

Greater Manchester Combined Authority Net Zero 2038

Strategic Outline Business case
Executive Summary

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Overview

Greater Manchester ('GM') has set an ambitious target to achieve net zero by 2038. This will require a step-change in both scale and pace of delivery. However, GM has the track record of delivery of complex and innovative programmes to meet key policy objectives and it now has a stronger platform to deliver on net zero through the deeper level of devolution recently announced.

The GM Local Area Energy Plan ('LAEP') provides a strong foundation setting out a set of suggested interventions for the energy infrastructure changes needed to enable GM to become carbon neutral by 2038. The LAEP analysis indicates that GM investment required to 2038 is £64.4bn. Of this total figure, the required LAEP investment that is in the local public sector's significant control or influence totals £12.5bn and this forms the scope of this Strategic Outline Business Case ('SOBC').

The public sector is likely to need to contribute up to £6.3bn of the £12.5bn in order to leverage in £6.2bn of private sector investment. This will also enable the delivery of projects that will, in some cases, act as pathfinders for the private sector for those projects outside of the public sector sphere of influence. Furthermore, the level of public sector intervention required is likely to be higher initially as the evidence of commerciality in projects is proven to the private sector. It is critical to the overall ambition that the public sector is able to invest first, both directly and indirectly, providing confidence to the private sector and building the market.

To deliver this investment Greater Manchester recognises the need to innovate; deliver simultaneously across the asset classes identified in the LAEP at a neighbourhood, District and GM-wide level; and engage innovatively with the private sector market in a range of commercial structures across the lifecycle of delivery.

The SOBC identifies that, alongside significant funding commitments, an increase in capacity and capability across the GMCA and Local Authority teams will be needed to deliver the programme of work, starting with the appointment of senior level resource to drive the work forward. GM will need to create new ways of delivering net zero to match the scale of need at a city region level and, in doing so, can act as a trailblazer in creating approaches and models that can be replicated elsewhere nationally.

The strategic imperative

Greater Manchester has set an ambitious, science-based target of achieving carbon neutrality by 2038, 12 years ahead of the national net zero target of 2050. Launched in March 2019, the GM Five-Year Environment Plan ('Five-Year Plan') sets out how this will be achieved and associated actions. The Five-Year Plan establishes the vision of each of the ten Districts transforming their infrastructure, homes, and buildings to be part of a smarter local energy system.

Reaching carbon neutrality is more than just an environmental issue. It will drive a range of specific and wider economic benefits, which provides the opportunity to drive significant economic growth as well as positively impacting the lives of people in GM and the wider region through high quality jobs in green industries, improved places to live and work, better health outcomes and helping to address inequalities that have persisted in the city region for too long. By leading at scale and pace, GM has an opportunity to take a national lead in reinvigorating regional manufacturing, supply chain and skills development as well as accruing the benefits of net zero as early as possible. Decarbonising the city region provides GM with an unparalleled opportunity to address inequalities within the city region, in addition to supporting national efforts to level up across the UK.

GM has an important role to play in support of the UK's net zero ambitions. In part, because of its scale, and therefore its relative impact, but also because of its advanced position compared to other UK cities in terms of net zero delivery. When coupled with its track record of being able to navigate through complex development programmes successfully, GM can act as a model for other towns, cities, and city-regions to follow. GM can demonstrate how to move from commitment through to planning, implementation and hence delivery of decarbonisation goals and, in doing so, meet wider levelling up objectives. There are other factors which strengthen GM's position relative to its peers, including strategic alignment with key ecosystem stakeholders, such as energy networks.

In recognition of the need to move from this vision to a clearer plan of action, the Greater Manchester Combined Authority ('GMCA') supported each of the ten GM Districts to develop a LAEP, which sets out a pathway for the energy infrastructure changes needed to enable GM to become

carbon neutral by 2038. GM is at an advanced position in terms of Local Area Energy Planning being the first in the country to produce and adopt LAEPs. Whilst many local areas in the UK have set a commitment to achieve carbon neutrality or net zero more widely, few have detailed plans on how they will get there. This joined-up approach across GM at the planning stage also indicates a way forward in terms of a greater degree of integration at a delivery level particularly focused on 'whole systems' approaches where relevant.

The LAEP provides a platform upon which this SOBC has been developed to start to consider the scope and approach to delivery, which will be further developed in future OBCs.

The estimated total capital and operational costs to deliver the GM LAEPs is £64.4bn. Of this, the required LAEP investment that is predominantly in the local public sector's control or influence totals £12.5bn and is the primary focus of this SOBC. Within the public sector's control or influence are projects and programmes across five asset classes: Generation and Storage; Decarbonisation of Public Sector Buildings; Social Housing Retrofit; Heat Networks/Heat Zones; and EV Charging Infrastructure.

There has been significant success to date in acquiring funds (in the form of capital grants), to support GM's 2038 ambition and therefore progressing associated feasibility studies and projects across a range of net zero projects. However, funding to date has been sub-scale compared to the LAEP requirement. This lack of scale and the piecemeal nature of the grant funding programmes does not allow for a strategic, place-based approach to the delivery of the net zero ambition.

Based on the latest emissions data, GM is tracking above where it should be in terms of carbon emissions, and it is notable that the gap has been increasing year on year. Achieving carbon neutrality by 2038 is therefore hugely ambitious and challenging and, if the current trend in GM is to be reversed, will require a significant scale up of activity, coupled with major local policy interventions, investment by government and industry and both technology and business innovation. Without meaningful intervention – at a scale to

match the challenge in hand - it is apparent the market will not deliver the scale of investment required to enable GM to be carbon neutral by 2038.

Delivering GMCA's scale of ambition in relation to net zero and in the timescales agreed has not been done before in the UK. There are a number of challenges, ranging from funding requirements and a need for innovative commercial models through to industry capacity that will need to be overcome if

Greater Manchester is to achieve its objectives. GM, working closely with central government and the private sector, will need to innovate and act as pathfinder across a range of issues.

In particular GMCA, working closely with the ten GM Districts, will need to focus on what it can do differently to deliver at scale and with pace.

The opportunity in Greater Manchester

The devolution of powers from central government to GMCA, significantly enhanced through the recently announced Trailblazer Deeper Devolution Deal, provides the platform to enable Greater Manchester to deliver both innovatively and at scale. Greater Manchester has already demonstrated its readiness and ability to make active use of devolution powers, including the use of the Mayoral Precept, for example through being a trailblazer in the reform of bus services and introduction of bus franchising.

The Trailblazer Deeper Devolution Deal devolves responsibility for a clear set of policies and functions to GMCA to support economic growth, alongside enhanced accountability with clear outcomes for delivery. This will be underpinned - from the next Spending Review - by a single funding settlement, to invest in local priorities. The deal acknowledges that 'this will release GMCA to get on and deliver for Greater Manchester, to try innovative new policy approaches, to drive forward the local economy, and to be better held to account for delivery.'

The deal specifically includes provision for the devolution of net zero funding from 2025 for retrofit of buildings as part of the GMCA single department style settlement. This will be a GM allocation from national funding pots which we already know will be insufficient to deliver GM's ambitions. Local contributions will be needed to achieve the necessary scale and pace of delivery required as part of a wider GM Investment Plan to drive city region growth.

As part of the development of the SOBC, GMCA engaged with 15 organisations reflecting a representative spread of developers, investors, contractors, and other interested stakeholders. The purpose of the engagement was to explore opportunities and barriers to delivering GMCA's net

zero objectives. There were clear themes from the market feedback of a strong level of interest in the opportunities arising in Greater Manchester, a high degree of confidence placed in Greater Manchester to deliver given its track record more generally but also of the need for a joined-up approach to net zero delivery across Greater Manchester.

There were a number of barriers which undermine the ability of the private market to deliver the net zero target without intervention raised in the engagement. These included: lack of clarity over the forward roadmap and pipeline across Greater Manchester; the need for joined up leadership and resourcing across Greater Manchester; the need for stronger policy levers in certain areas (e.g. heat zoning, planning requirements regarding solar etc); that without some form of public sector investment many of the projects are not viable from an investment perspective, and issues around a lack of skills and supply chain. The feedback was clear that there is a need for GM to demonstrate a region wide pipeline of investable propositions, providing not only a breadth of opportunities for funding but also that there is a deliverable scale which gives the private sector confidence to build skills capacity and invest in innovation.

The confidence of both central government and the market in Greater Manchester's ability to overcome the challenges faced in both accelerating the pace but also scale of delivery has led to GM recognising that as well as focusing on delivery at a neighbourhood and District level it also needs to consider approaches to delivery at a GM level. The GMCA and all ten Districts will need to work closely in partnership adopting different delivery models to suit the scale and complexity of the different asset class interventions needed to meet the net zero target.

The approach and challenges that GM will address moving forwards

GM will need to focus on developing a range of fit for purpose commercial models for delivery, reflecting the types of projects that it will deliver across the five asset classes and the model for delivery (e.g. neighbourhood through to region wide approaches). Given the scale and range of asset classes and the fact that to deliver at pace GM needs to use a range of approaches, a single all-encompassing commercial model would not be desirable or achievable. The Commercial Case sets out a number of models that will form the basis of future development ranging from a Delivery partner model through to a licensing/access regime using a public-private partnership approach such as a concession, franchise, or rights auction.

Given the experience within GM, both at GMCA and District level, of delivering a range of complex projects, GM will seek to innovate its commercial approach and, in doing so, will need to consider how best to structure models to reflect the distinct phases of the project life cycle from development, through to construction and then operation.

Through these commercial models, GM will need to leverage as much private capital as possible in the delivery of net zero objectives. However, it is important to recognise that the nature of the asset classes that the public sector is in control of or can influence directly, is likely to require a significant level of public sector grant funding to achieve viability. Based on the current understanding of the market and the anticipated levels of commercial returns that would be expected by investors,

The public sector is likely to need to contribute up to £6.3bn of the £12.5bn in order to leverage in £6.2bn of private sector investment. This will also enable the delivery of projects that will, in some cases, act as pathfinders for the private sector for those projects outside of the public sector sphere of influence.

Innovative approaches need to be developed based on specific projects over the next few months, including as part of the Innovate UK ('IUK') Net Zero Living Places: Phase 2 work where a number of different delivery approaches are being developed in parallel under a single joint GM

project. These include a neighbourhood-based scheme integrating different net zero technologies around a unifying development in Manchester City Council's Wythenshawe Forum scheme; a District level pilot in Oldham focused on a District-wide community-based approach; and, at a GM wide level, a focus on more strategic approaches to delivery across the region for example in areas such as heat networks and retrofit. Each of these will provide valuable information and lessons learnt to inform the overall Net Zero strategy and GMCA will support the co-ordination and sharing of the learning across Greater Manchester.

As part of this work GM will place particular focus on how best to address the non-technical barriers to delivery. In considering innovative approaches, GM will be considering financial, service and market innovation to overcome these barriers, as well as partnership models that encourage and give assurance to suppliers and installers to invest and build the skills required.

Delivering at the scale and pace required will require strong collaborative working between GMCA and all Districts as well as sufficient funding and resource to meet the scale of the programme of work required. GMCA will use its convening powers to work with, as well as support, Districts and this is likely to include additional delivery capability at the Combined Authority ('CA') level as well as District level.

It is clear that there is a need for a step-change in the capacity across the public sector in Greater Manchester to deliver, but that this should also act as a catalyst for similar capacity building amongst the private sector who will be fundamental to much of the development and delivery of the net zero projects.

THE STRATEGIC CASE

The Strategic Case

Greater Manchester ('GM') has set an ambitious target to achieve net zero by 2038. This will require a step-change in both scale and pace of delivery. However, GM has the track record of delivery of complex and innovative programmes to meet key policy objectives and it now has a stronger platform to deliver on net zero through the deeper level of devolution recently announced.

The Case for Change

The Case for Change sets out the current situation, what interventions may be required, what outcomes are expected and how these fit within the wider government policies and objectives.

The Case for Change is driven, in part, by the policy objectives of both Central Government as well as Greater Manchester's policy on Net Zero. In 2018 GM set an ambitious, science-based target of achieving carbon neutrality by 2038, 12 years ahead of the national net zero target of 2050. This was followed in 2019 by the introduction of the Greater Manchester Five-Year Plan.

The spending objectives for this business case have been developed to ensure that the outcomes required by key stakeholders have been considered and included.

The spending objectives for this SOBC are set out below:

1. Deliver on GMCA's target of being carbon neutral by 2038;
2. Enable GMCA and Districts to use consistent commercial delivery models for delivery of projects;
3. Establish the North-West region as a leader in clean energy and city-wide transformation to net zero;

4. Attract significant private sector investment to drive the decarbonisation required;
5. Deliver wider economic benefits such as investment in the region and increased Gross Value Add ('GVA'); and
6. Deliver wider social benefits such as reduction in fuel poverty, job creation, access to new jobs and enhanced skills and capabilities.

The GM challenge is a pioneering one of driving carbon neutrality at scale. It offers a case for national learning where, if successful, the Combined Authority model can be deployed or adapted to the rest of the UK.

GM has taken the lead nationally amongst Local and Combined Authorities in driving the carbon neutrality challenge and setting a target far more ambitious than most other regions. However, in recognising the significant challenge around the 2038 target, the GMCA needs additional support from central government, other Districts, and the private sector to deliver this ambition.

Work undertaken to date

Since the commencement of the Five-Year Plan period (2019-2024) GM has been very successful in bidding for a range of Central Government grant programmes, particularly focused on the decarbonisation of public buildings, social housing retrofit and ground mounted solar. To date GMCA has been awarded over £170m in grant funding.

However, in the context of the investment need identified through the LAEP even this level of funding is a small percentage of the total requirement to meet the Net Zero

target. Additionally grant funding of this nature tends to lead to piecemeal investment which doesn't allow for a strategic approach and therefore reduces its impact.

This is demonstrated by the fact that GM's emissions remain behind the trajectory needed to achieve the 2018-38 carbon budget, with the 9.9 Mt CO₂ cumulative 'overspend' for 2018 to 2020 already higher than budgeted emissions for the whole of 2021.

Drivers for Change

Why is the current approach not working?

Districts are working in a decentralised way to meet individual obligations but are encountering similar challenges such as:

Funding: LAEP plans set out the significant (£12.5bn) scale of the investment required, but commerciality is not considered. In some asset classes, for example social housing, there is limited return for investors, given that the benefits of energy savings are enjoyed by the tenants, and therefore the investor has no income stream to repay its investment. Without central government support, it is difficult to fund aspects of net zero.

Reactive vs Proactive: The nature of public funding means that Districts and the CA often will focus on responding to a specific need, rather than proactively defining the project pipeline. Coupled with resourcing constraints, funding often leads project definition rather than vice versa, which often leads to reactive planning.

Capacity & Capability: District budgets are already constrained, finding additional funds for net zero resources and delivery is limited. Generating a project pipeline takes considerable time and effort in one District alone, with a multiplier of ten Districts this becomes a considerable resource demand and is currently not a coordinated resource effort.

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. 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.

Asset class complexity: each asset class has different commercial characteristics and capital requirements. The private sector favours net zero projects which are commercially viable and generate a profit. The commercial case further explores complexity in the asset classes and barriers to delivery.

Implementation: Delivery models are inherently complex, especially given that some of the technologies are relatively new. Some asset classes are more mature, but heat networks for example are complex infrastructure projects which are not necessarily replicable for economies of scale.

Skills: there is a significant skills gap in the sector, which requires addressing to deliver to the 2038 target. There are skills and supply-chain shortages in the workforce which need addressing to deliver to the scale required. 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. The lack of skills in this sector is a key barrier to investment within GM by the private sector

Policy & Regulatory barriers exist at local and national levels. Current government funding is piecemeal and restrictive in output, and time-bound rather than delivering outputs. Other jurisdictions (such as the USA) are more proactive in stimulating net zero projects and growing this sector of the economy.

The above challenges demonstrate that, for Greater Manchester to meet its environmental ambitions and deliver on the ambition set out by the LAEP, public sector intervention is required.



Private Sector Perspective

There are number of issues which currently undermine the ability of the private market to deliver the net zero target without intervention. These include lack of clarity over the forward roadmap and pipeline across Greater Manchester; the need for joined up leadership and resourcing across Greater Manchester; the need for stronger policy levers in certain areas (e.g., heat zoning, planning requirements regarding solar etc); that without some form of public sector investment many of the projects are not attractive from an investment perspective and the issues around skills and supply chain.

Private sector readiness is also a factor. While our market engagement exercise demonstrated a high level of interest in the sector, investors and the supply chain will need time to mobilise funds and resources to deliver on the scale required for this programme. This reinforces the importance of a clear roadmap and pipeline to enable the private sector to plan accordingly.

Local Area Energy Plans (LAEPs)

The GM LAEPs, owned by each District and developed by Energy Systems Catapult ('ESC') in consultation with a wide group of stakeholders, aim to outline the transformation required by Districts across energy infrastructure, buildings, and people's homes, in order to move to a smarter energy system. The LAEPs take a whole systems approach and are a mechanism for translating vision into what practically needs to happen within each District across different asset classes such as ground mounted solar, heat networks and EV infrastructure. The aim is to identify the most effective route for the local area to contribute towards meeting the national net zero target, as well as meeting its local carbon neutrality target. In addition to the LAEPs that were developed for each of the ten GM Districts, another over-arching LAEP was developed for the GM city-region as a whole.

GM is at an advanced position in terms of Local Area Energy Planning however these are still suggested interventions in areas and there is a lot of work required to deliver projects that achieve the ambitions set out in the LAEP. Whilst many local areas in the UK have set a commitment to achieve carbon neutrality or net zero more widely, few have detailed plans on how they will get there. The GM city-region is the first in the country to produce and adopt LAEPs, setting out a suggested set of interventions for the energy infrastructure changes needed to enable GM to become carbon neutral by 2038.

GM LAEP Scenarios

As stated in the GM LAEPs, a variety of energy system scenarios are possible to deliver GM's future energy vision. Four main scenarios were considered within the GM LAEPs based on plausible and affordable futures and based on available information. Two scenarios were then more deeply analysed to inform the GM LAEPs.

This SOBC makes use of the Primary Scenario investment and cost data used to inform the GM LAEPs. This scenario focuses on meeting the carbon budget and carbon neutrality target by making use of proven measures within GM's local control where at all possible.

The second scenario, the other scenario explored in depth as part of the GM LAEPs, assumes hydrogen for residential heating and non-domestic buildings becomes available in Manchester from 2030 onwards, aligned to Hynet Phase 3 and the repurposing of the gas grid to hydrogen.

SOBC Scope

LAEP data analysis, drawing on ESC datasets, indicates that GM investment required to 2038 is £64.4bn. Of this total figure, the required LAEP investment that is in the local public sector's significant control or influence totals £12.5bn. The scope of this SOBC is focused on this £12.5bn estimated investment requirement.

These are the five asset classes which are the focus of this SOBC and a breakdown of investment needs by asset class is in Table 1 below.

The remainder of the £64.4bn total capital and operational investment - £51.9bn - reflects investment expected to fall outside of the local public sector's direct control or

significant influence. This also presents a challenge to the wider LAEP delivery, as it assumes a significant investment by the private sector. This includes costs associated with energy network upgrades, retrofit of private non-domestic buildings and private homes as well as solar PV on private property. It is likely that the public sector will have an enabling role to facilitate the private sector investment, for example influencing citizens on domestic retrofit. The transformation relies on both public and private sector partnerships and collaboration and in particular the public sector up-front CAPEX will create the conditions and market confidence to drive skills and job creation which consequently benefits the private sector.

Table 1: Investment required per asset class by responsible party

Asset class	Predominantly local public sector control or influence (£m)	Predominantly outside local public sector control or influence (£m)	Total (£m)
Generation and Storage	980	6,890	7,870
Heat Networks / Heat Zones	4,480	-	4,480
Public sector / Non-Domestic Decarbonisation	1,200	23,840	25,040
Social Housing/ Domestic Retrofit	5,640	21,170	26,810
EV Charging Infrastructure	190	-	190
Total	12,490	51,900	64,390



ECONOMIC CASE

Economic Case

The SOBC Economic Case considers the longlist of potential options for intervention that meet the objectives of the Strategic Case, before summarising the approach to appraise these options using Critical Success Factors ('CSFs'). The case contains:

- ▶ The longlist of options, utilising available data to determine investment, asset classes delivered, indicative carbon abatement, delivery implications and risks.
- ▶ An appraisal of the options against the CSFs, determining the four options to be progressed to the Outline Business Case ('OBC') for full economic appraisal.
- ▶ For the current preferred option, determines the prospective economic benefits and risks of proceeding in this scenario.

Long-list options developed

The following options to deliver against the LAEP have been developed:

- ▶ Option 1: Business as Usual ('BAU'): Do not invest in any of the asset classes that deliver against the LAEP.
- ▶ Option 2: No subsidy: Select and deliver the asset classes or projects that have the highest commercial viability for the private sector.
- ▶ Option 3: Public sector control: Select and deliver only those projects fully in the autonomy of the public sector: social housing retrofit and public sector decarbonisation.
- ▶ Option 4: Five-year programme view: A cost envelope that funds all asset classes until 2030.
- ▶ Option 5: Accelerated carbon impact option: Select and deliver only the asset classes with carbon abatement impact prior to 2035 irrespective of commercial viability or funding source.

- ▶ Option 6: Partial LAEP requirement funding: Select and deliver projects in all asset classes under GMCA control or influence to a maximum threshold of £6bn.
- ▶ Option 7: Full LAEP requirement funding: Select and deliver in full all asset classes under GMCA control or influence to full £12.5bn, as identified in the LAEP.

With the exception of Option 7, all options result in an under-delivery of the LAEP ambition and consequently at best undermine the 2038 net zero ambition, or worse could be a fundamental reason for GM missing the target.



Critical Success Factors

The long list of options has been appraised against a number of agreed CSFs as set out below:

- ▶ Strategic fit to GM net zero ambitions
- ▶ High confidence that supplier capacity (capability) already exists or would be created to meet delivery timelines
- ▶ Public value and legacy will be generated for the region
- ▶ If the pursued option is financially attractive to private and public sector partners
- ▶ If the pursued option is achievable

At this stage Option 7: full LAEP delivery has been selected as the current preferred way forward. The options appraisal conducted at SOBC identifies Option 7 as the highest

scoring against the CSFs and best meets the GMCA’s strategic objectives. In particular, it delivers against all asset classes identified in the strategic case but will require the highest level of public sector intervention to meet strategic objectives.

The commercial, financial and management cases in the SOBC explore the delivery of this option.

The following framework details the benefits of proceeding with the preferred Option 7:

Table 2: Preferred option benefits summary (see Economic Case for more detail along with associated risks)

Carbon abatement	Avoidance of significant economic damage from not intervening on climate change
Consumer benefit	Cheaper consumer energy bills driven by lower input costs and increased energy efficiency of homes.
Consumer benefit	Increased consumer choice and fostering of innovation to the benefit of purchasers in sectors such as Heat and Electric Charging.
Consumer benefit	Warmer homes for residents: Adjusted life year health benefits from providing warmer homes.
Consumer and non-domestic benefit	Added value to homes and commercial property research indicates a green premium on energy efficient properties of 10%, and on office rent per square foot of 26% ¹ .
Non-domestic benefit	Cheaper bills for industry
Economic Growth - Jobs	<p>A green jobs revolution through delivery of the LAEP will stimulate significant jobs in four ways:</p> <ul style="list-style-type: none">▶ Established green sectors such as retrofit or heat pump installation will experience accelerated aggregate growth rates.▶ Existing other sectors such as automotive and energy generation will generate new jobs in transition delivery.▶ The LAEP intervention will influence job creation in adjacent new sectors such as resilience, hydrogen.▶ Cross-cutting jobs will be created in data, project management, education, and communication.

¹BREEM Rates Properties, Savills, 2022

Economic Growth - Output

The Skidmore Review identifies a global market opportunity for UK businesses in net zero of £1trillion across the 2021 to 2038 period.²

Economic Growth - Skills

The LAEP offers a generational opportunity to drive up the regions skill base and facilitate just transition from emitting industries. One in five jobs are expected to require skills which may experience demand growth as a result of the transition to net zero. Successful execution of the LAEP would achieve significant new and transition skills capacity across the region.

The preferred option has the potential to generate significant social value as an effectively delivered LAEP could impact every resident and business in GM. Benefits span from achieving a just transition that targets securing benefits for the least prosperous, through to a generational impact on environmental and manufacturing skills. This will require defining social value benefits across the Programme in the Business Case and proactively integrating these into the fabric of the Programme, for example social value cemented as a mandatory supplier commitment through any procurement process.

The preferred option should also drive a range of wider benefits. These include GM being a catalyst for driving down cost for the wider net zero system through to energy security and self-sufficiency. Importantly it should support delivery on the ambitions of the Levelling Up White Paper

and Levelling Up and Regeneration Bill, by delivering job creation, increased productivity and better health outcomes across the city region. The opportunity to drive job creation and skills development spans the green value chain from design and manufacture through to installation and maintenance. This should be complemented by a focus on investment and innovation in associated manufacturing and supply chains. Overall the clustering effects provided by the certainty and continuity of GM commitment to net zero and delivery of the LAEP could drive down energy costs for the wider region, contribute to the UK’s leadership and competitiveness in low carbon technologies

Through targeting a more active role for citizens, communities, and the private sector in driving up economic and social outcomes Levelling Up policy ambitions are underpinned by the effective delivery of the LAEP.



²Mission Net Zero, HM Government, (2023, [Link](#))

COMMERCIAL CASE

Commercial Case

Project groups

The commercial characteristics of the five asset classes included in the current preferred option identified in the Economic Case are allocated to three project groups, each with common commercial characteristics:

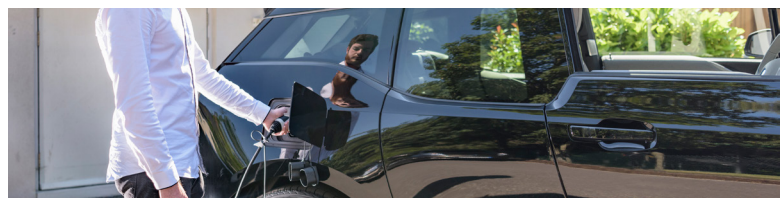


Table 3: Project group descriptions

Project Group	Asset classes	Key commercial characteristics	Implications for government role
Social projects	<ul style="list-style-type: none"> Decarbonisation of Public Buildings Social Housing Retrofit 	No direct income stream	<ul style="list-style-type: none"> Coordination Funding
Network projects	<ul style="list-style-type: none"> Energy networks / Heat Zones 	Natural monopoly. Revenue can be sourced from offtaker and is likely to cover operating costs	<ul style="list-style-type: none"> Coordination Regulation Guarantees Funding
Commercial projects	<ul style="list-style-type: none"> Generation and Storage EV charging infrastructure 	Revenue can be sourced from offtaker and is likely to cover total costs	Coordination Guarantees

The private sector market naturally favours net zero projects which are more commercially viable and generate a greater profit:

- **Social projects:** Programmes to retrofit social housing and decarbonise public sector buildings attract up front construction costs without a ready income stream as these schemes do not generate power to be sold on to customers. Rather, they lead to long term energy cost savings for building occupiers, which are difficult to monetise from social housing tenants and public sector bodies. This means a high level of subsidy and / or grant funding will be required to deliver these projects.
- **Network projects:** While heat network / heat zone technology is well established, the regulatory and legislative framework around these is emerging. District networks are developing in Greater Manchester (GM), with several at the feasibility stage, however it isn't yet

clear how scalable these networks will be. Forthcoming legislation requiring consumers to use a heat network where this is available and offers the best value will remove a key area of uncertainty for heat zone developers.

- **Commercial projects:** Electricity generation from ground-mounted solar arrays, storage, and EV charging, is now reasonably commonplace in the UK, with a regular flow of new sites coming on stream. This still requires access to land and assets (including the national grid) which the public sector need to provide and then contract on.

Project life cycle

The key activities, requirements and risks associated with project delivery evolve over the three key project phases: development, construction, and operation. The risk profile at each stage informs the choice of commercial model throughout the project life cycle.

Table 4: Project life cycle risks and mitigations

Project Phase	Key Risks (these will vary by asset class)	Potential mitigations
Development	<ul style="list-style-type: none">▸ Site availability▸ Grid connection availability▸ Grid capacity▸ Planning permission▸ Technical feasibility	<ul style="list-style-type: none">▸ GMCA coordination / use of public sector land▸ Private wire connections▸ Grid upgrades▸ Support to planning applications from GMCA / Districts
Construction	<ul style="list-style-type: none">▸ Ground conditions▸ Programme overruns▸ Cost overruns	<ul style="list-style-type: none">▸ Competent supplier▸ Programme assurance
Operation	<ul style="list-style-type: none">▸ Market price of electricity / heat▸ Asset condition	<ul style="list-style-type: none">▸ Price / volume guarantees▸ GMCA / District offtake▸ Whole life cost incentives

The project risks evolve and generally reduce over the course of the project life cycle. As such greater public sector involvement is required at the development stage

(e.g. through a Delivery Partner model), to define projects clearly and provide pump priming funding.

Commercial models

There are a range of commercial models that could be adopted, ranging from fully private sector delivered, commercially viable projects, all the way through to a public sector led approach. A level of public sector involvement will be required in all cases to specify and coordinate projects to ensure GMCA's strategic objectives are met. Further public sector interventions noted above, including making sites available, underwriting off-taker prices or consumption and/or making direct funding contributions, are likely to be required where schemes are not commercially viable.

Appropriate commercial models will vary depending on the commercial characteristics of the asset class, the project's stage of development, and the risk appetite (and capacity to manage risk) of individual Districts. These are most effectively developed while delivering real projects and a key next step will be to develop two to three specific projects and test the associated commercial model options with the market.

Market engagement and feedback

Much of the OBC Commercial Case work will involve applying appropriate commercial models to a detailed project pipeline to take to market. The initial market engagement undertaken at this SOBC stage provides a good starting point for this. The themes emerging from this exercise were:

- ▶ **GM Leadership Role:** the need for central coordinating role, offering strategic leadership.
- ▶ **Public sector 'Pump Priming' enabling role:** the market sees one vital role of public sector to be 'pump priming' key interventions where they are not currently purely commercial.
- ▶ **Broader issues seen as barriers to investment** by the market included skills and supply chain concerns, network capacity issues and lack of project pipeline visibility.
- ▶ **Place-based approach:** market participants recommended avoiding looking at technology in isolation and instead coordinating technologies that, combined in a single location, will have greater impact and attractiveness to the private sector.
- ▶ **Management and timing of market engagement:** the market requested a more detailed pipeline to be developed to enable suitable private sector engagement in a meaningful way – this does not yet exist.
- ▶ **Demonstrating overall deliverability** to give participants confidence that net zero in GM is achievable.



FINANCIAL CASE

Financial Case

The LAEP's estimate of the investment required for GM to reach carbon neutrality by 2038 is approximately £12.5 billion of expenditure in the areas directly controlled or influenced by the GM public sector. This scale of investment is beyond the ability of the public sector to provide directly without significant increases in local and/or national taxation but, given the nature of the projects involved, it is unrealistic to expect this expenditure to be fully delivered from private sources.

The purpose of the Financial Case at SOBC stage is to identify an illustrative split between public and private sector expenditure on these schemes.

LAEP cost estimates

The LAEP cost estimates considered in the financial case are broken down by asset class and between capital and operating costs as shown below:

Table 5: LAEP cost estimates by asset class

Asset class	CAPEX (£bn)	OPEX (£bn)	Total (£bn)
Generation & Storage	1	0	1
Heat Networks	2.1	2.4	4.5
Public Sector Decarbonisation	1.1	0.1	1.2
Social Housing Retrofit	4.9	0.8	5.6
Electric Vehicle Infrastructure	0.2	-	0.2
TOTAL	9.3	3.2	12.5

Financial model

Projects in each asset class will generate an internal rate of return ('IRR') as a product of their costs and commercial income generation potential. We applied a realistic range of input project IRR assumptions by asset class, based on current market knowledge and recent experience.

The financial model we constructed for this Financial Case compared the input IRR range by asset class with an assumed investor return expectation of 10%. In aggregate, illustrative model results showed that 50% of the LAEP cost estimates, or £6.3bn, would need to be met through public sector subsidy and capital grants, with the remaining 50% being met by private sector investment. Consistent with the Commercial Case, these indicative results show that

public sector funding will need to be targeted towards heat networks, social housing retrofit and decarbonisation of public buildings.

The scale of both the public funding and private investment ask is significant. As such it is important to develop a detailed project pipeline to provide certainty around the requirement and enable both sectors to mobilise funds and resources. This pipeline will need to be accompanied by a set of commercial models which allocates risk efficiently, to reduce the investor risk premium, and a procurement approach which manages cost, e.g. by taking advantage of scale economies across GM.

Next steps

This initial illustration should be further developed at OBC stage, taking account of:

- ▶ More detailed market engagement to understand expected investor returns, testing the 10% assumption used here.
- ▶ More detailed and updated cost forecasts, enhancing the LAEP data used here.
- ▶ More detailed scheme definitions, enabling project IRR and commercial income assumptions to be tested.
- ▶ Inflation forecasts/assumptions.
- ▶ Refined/shortlisted commercial model options, which impact the risk profile and investor returns expectations.
- ▶ Recognition that the market continues to evolve and therefore take into account any innovation that impacts on the appetite of the market.



MANAGEMENT CASE

Management Case

The Management case sets out the role that GMCA will need to take in both coordinating the delivery of the programme and aligning stakeholders. It builds on the Commercial Case, to further set out how the potential Project Delivery Unit ('PDU') would work (as a worked example), how it could be

led and the resourcing and structural requirements that would need to be implemented. Finally, the Management Case sets out immediate and medium-term priorities that need to be completed to remain on the path towards achieving the 2038 target.

Proposed role of GMCA

The Management Case recognises the importance of collaborative working between the Combined Authority and GM Districts to achieve the common goal of net zero by 2038 and recognises that a number of the Districts already have their own strategies and targets to achieve net zero. The implementation of net zero in GM is a complex challenge, due to varying levels of progress and a variety of approaches used by Districts, and the wider stakeholder landscape. The Combined Authority cannot and would not want to mandate how each District delivers their commitments. This must be a collaborative approach recognising work already underway and retaining autonomy by Districts in delivering their own mandate.

This SOBC sets out various models that can be applied to deliver net zero programmes and projects, ranging from autonomous District-led delivery through to a centralised function such as the PDU construct outlined in the Commercial Case. This recognises that there is no 'one-size-fits-all' approach.

GMCA has a critical role to play to continue to coordinate different stakeholders within GM, and to provide a single point of contact for central government bodies, regulators, third-party delivery partners and investors.

Project Delivery Unit

One example of how the programme could be coordinated is via a PDU construct, whereby an agreed function with an SRO would take the overall leadership of the programme and coordinate and collaborate with the other bodies. As the sponsor for the GM Net Zero Programme, this SRO would be responsible for:

1. Ensuring delivery of the Programme.
2. Securing the resources necessary for the success of the Programme.
3. Ensuring the implementation of the Programme delivers the expected objectives and benefits.
4. Ensuring the effectiveness of the governance, assurance and Programme management activities and maintaining them throughout the Programme.

5. Actively working with central government to share learnings, best practice and insights with other Districts across the UK who will need to initiate, plan, and deliver similar net zero Programmes in their own geographies.
6. Flexing the PDU's role throughout the lifecycle of the Programme in supporting the Districts, with the expectation of more front-loading of resource to galvanise earlier progress and recover any slippage, before taking more of a monitoring and assurance role as the programme moves into Business as Usual.

The PDU is a common model in infrastructure programmes, however as the delivery of net zero transformation is nascent, other models (such as a matrix management approach across the Districts) may be more appropriate and it is the role of GM stakeholders to collaborate on which model best meets GM needs for meeting the net zero target in 2038.

Resource requirements

Significant resource is expected to be needed, in different phases, to coordinate activity across the portfolio of programmes and projects. Consideration is needed as to whether resourcing is sourced from the current workforce, and to what extent the Districts or the Combined Authority have the ability to commit full-time resources. Given the

nature of the programme, there will be the requirement for a full-time SRO, along with Board/Steering Group oversight. Delivery of a programme of this scale is expected to require significant legal, commercial and procurement advice and support.

Implementation plan

To make significant progress towards achieving the 2038 target, a number of immediate short and medium-term next steps are required to progress this SOBC into implementation. These include:

Immediate next steps

- ▶ **Teaming:** Collaboration, pace, and integration with Districts on their priority programmes, are fundamental to GM's ability to achieve its net zero ambition by capitalising on teaming and collaborative working, now through to Summer 2023.
- ▶ **Engagement:** Use the SOBC to engage key stakeholders including on funding ask (both programme development and net zero delivery).
- ▶ **Acceleration:** Undertake short, sharp period of planning work with a "Task & Finish" focus, to prioritise progress against key deliverables.

Medium-term

Once a series of decisions has been unlocked through the Task & Finish focus, alongside the maturing of the priority projects in Oldham and Manchester, the following steps can be undertaken:

- ▶ **Establish the Delivery Structure / Operating Model:** A clear structure should be established to ensure a coordinated approach to development and focus on priority Districts. This will be critical to the success of the Programme, and will build credibility with stakeholders, enhance investor confidence, and create clarity and simplicity in the process.
- ▶ **Mature the solution:** Following this SOBC, a series of OBCs may be required for different assets, or packages of assets/projects. The OBCs will provide more detailed project and programme definition, further market engagement, further development of Commercial models, and development of the delivery partner roles, packaging strategy, procurement, and commercial approach.
- ▶ **Continue engagement:** Continued engagement with stakeholders is expected to be required throughout the delivery of this programme. At this stage, following the packaging selection and delivery structure, GMCA would signal their intent to government in respect to both policy and fundings asks, as well as continuing engagement with Districts, the market and broader delivery ecosystem.



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