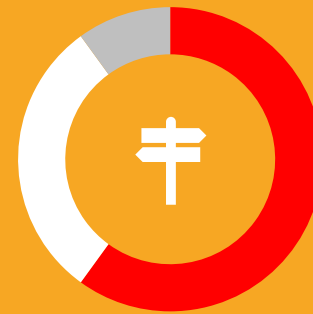
Greater Manchester's 'clean growth' mission



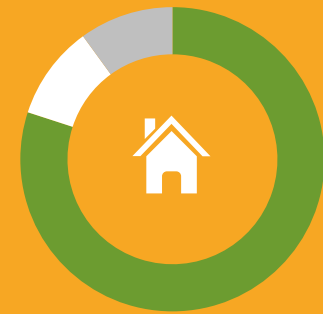
Stage 1



Stage 2



Stage 3



Stage 4

2008
Mini S

2020 - ...
COVID recovery

Local commitment to clean
growth remains stable despite
COVID crisis.



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Path to green industrial revolution?

Energy efficiency retrofit as an engine for growth

‘... expertise in highly energy efficient buildings also represents an industrial opportunity for the UK’ (CCC, 2019c: 59)



Technology characteristics and state of the sector

Underdeveloped supply chain

A small number of companies (Chaudry et al., 2015) struggle with creating viable business models (Brown, 2018) and accessing skilled workforce (Martiskainen & Kivimaa, 2018).

Unstable national policy

National grant funding ‘comes and goes’, the policy environment lacks clear direction and causes market uncertainty (Geels & Turnheim, 2022).

‘Sticky’ and configurational

Working with existing buildings adds complexity - final product characteristics are dependent on the (on-site) configuration of many technologies (Wesche et al., 2019).

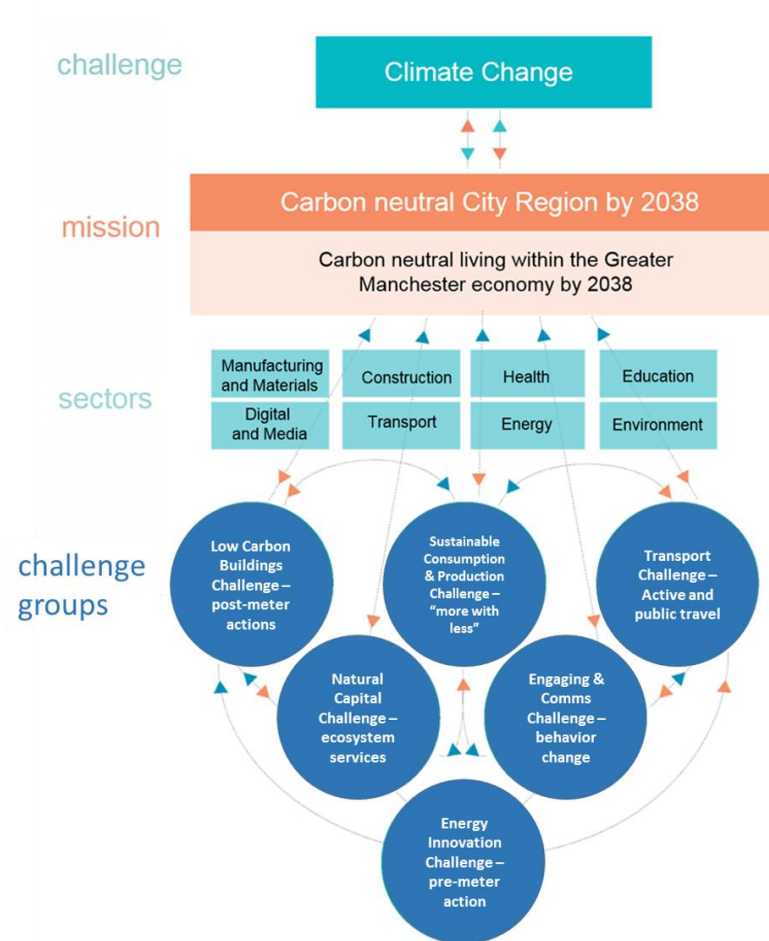
Building the local retrofit industry in GM



03

Implementation of the mission

Beginning the Mission Based Approach



- In 2019 six challenge groups were set up. Each group delivered different elements of the Five Year Environment Plan
- Members of the groups were an amalgamation of pre-existing networks and a stakeholder mapping exercise to bring in new organisations.
- The groups met quarterly and set up task and finish groups to focus on specific pieces of work.

Early success and emerging challenges

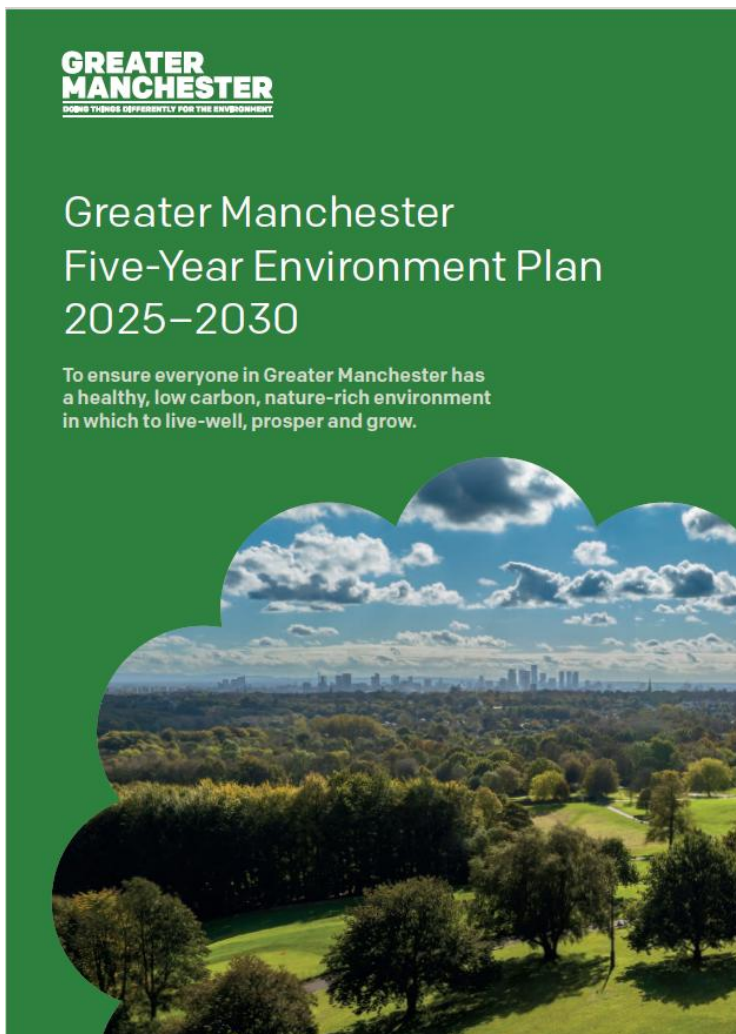
Success

- Early momentum with the launch of the 5YEP and MBA led to committed engagement from members.
- Task and finish groups led to successful delivery particularly in retrofit, innovation and natural environment.
- Interest in joining the MBA increased and membership reached over 100 organisations.
- Improving collaborative relationship with universities e.g. setting up the energy innovation agency, close relationship with UoS Energy House, IGNITION Project,

Challenge

- Progress plateaued after initial wave of commitment.
- Struggle for GMCA to move from leading to convening role.
- Difficult moving from talking to doing in some areas.
- Lack of active participation from some organisations
- The Sustainable Consumption and Production Challenge Group failed to make significant progress.

Second Five Year Environment Plan



- Commitment to mission based approach reiterated with acknowledgement of ongoing challenges.
- Commitment to reviewing and updating the green city region governance to support delivery of the new plan.

Five Year Environment Plan Aims

1. Our **energy infrastructure** is smart, flexible and fit for a low carbon, sustainable future
2. Our **buildings** are sustainable and energy efficient
3. Our **transport** system is reliable, integrated, inclusive, affordable and enables sustainable **travel**
4. Our **natural environment** is enhanced, providing benefits for nature and people
5. Our city region transitions to a **circular economy** and our **waste** is reduced, reused, recycled or recovered
6. Our city-region is better **adapted** to the increasing impacts of climate change and is more **resilient**
7. Our **air quality** enhances the health wellbeing and quality of life of the city region
8. Our **economy** will grow sustainably because of the interventions we make benefitting our residents and businesses

Our energy infrastructure is smart, flexible and fit for a low carbon future

1

1. Increase renewable energy generation and energy storage installed
2. Increase the resilience, capacity and flexibility of the electricity network and its users
3. Increase the number, generation capacity and level of operational heat networks
4. Increase installed capacity and use of low carbon hydrogen

Our buildings are sustainable and energy efficient

2

5. Increase the number of homes retrofitted
6. Increase the number of public and commercial buildings retrofitted
7. Increase the number of low carbon heating systems installed
8. Ensure all new developments are net zero carbon and sustainable

Our transport system is reliable, integrated, inclusive, affordable and enables sustainable travel

3

9. Establish a long-term strategy and detailed delivery plan for an integrated transport system by 2027
10. Deliver an integrated transport system to enable the GM population to switch to active/public transport
11. Support the transition to electric mobility
12. Deliver policies and programmes that make sustainable transport and travel as attractive as possible
13. Support communities and business to adopt more sustainable travel habits

Our natural environment is enhanced, providing benefits for people, economy and nature

4

14. Expand and enhance our best spaces for nature
15. Better connect the best spaces for nature by creating and restoring habitats
16. Reduce pressures on our water environment
17. Increase the amount of green and blue spaces (parks, countryside, public realm etc) that are better managed for nature
18. Increase the number of green and resilient transport routes, streets & highways
19. Increase the amount of green and resilient new infrastructure, regeneration and development
20. Increase the amount of community-led action and better connection to nature

Our city region transitions to a circular economy and our waste is reduced, reused or recovered

5

- 21. Increase the rate of transition to a circular economy through an industry approach primarily focusing on construction, plastics and textiles industries
- 22. Deliver policies and programmes to make carbon reduction actions and sustainable lifestyles attractive
- 23. Reduce the amount of waste in every waste stream by reducing consumption and increasing reuse, repair and redistribution
- 24. Develop and implement the GM Waste and Resources Strategy

Our city region is better adapted and more resilient to the increasing impacts of climate change

6

- 25. The priority risks arising from climate change are managed and reduced
- 26. The adaptive capacity and resilience of our communities and organisations is increased with a focus on the most vulnerable
- 27. Publish and begin the delivery of a Climate Adaptation Strategy

Our air quality enhances the health, wellbeing and quality of life of our residents

7

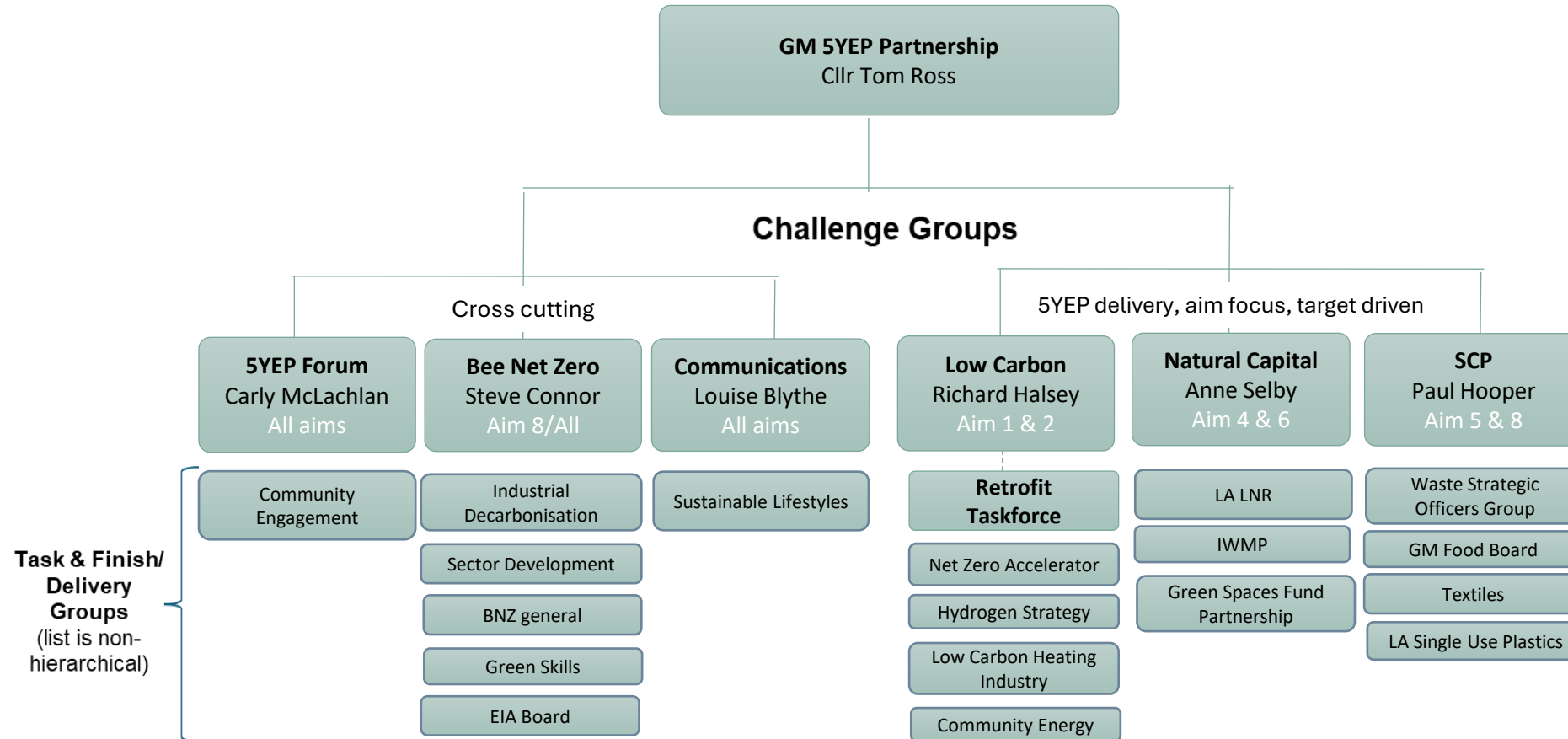
- 28. Reduce emissions that contribute to poor air quality
- 29. Support communities and business to encourage the adoption of behaviours that contribute to improving Air Quality

Our economy will grow sustainably because of the interventions we make to benefit both our residents and businesses

8

- 30. Increase the number of businesses which are more resource efficient, reducing their operating costs, impact on nature and carbon emissions and sustainably innovating their products, processes and services
- 31. Increase the resilience of supply chains, managing and mitigating risks from a changing climate
- 32. Increase the size and productivity of GM's Environment & Low Carbon sector, creating secure, good quality jobs for our residents
- 33. Increase the number of residents who have the skills needed to work in the greener economy

Current position and ongoing challenges



- Continuing to set up task and finish groups, developing membership and work plans.
- Working with a PHD student on private sector engagement in the mission.
- Beginning work on the CATALYSE project and implementing learnings.
- Adopting new meeting structures and feedback loops.



Get in touch with us.

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