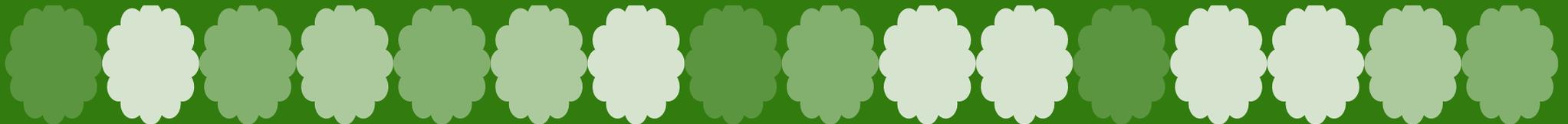
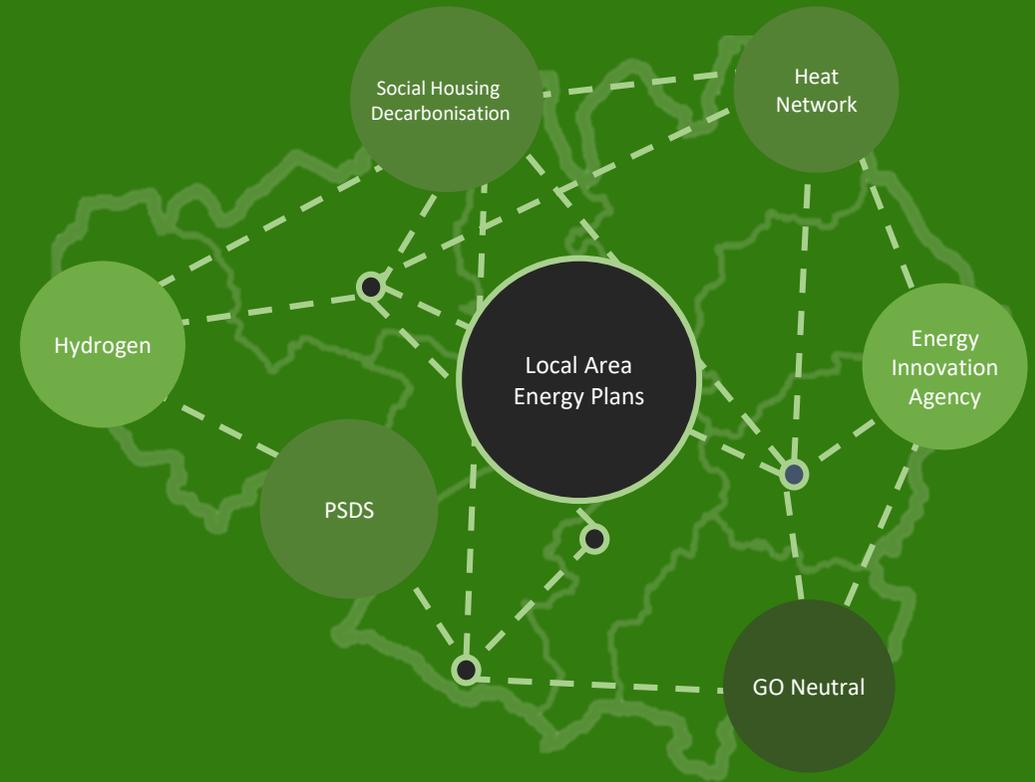


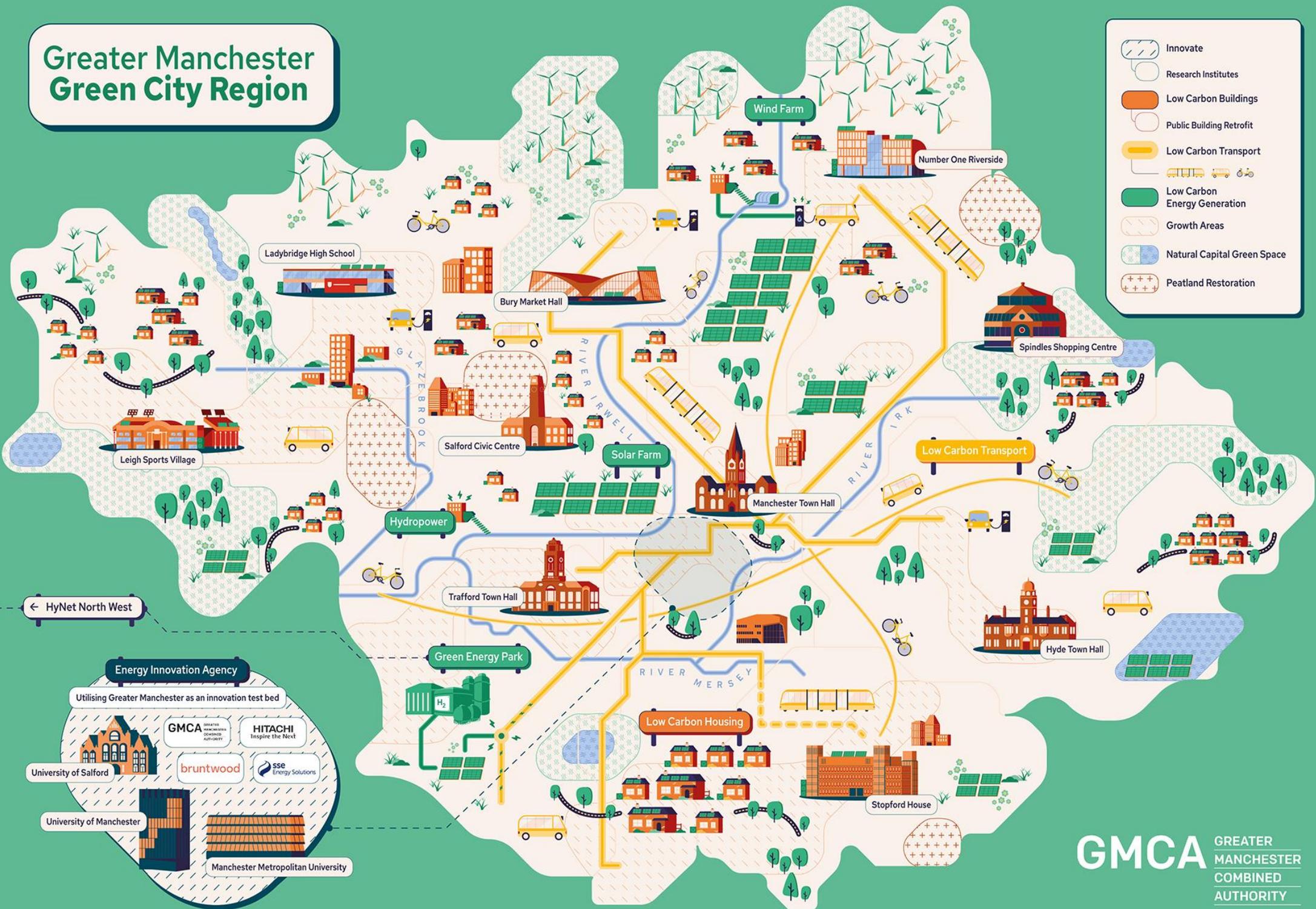
Delivering Our LAEP

Sean Owen, Head of Low Carbon, GMCA



Greater Manchester Green City Region

-  Innovate
-  Research Institutes
-  Low Carbon Buildings
-  Public Building Retrofit
-  Low Carbon Transport
-  Low Carbon Energy Generation
-  Growth Areas
-  Natural Capital Green Space
-  Peatland Restoration



Context and background

Greater Manchester (GM) has set an ambitious target of achieving net zero by 2038

Previous analysis of the Greater Manchester Local Area Energy plans demonstrates;

£64 billion Total investment needed to achieve net zero	<ul style="list-style-type: none">• This figure relates to the entire Greater Manchester region, but excludes vehicle transportation• Source: Local Area Energy Plan
...of which £12.5 billion is within the influence or control of the GMCA	<ul style="list-style-type: none">• £9.5 billion capex, £3 billion O&M• Source: EY analysis of the Local Area Energy Plan

EY were commissioned to deliver a Strategic Outline Business Case (SOBC), setting out the strategic case for change to enable the transition to Net Zero by 2038 across energy systems in GM, delivered in three phases, across Five asset classes



Generation & Storage



Social housing retrofit



Public Sector decarbonisation



Heat networks



Electric Vehicles

Overview of EY Delivery

Phase 1 output

Data Collection, Categorise, Review and Analyse



- ✓ 10+ Datasets (inc LAEP, GMCA, Go Neutral)
- ✓ >200,000 records
- ✓ Complex Analysis

Stakeholder Engagement



- ✓ 12 Weekly Reviews
- ✓ 3 Workshops
- ✓ 3 Local Authorities
- ✓ 25+ Subject Experts
- ✓ IUK Update



	Bury	lncr	Oldham	Rochdale	Salford	Stockport	Tameside	Trafford	Wigan
Public Sector Development	●	●	●	●	●	●	●	●	●
Peak Zones and Networks	●	●	●	●	●	●	●	●	●
Stakeholder Engagement	●	●	●	●	●	●	●	●	●



Strategic Outline Business Case development

Delivery Model longlisting

IMK: Investing in better cities
An approach that works for Greater Manchester

The table lists various delivery models and their scores across different criteria such as 'Ability to scale', 'Rapid deployment', and 'Minimal/targeted public sector costs'.

Critical Success Factors

Critical success factor	Do nothing	Optimise public option	JV	Public sector	Legacy JV access	Private sector with LA/GMC funding
Ability to scale	Red	Yellow	Green	Green	Green	Green
Rapid deployment	Red	Yellow	Green	Green	Green	Green
Minimal/targeted public sector costs	Red	Yellow	Green	Green	Green	Green
Feasibility in public sector financial role: discretionary investment where highly profitable, but general preference to be off-balance sheet	Red	Yellow	Green	Green	Green	Green
Ability to deal with ambiguity in project definition (scope, cost, revenues, profitability, risk etc)	Red	Yellow	Green	Green	Green	Green
Overall RAG	Red	Yellow	Green	Green	Green	Green

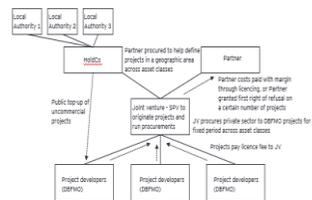
Shortlisting

Potential delivery models

- ✓ LA provides access to land and potential off-taker and earns rent from third party investor
- ✓ Third party investor/PIV owner provides investment to set up SPV to deliver project
- ✓ SPV accesses loans to install PV on land
- ✓ Energy sold to off-taker (e.g. through PPA)
- ✓ Off-taker bills generate income for SPV and investor to pay back loan
- ✓ Off-taker benefits from lower energy costs



Deployment



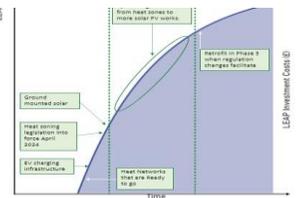
Benefit Analysis

Carbon Abatement	Avoidance of significant economic damage from not intervening on climate change. Swiss Re Institute estimates economic damage at 11% of GDP*	Quantifiable
Consumer Benefit	Cheaper consumer energy bills driven by lower input costs, increased energy efficiency of homes and savings from lower running costs of electric vehicles. Studies indicate installing a full suite of energy improvement measures could be worth up to £1,780 per annum per household, and cavity wall insulation alone could save £220†	Quantifiable
Consumer Benefit	Increased consumer choice and fostering of innovation to the benefit of purchasers in sectors such as Heat and Electric Charging	Quantifiable
Consumer Benefit	Warmer homes for residents: Adjusted life year health benefits from providing warmer homes. National Energy Action estimates the costs to the NHS from treating illnesses caused by cold homes around £1.3 billion every year** and frequently the social and economic costs of cold homes are borne by the most vulnerable	Quantifiable

Financial Modelling

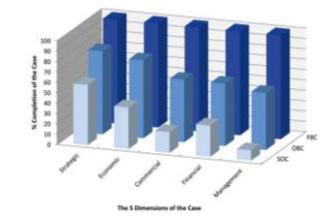
Asset Class	Technology	A Low IRR	B High IRR	C Mean IRR	D Standard Deviation
Generation and storage	Ground Mounted solar	10% of dist. below this figure	90% of dist. below this figure	(A+B)/2	(C-A)*1.25
Heat networks	Multiple Technologies	7.5%	9.0%	7.50%	3.0%
Public sector decarbonisation	Heat pumps	7.5%	15.0%	11.25%	3.0%
Social housing retrofit	Heat pumps	-4.0%	8.0%	2.00%	4.8%
	Heat pumps	7.5%	15.0%	11.25%	3.0%
	Heat pumps	-4.0%	8.0%	2.00%	4.8%

Implementation



Market Engagement

Oil Leadership	Need for central coordinating role, greater leadership, a more strategic approach and the encouragement for local jobbers at local level to use the energy	Task, resources, responsibilities, etc.	Offering clear, specific, genuine opportunities
Public Sector Pump Priming	See how other parts of public sector playing a role in 'pump priming' key interventions where not currently purely commercial	Clearly define what is meant by 'pump priming' before commencement of tendering	Skills and learnings from local jobs, energy network capacity issues
Place based approach	For some key use cases interventions need to build on existing technology in location and coordinate technologies that connected to a company will have greater impact and attractiveness to private sector.	Role in coordinating energy planning and deployment	Current state of knowledge, requirements
Management and Delivery of Market Engagement	All the right things when there is something meaningful to engage with and inevitable progression.	Clear plan for delivery of market engagement	Clear communication and engagement strategy



GMCA – Investing to deliver net zero

GM has an important role to play in supporting the UK's Net Zero ambition and acting as a trailblazer to other UK cities. .

1

This is a unique opportunity at this moment in time

There is an alignment of local and central government ambition, stakeholder interest, and funding and investment opportunities now, which will all be needed to give a realistic chance of reaching net zero in GM by 2038. Regions must work collaboratively, utilising whole systems thinking to realise the net zero transformation

So far GM has secured >£160m in grant funding

2

Acceleration of the programme in GM is needed

At the current pace it is unlikely 2038 targets will be met at the current trajectory. GM is currently behind on its carbon budget target, and forecasts suggest that without intervention now, the city-region will have exhausted its carbon budget by 2024. A significant step-change is required now to give GM a meaningful chance to meet its commitment, coordination alone will not lead to Net Zero

3

Significant investment and intervention is needed

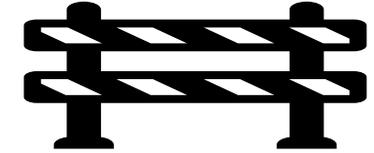
Achieving carbon neutrality by 2038 will require a **significant scale up of investment, front-loaded in the next five years by the public sector**, coupled with **major local policy interventions** to recognise not just the environmental benefits, but the economic and fiscal benefits net zero can provide.

The Public sector will need to inject capital up-front and provide confidence to the market to stimulate substantial private sector investment, creating job and skill prosperity for the region and economic and environmental improvements.

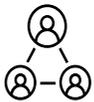


Greater Manchester has a unique advantage in addressing the challenge ahead as it has been formally awarded devolution status, enabling the Mayor to have greater autonomy over public sector spending decisions which will be controlled and managed locally. GM already has an unrivalled approach to partnership and history of convening the ten GM districts to deliver initiatives through partnership working. This set of circumstances uniquely place GM to spearhead and pioneer the net zero transformation.

The Challenge to net Zero for GM



Achieving net zero is complex and inherently difficult, it involves significant change to the ways in way energy is generated, distributed and consumed. The challenge is further exacerbated by the following barriers to delivery.



Finite resource

District budgets are already constrained, finding additional funds for net zero resources and delivery is limited. Efforts are underway in Districts to address the net zero challenge, but budget is a constraint. Finding capacity and capability to develop new commercial and delivery models is time consuming and is often competing with other equally important District and Business-as-usual priorities.



Industry maturity

Industry maturity: Net zero is a nascent industry, both in terms of the market capacity, technology and skills required to deliver. Ensuring that the workforce and supply chain have the skills capacity to deliver net zero is critical to solving the problem. Innovation is not possible as the market is not yet mature enough to disrupt or reform. The market needs confidence that there is a significant enough opportunity to invest at a scale that would generate commercial returns and enable commitment to build a resilient, skilled supply chain as a result



Asset class complexity

Each asset class has different commercial characteristics and capital requirements. To deliver the c.£12.5bn investment, a range of commercial models will be needed, some of which remain largely untested to date. There is no obvious “one size fits all” model that generates expected investor returns. The GM public sector partners have a role to play to ensure that net zero transition is fair and equitable for all residents in the city-region and to avoid cherry-picking from private investors who will also favour those projects that are commercially viable and generate a greater profit



Public sector funding

Public sector funding: Current estimations indicate that the scale of public funding required could be as much as £5bn to £10bn of the c.£12.5bn under the public sector's influence/control. In the current funding landscape, there is insufficient public money available in GM alone to meet the investment required to deliver the LAEP.



Competition for funding

Competition for funding: Due to the nature of government funding, both the Districts and GMCA are often competing to access the same funding provisions. This in turn shapes project definition as a response to funding, rather than the requirement driving the funding ask. This may be somewhat mitigated by the “Single pot” approach that GM is moving too, however there remains a significant shortfall in the level of public sector funding available needed to deliver the LAEP plans and attract commercial investment at scale. .



Risk appetite

Risk appetite: There are some successes in net zero, notably in the Nordics in heat networks for example, but limited experience in the UK at a national level. Furthermore, there have been some public failures for example Robin Hood Energy, run by Nottingham Council. Risk appetite will play a considerable role in delivery models and investors will not be inclined to take risks without guarantees or pump priming from the Public sector

Our Analysis

The GMCA has set a target of achieving net zero across the Greater Manchester ('GM') region by 2038. The scale of this challenge is expressed in the Local Area Energy Plan developed by Catapult, with the headline messages being that across GM and all asset types (excluding transport), the total investment needed to achieve net zero is £64 billion.

£64 billion

Total investment needed **to achieve net zero**

...of which £12.5 billion

is within the **influence or control of the GMCA**

...of which £5-10 billion

is **required in public sector funding in order to crowd in £2.5-7.5 billion from the private sector**

Source: EY analysis based on the Local Area Energy Plan and publicly available figures on typical project IRRs for each asset class, discounted to account for the likely fall in commerciality given the scale of infrastructure optimized against net zero objectives (rather than commercial returns)

- This figure relates to the entire Greater Manchester region, but excludes vehicle transportation
- Source: Local Area Energy Plan

- £9.5 billion capex, £3 billion O&M
- Source: EY analysis of the Local Area Energy Plan

- Based on a subsidy top-up model, our indicative analysis suggests a significant investment from the public sector will be needed to enhance the commercial performance of many of the assets associated with the net zero transition
- The capex investment needs to be made in the next 5 years to “pump prime” the transformation and provide confidence (through funding and possible other measures such as guarantees) to the market and encourage investment by the private sector to realise economic, skills and job creation
- Without significant investment at pace, the net zero target will not be met
- Wherever projects are commercial, no subsidy is needed but there remains a critical role for the public sector
- Public sector investment is also needed to incentivize the private sector contribution to the remaining £51.5 private sector investment that LAEP outlines, and the CA will have an enabling role to attract this investment to GM

Summary messages from each Case

STRATEGIC CASE

- ▶ **Compelling case for change regarding Net Zero investment to meet 2038 target** using LAEP as basis
- ▶ GM's track record through devolution demonstrates ability to deliver and make use of devolution

ECONOMIC CASE

- ▶ Range of options over extent of LAEP that GMCA focuses on delivering
- ▶ **£12.5bn focus captures asset classes under direct control or significant influence**
- ▶ Summarises key benefits (including Wider Economic Benefits) and risks

COMMERCIAL CASE

- ▶ **A single GM wide delivery solution is not the right model-** the scale, range and differential progress across GM mean that having a single delivery solution and partner would fail to adequately meet GM's needs and offer the best value
- ▶ There will be a range of commercial models – a matrix approach focusing on a combination of place and assets classes
- ▶ Initial Commercial structures developed that allow roles for development vs delivery/financing
- ▶ Public top-up is preferred to maximise the private sector funding of the £12.5b LAEP against the public funding needed.

FINANCIAL CASE

- ▶ In line with the models set out in the Commercial Case, we expect funding for these projects to come from public and private sector sources, for which **public funding requirements could be between £5bn to 10bn, in order to crowd in £2.5 – £7.5bn from the private sector**
- ▶ We have illustrated the range of public sector funding requirements by considering a normal distribution of project profitability outcomes against a set of target IRRs sourced from recent deals EY has advised on

MANAGEMENT CASE

- ▶ **GM to take a lead role for coordination, governance, monitoring and assurance of delivery**, collaborating initially with **Districts** on their priority projects to efficiently progress net zero plans in a coordinated manner
- ▶ **Significant resource** is expected to be needed, in different phases, to coordinate activity across a portfolio of programmes and projects. The role of the CA is expected to flex over time with front-loading expected to mobilise effort.
- ▶ A range of revenue costs also requires consideration in a programme of this size and scale. Typically, revenue costs on complex programmes can range from 3– 7%. In pathfinding programmes in particular, the revenue costs must include considerations of the requirements for; professional services, external legal support, project management and governance, technical support and advisors for example, feasibility and in this instance project pipeline design and definition over a successive number of years.

Market Engagement

Demonstrating overall deliverability is critical in giving confidence net zero in GM is real

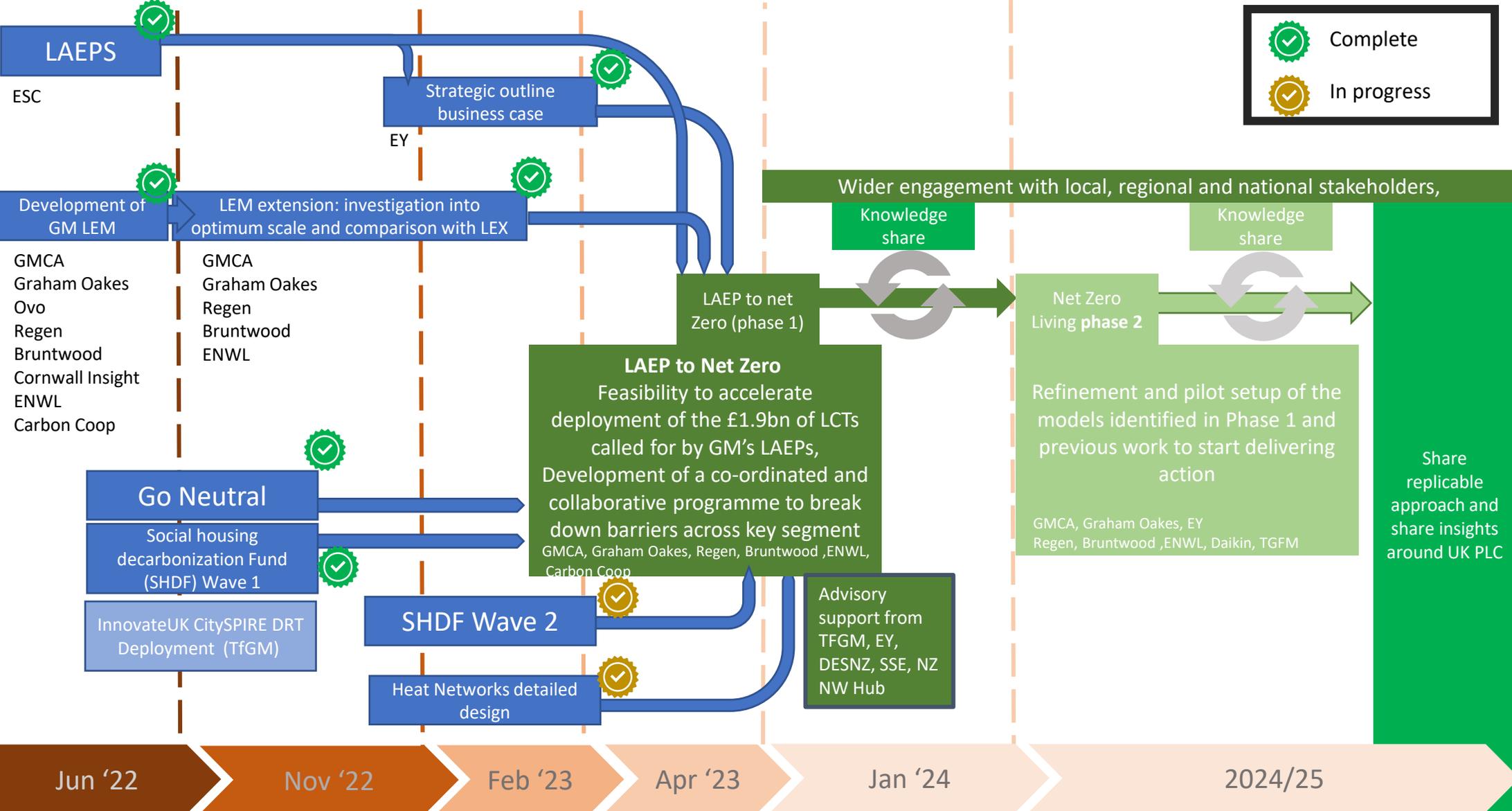
		Enablers	Barrier
GM Leadership Role	<ul style="list-style-type: none"> ▶ Market identified need for central coordinating role, greater leadership, a more strategic approach and the encouragement for use of policy/levers at a local level to up the urgency 	Scale, consistency, Confidence in CA	Differing District capacity; piecemeal opportunities
Public Sector 'Pump Priming'	<ul style="list-style-type: none"> ▶ See one vital role of public sector playing a role in 'pump priming' key interventions were not currently purely commercial ▶ Enabling activities to help unlock investment, from making sure the early-stage development work is done to demand guarantees/enablers activities. 	Certainty of public sector demand Better understanding of future demand	Skills and supply chain Lack of visible pipeline Network capacity issues
Place based approach in addition to exclusive assets focus	<ul style="list-style-type: none"> ▶ For some key net zero interventions need to avoid looking at technology in isolation and coordinate technologies that combined in a geography will have greater impact and attractiveness to private sector. 	Role in coordinating, policy opportunities (e.g., planning) to drive right behaviours	Current lack of incentives/ requirements
Management and Timing of Market Engagement	<ul style="list-style-type: none"> ▶ At the right stage when there is something meaningful to engage with and investable proposition. 	Sufficient clarity on pipeline and approach to make engagement meaningful	Uncoordinated engagement from across Districts

Next Steps

- **July 23:** Combined Approval is being sought to further develop the opportunity presented from strategic case through to collaborative delivery
- **September 23:** Submission into Innovate UK Net Zero Pathfinder Phase 2, to support regional, district and neighbourhood approaches
- **Autumn 23:** Subject to CA approval, commence procurement to engage stakeholders, develop the different thematic areas / cases, to understand the relevant mix, model and or scale.
- **February 24:** Subject to a successful Innovate UK submission commence wider development

Our Journey to Date and Proposed Going Forward

The LAEP to Net Zero phase 1 project ecosystem: builds from existing programs and will accelerate future delivery



Recommendations

Members are requested to:

1. Note the proposed approach to delivering the outcomes from the GM Local Area Energy Plan.
2. Endorse the investigation and development of outline business cases to accelerate inward investment and delivery.
3. Endorse the development of regional delivery structure, operating model and required capacity.
4. Endorse the need for additional dedicated resource to support development of new commercial and finance solutions.
5. Endorse GMCA submitting and acting as the accountable body for a circa £5m bid to Innovate UK Net Zero Living: Pathfinder Places, to support delivery of the above.