GMCA GREATER MANCHESTER COMBINED AUTHORITY

HOUSING, PLANNING AND ENVIRONMENT OVERVIEW AND SCRUTINY

DATE: **11th April 2019**

TIME: **10.30 – 12.30**

VENUE: **The Boardroom, GMCA Offices, First Floor Churchgate House, 56 Oxford Street, Manchester, M1 6EU**

1. **APOLOGIES**

2. **CHAIR'S ANNOUNCEMENTS AND URGENT BUSINESS**

3. **DECLARATIONS OF INTEREST** (paper attached)
To receive declarations of interest in any item for discussion at the meeting. A blank form for declaring interests has been circulated with the agenda; please ensure that this is returned to the Governance & Scrutiny Officer at the start of the meeting.

4. **MINUTES OF THE LAST MEETING HELD ON 14 MARCH 2019** (paper attached)
To consider the approval of the minutes of the meeting held on 14 March 2019, as a correct record

5. **GM HOUSING STRATEGY** (papers attached)
Report of Mayor Paul Dennett, Salford City Mayor and Portfolio Lead for Housing, Homelessness and Infrastructure

6. **THE SMART ENERGY PLAN** (papers attached)
Report of Councillor Ganotis, GM Green City Region Portfolio Lead

7. **GMS SIX MONTHLY UPDATE ON PERFORMANCE AND IMPLEMENTATION PLAN** (paper attached)
Report of Anne Morgan, Steve Fyfe & Mark Atherton, GMCA

8. **WORK PROGRAMME** (paper attached)
Report of Julie Connor, Assistant Director, Governance & Scrutiny Team, GMCA

Please note that this meeting will be livestreamed via www.greatermanchester-ca.gov.uk, please speak to a Governance Officer before the meeting should you not wish to consent to being included in this recording.

GMCA GREATER MANCHESTER COMBINED AUTHORITY

ITEMS FOR INFORMATION ONLY

9. TFGM UPDATE ON TRANSPORT FOR THE NORTH ISSUES (paper attached)
Report of Simon Warburton, Transport Strategy Director, TfGM

10. REGISTER OF KEY DECISIONS
https://www.gmcameetings.co.uk/downloads/download/92/register_of_key_decisions

11. DATE AND TIME OF NEXT MEETING
Thursday 11th June 2019 10.00, Boardroom, Churchgate House

Notes:

- The Contact Officer for this agenda is Matt Berry, Governance & Scrutiny, GMCA ☎ 0161 778 7009 ✉ matt.berry@greatermanchester-ca.gov.uk. The Statutory Scrutiny Officer is Julie Connor ☎ 0161 778 7009 ✉ julie.connor@greatermanchester-ca.gov.uk

- If any Members require advice on any agenda item involving a possible declaration of interest, which could affect their ability to speak or vote are advised to contact Jamie Fallon 24 hours in advance of the meeting.

- For copies of papers and further information on this meeting please refer to the website www.greatermanchester-ca.gov.uk. Alternatively, contact the above Officer.

- Please note that this meeting will be held in public and will be livestreamed (except where confidential or exempt information is being considered).

Membership:			
	Councillor Shamim Abdullah	Bolton	(Labour)
	Councillor Andrew Morgan	Bolton	(Conservative)
	Councillor Catherine Preston	Bury	(Labour)
	Councillor Dorothy Gunther	Bury	(Conservative)
	Councillor Ben Clay	Manchester	(Labour)
	Councillor Paula Sadler	Manchester	(Labour)
	Councillor Steven Bashforth	Oldham	(Labour)
	Councillor Stuart Dickman	Salford	(Labour)
	Councillor Linda Robinson	Rochdale	(Labour)
	Councillor Laura Booth	Stockport	(Labour)
	Councillor Lisa Smart	Stockport	(Liberal Democrat)

Please note that this meeting will be livestreamed via www.greatermanchester-ca.gov.uk, please speak to a Governance Officer before the meeting should you not wish to consent to being included in this recording.

GMCA GREATER MANCHESTER COMBINED AUTHORITY

	Councillor Mike Glover	Tameside	(Labour)
	Councillor Graham Whitham	Trafford	(Labour)
	Councillor Lynne Holland	Wigan	(Labour)
	Councillor Michael Winstanley	Wigan	(Conservative)
Substitutes:	Councillor Kevin McKeon	Bolton	(Labour)
	Councillor David Greenhalgh	Bolton	(Conservative)
	Councillor John Leech	Manchester	(Liberal Democrat)
	Councillor Hazel Gloster	Oldham	(Liberal Democrat)
	Councillor Peter Davis	Oldham	(Labour)
	Councillor Ray Dutton	Rochdale	(Labour)
	Councillor Ann Stott	Rochdale	(Conservative)
	Councillor Tanya Burch	Salford	(Labour)
	Councillor Ari Leitner	Salford	(Conservative)
	Councillor Adrian Pearce	Tameside	(Labour)
	Councillor Ruth Welsh	Tameside	(Conservative)
	Councillor Amy Whyte	Trafford	(Labour)
	Councillor Bernard Sharp	Trafford	(Conservative)
	Councillor Fred Walker	Wigan	(Labour)
	Councillor James Grundy	Wigan	(Conservative)

This agenda was issued on 03/04/19 on behalf of Eamonn Boylan, Secretary and Chief Executive, Greater Manchester Combined Authority, Churchgate House, 56 Oxford Street, Manchester M1 6EU.

Please note that this meeting will be livestreamed via www.greatermanchester-ca.gov.uk, please speak to a Governance Officer before the meeting should you not wish to consent to being included in this recording.

Housing, Planning & Environment Overview & Scrutiny Committee

Declaration of Interests in Items appearing on the Agenda

NAME _____

Minute Item No. / Agenda Item No.	Nature of Interest	Type of Interest
		Personal / Prejudicial / Disclosable Pecuniary
		Personal / Prejudicial / Disclosable Pecuniary
		Personal / Prejudicial / Disclosable Pecuniary
		Personal / Prejudicial / Disclosable Pecuniary
		Personal / Prejudicial / Disclosable Pecuniary
		Personal / Prejudicial / Disclosable Pecuniary

GMCA HOUSING, PLANNING AND ENVIRONMENT OVERVIEW AND SCRUTINY COMMITTEE
14 MARCH 2019 AT 6.00PM AT THE GMCA OFFICES

Present:	Councillor Lisa Smart (Stockport) (in the Chair)
Bolton:	Councillor Shamim Abdullah
Manchester:	Councillor Paula Sadler
Manchester:	Councillor Ben Clay
Oldham:	Councillor Barbara Brownridge
Rochdale:	Councillor Linda Robinson
Salford:	Councillor Tanya Burch
Tameside:	Councillor Mike Glover
Wigan:	Councillor Michael Winstanley

**** This meeting had 9 of its Members present and was not quorate ****

In attendance

Stockport Council	Councillor Alexander Ganotis
GMCA Officers	Julie Connor (Assistant Director Governance and Scrutiny) Mark Atherton (Assistant Director Environment) Matt Berry (Governance and Scrutiny Officer)
Speakers	Clare Cornes, Westfield Technology Group Glenn Lyons, University for the West of England, Bristol Rafael Cuesta, Transport for Greater Manchester

M111/HPE APOLOGIES FOR ABSENCE

Apologies for absence were received from Councillor Laura Booth (Stockport), Mike Glover (Tameside), Dorothy Gunther (Bury), Catherine Preston (Bury), Michael Winstanley (Wigan), Stuart Dickman (Salford), Andrew Morgan (Bolton), Lynne Holland (Salford) and Graham Whitham (Trafford)

M145/HPE FUTURE INNOVATION IN TRANSPORT

Autonomous Vehicles

Clare Cornes, Intelligent Mobility Manager for Westfield Technology Group delivered a presentation to Members on autonomous vehicles. The following points were highlighted:

- The definition of an autonomous vehicle is one that does not need human input to operate, this includes levels of autonomy which range from 0-5, with 0 being all functions are controlled by the driver, to level 5 where human intervention in the vehicle operations is not required
- The benefits of autonomous vehicles were highlighted such as an increase in safety for transport users and giving passengers more free time

- Disadvantages were stated as computer errors or malfunctions causing incidents with results potentially worse than human error and the potential knock-on impacts to current employment opportunities in operating manual vehicles
- The UK is pro-active in supporting developments through competition funding and the publication of a Code of Practice for testing
- The majority of deployments are on a trial or testing basis and are not integrated into the wider transport network. A number of trials in the UK are supported by the Centre for Connected and Autonomous Vehicles and Innovate UK
- Before full-scale, commercial deployment, additional guidance, policy and regulatory parameters would be required
- In terms of impacts for towns cities and regions: autonomous vehicles offer an opportunity to change how transport is planned, but guidance and policies are required to shape delivery
- Infrastructure requirements could be changed to meet the needs of people instead of vehicles
- Autonomous vehicles could provide greater flexibility in street design, allowing for the incorporation of green spaces and flexible shared areas

Future Mobility and Accessibility

Glenn Lyons, Mott MacDonald, Professor of Future Mobility at University for the West of England, Bristol delivered a presentation to Members on Future Mobility and Accessibility.

The following Points were made:

<u>Travel mobility is in a constant state of flux</u>

- There has been a 20% reduction in commuter trips per person per week since the 1990s
- The rise in on-line shopping has coincided with a 30% decrease in physical shopping trips over the past decade
- On the motorway network there is significant traffic growth
- van traffic is growing at 5% per year
- “29% of all 17-20 year olds had a full driving licence in 2014 compared to 48% in 1992/94”

At the end of July 2018, the UK Department for Transport issued a call for views and evidence on the future of mobility. Ten principle points responded by Glenn Lyons on behalf of Mott Mcdonald were highlighted and noted below:

1. Mobility is a derived demand. There is a risk that any future of urban mobility strategy is too inwards looking and monopolised by transport sector thinking
2. Access is fundamental. The purpose of the transport system is to provide access to people, goods, services and opportunities
3. Look at what is already happening. Unlike Connected Autonomous Vehicles and Mobility as a Service, take up of cycling, e-bikes, bike sharing schemes and electric moveable’s is already a phenomenon in cities across the world

4. Sharing is key. The presumed trend in sharing of mobility requires much closer scrutiny. Sharing is a necessary condition for new transport technologies and services to be able to deliver some of the benefits that are being promised
5. Prioritise the end over the means. Ongoing development of urban infrastructure should be aligned to fulfilment of higher level 'sustainable cities' goals rather than being aligned (solely) to the facilitation of technological innovation
6. More mobility for more profit. Private sector providers of future mobility solutions are rational actors
7. Mass transit is under threat. The erosion of mass transit should surely be a concern for future urban mobility since trends in urbanisation demand more efficient not less efficient people movement within limited transport system capacity
8. Be careful what you wish for. It has been the very liberating force of the motor car that has played its part in land use changes that have moved services and opportunities further away from people
9. Health and safety are not synonymous. An important distinction must be made between health and safety when it comes to the design of our urban mobility systems
10. Beware solutions looking for problems. It can sometimes appear that it is already a given that the solution to future urban mobility will be connected, electric, autonomous and shared and the task is to work out how to get the public on side

Transport Innovation in Greater Manchester

Rafael Cuesta, Head of innovation Transport for Greater Manchester delivered a presentation to Members on Transport Innovation in GM. The following points were highlighted:

- Supporting sustainable economic growth with the increase in population, homes and jobs resulting in an expected increase to 800,000 more trips on transport networks everyday by 2040 is a major challenge
- Adapting to the requirement to reduce carbon use is being introducing such as increased cycle routes, expanding public transport such as Metrolink and making electric car charge points available.
- There is a rapid change in:
    - Technology: such as materials, engine technology, automation,
    - Place: such as connected neighbourhoods, clean air, decarbonisation,
    - Behaviour: shared economy and social norms
    - Data & Analytics: sensors, digitisation,
- There is an opportunity to reimagine the future of transport includes intelligent and shared mobility, connected infrastructure and place and Partnership and collaboration.
- Addressing the current fragmented GM transport system with frequent delays with mismatch in supply and demand is a priority
- Increase in digitalisation for things like drones, cycling, ride sharing and on demand public transport

- Possible applications of autonomous vehicles as part of a diversified public transport system include autonomous car sharing vehicles, autonomous vehicles used as feeders to public transport and 'robo taxis' and on demand shuttles

Members welcomed the presentations from the speakers and raised the following questions and comments:

A Member asked what guidance is in place around autonomous vehicles, and what the current challenges and hurdles are. It was clarified that in terms of challenges, the current autonomous vehicle shapes and sizes don't fit into current U.K. vehicle classification, and it is difficult to conduct any crash tests and there is a limit to what can be tested. Decision making by the vehicle when faced with a certain crash scenario is also problematic. There are also issues with getting the public to accept autonomous vehicles which may require a transition period, their initial ownership will likely be very limited between public and private ownership. National guidance and standards will be required as per current manual vehicles. There are also complications with the question as to whether fully automated level 5 vehicles should have the option of any human input.

A Member asked a if/how congestion and air pollution can be reduced with autonomous vehicles. It was stated that automated cars can be programmed to drive more efficiently operating with a reduced gap between vehicles. The most ideal solution to reducing carbon is still to have less cars, with even electric cars not being particulate emission free. The potential problem that fully automated vehicles being readily available and more convenient could mean that there are more vehicles on the road.

The challenges around introducing an effective car share scheme was highlighted, with success being limited to private arrangements set up between internal existing friend groups rather than any attempt to establish corporate schemes. The Uber share system was highlighted as having some success, but that hasn't been very widely used in GM or the U.K. Sharing vehicles with unknown individuals can potentially create trepidation and safety issues.

In terms of introducing a change in behaviour with using clean transport methods, it was stated that advances in technology can act as an enabler for increased road vehicles with the added convenience potentially encouraging more people to use it.

The point was made that most vehicle owners only use their car for around 50 minutes per day with most vehicles being idle the rest of the time. A publically shared vehicle system would be far more efficient than widespread car ownership.

In relation to the question as to the safety of autonomous vehicles, It was stated that all computer systems have the potential to be hacked, with there never being 0% risk in this regard. It was stated that TfGM continue to work towards resilience to cyber threats.

A Member queried whether a drivers license would still be required for autonomous vehicle operation. It was clarified that a' safety driver' with a valid drivers licence would likely have to be present in the

event that intervention is required. Having a supervisory individual in the car was discussed with the 'school run' example given as requiring supervision.

A Member made the point that the major road networks could potentially require complete redevelopment to accommodate autonomous vehicles. The impact on potential job losses of drivers of manual vehicles was also highlighted. Employment positions relating to autonomy are likely to be much higher skilled. It was stated that there is already an awareness of this problem, with the shift of employment opportunities likely to be complex and may not be directly transferable. These shifts and changes have been occurring since industrial revolution, with change happening fairly gradually. It was noted that advances in technology can bring benefit to the city and available public transport.

The Uber self-driving car trial crash which involved a fatality in 2018 was discussed. It was stated that there has been limited information released surrounding the circumstances of this incident.

It was highlighted that most modern aircrafts are at around level 3 automation. The economy of scale of air travel being viable for this technology which is not yet replicated for smaller/shorter journeys with fewer people. It was stated that the increase in automation in the airline industry has resulted in a decline in the experience level of pilots, with the same expected should automobiles evolve in the same way.

Transport costs were stated as being too expensive in certain areas of the city region, with a need to reduce marginalisation. In order to facilitate this the transport options available need to be right mix/ blend of options.

It was clarified that the expectation on autonomous vehicles would be that they could navigate smaller side roads and housing estates to take passengers on the full destination journey. However, long distance journeys are not currently viable. It was highlighted that some autonomous vehicles are currently being tested at high speeds. The point was made that the general public are currently not comfortable have autonomous vehicles traveling at high speeds near them.

In terms of any ability for cars to operate in three-dimensional space, it was clarified this is not viable.

The importance of remaining 'outcome focused' in terms of future mobility was highlighted. The goal should be for the creation of 'better places' and more liveable cities, attracting emerging generations and bringing economic stability.

TfGM will continue to push transport innovation, their current priorities remain focussed on getting fundamental basic changes such as single ticketing for public transport and reducing fragmentation, improving transport infrastructure and reducing the number of cars on the road.

A Member queried whether GM's targets of reducing cars from 3.4 million to 3.2 million is ambitious enough.

Resolutions

- To identify if any local policy and guidance exists regarding the above transport concepts and, to share with this Committee

- To provide more clarity and visibility to Members of what is currently being worked on in Greater Manchester in terms of new innovative transport concepts
- For this item to come back to a future meeting of this Committee as a TfGM item with more focus on funding and resources and also integration with other GM strategies

RESOLVED/-

Members received the briefings on the innovation in transport item and provided questions, comments and recommendations.

M146/HPE DRAFT 5 YEAR ENVIRONMENT PLAN FOR GM

Councillor Ganotis, GM Green City Region Portfolio Lead for Green City Region delivered a presentation to Members on the Draft 5 Year Environmental. The following points were highlighted:

- The Green Summit this year is focussed on achieving huge reductions in carbon emissions. The Draft 5 Year Environment Plan sets out how the City region will achieve Carbon neutrality by the year 2038 as set out as a target by the GM Mayor in order to make GM's fair contribution to the Paris Agreement.
- The draft plan is based on feedback from GM residents attending Green Summit 2018 and was published in the Springboard report July 2018.
- The 2019 Green Summit will be used to raise awareness and get comments for the plan to incorporate and take to the GMCA meeting at the end of March for sign off. The challenge will be how GM implements what is proposed in the Draft Plan.
- It was clarified that this work is aligned with the other GM strategic plans. The GMSF includes a proposal to require all new housing developments to be Net 0 Carbon by 2028, The GMCA and 10 GM districts are working with professionals to test whether this date to explore whether it can be brought forward. It was highlighted that good quality homes can save money on heating, provide comfort and provide better health for their occupants. The green agenda work is also linked to the GM Local Industrial Strategy which is also going to the March GMCA meeting for sign off.
- In terms of environmental threats and challenges to GM, five key areas have been identified. Improving air quality and making equitable share to carbon reduction highlighted as pressing challenges. Improvements for People, Places and the Economy and increase prosperity are also highlighted.
- The Draft Plan is not just for the GMCA or 10 GM districts, but it focussed on all stakeholders as it can only be successfully achieved if all parties take actions. The Draft Plan will be used it to track progress on reporting on achieving its targets.
- The first 5 years is focussed on low carbon energy generation and efficiency measures. There is a need to create an environment to stimulate technological, social and financial innovation.

- A scientific evidence approach has been taken, which highlights that meeting targets by the Paris Agreement carbon emissions need to be reduced by 15% from now which requires prompt action.
- A graph was used to illustrate how there is a shortfall in attaining carbon reduction and emissions targets based on current plans and what is achievable, which highlights the scale of the challenge.
- The single biggest contributor to carbon emissions is the way GM heats buildings and the energy use within them.
- The GMCA and 10 GM districts need to develop proposals for investment vehicle potentially with an energy innovation company with a view to delivering renewable energy generation on the public estate to begin with. This is to remove the reliance on the national grid.
- Over the next 5 years, 6 areas have been identified such as energy supply , demand in buildings, travel and transport, consumption and productions, natural environment, and adaption to climate change. All of these areas link together and have knock-on impacts for one another.
- The climate agenda must create investable propositions such as social housing with energy efficiency was highlighted. Innovative models need to be scaled up. Increasing peoples knowledge and awareness making sure skills are there use this to upskill for jobs for the future.
- There is a need to stimulate the demand for retrofitting of housing, making it clear how the investment can lead to saving on energy bills with models available which don't require large upfront costs

Members welcomed the presentation from Councillor Ganotis and raised the following questions and comments:

A Member noted that incorporating any changes to the Draft Plan following the Green Summit may be challenging given the tight timescales between these meetings.

A Member thought that the 'cost of doing nothing' is a cost in itself and is something that can be stressed more strongly. It was clarified that the last substantial report looking at global implications for GDP is from 2008 and would be costly to repeat, presenting a lack of data issue in making this case more forcefully.

A Member raised the issues of the cost of gas being cheaper than electricity and it being the most viable option for most residents as energy bills in general keep increasing with the question asked as to whether the new commodities will be any cheaper. It was highlighted that for the models to be successful, there must be a cost saving incentive to switch to greener energy sources. The Green Switch campaign to switch to renewable energy has saved money for all parties. The choice to use gas will not be taken away from people, but there must be a shift over time to reduce/eradicate gas use. Gas is carbon, but its use must be reduced in a way that is not more expensive, potentially using powers over capital spending and creating innovative models. It was highlighted that most GM council housing stock boilers have been recently replaced in most social housing, in a way that costs are recouped over time.

It was noted that the Government is starting to move away from gas for new build developments. Social landlords have been utilising Renewable heat Incentive to install air source heat pumps which are more

energy efficient than gas boilers. Financial models are available to help landlords save money and tenants save money on energy bills.

It was stated that the current reliance on energy prices is risky, with global prices of oil and gas supplies from Europe fluctuating and subject to volatile huge spikes in costs. There is a need to de-centralise the source of energy which will create more control of energy prices.

A Member queried where the increased demand for energy will be sourced from moving forwards with increased demand. It was clarified that the predicted energy demand required cannot be achieved via renewable sources alone. This creates debate for other uses such as nuclear power which is part of the Low Carbon agenda, but has other environmental issues.

A Member noted the challenge with some of the big decisions regarding carbon reduction requiring 'pain for people now' with benefits that come in the future. The challenge of whether the economy can be grown in an entirely clean way was highlighted. It was stated that the clean agenda should not be something that is potentially damaging to GM's economy. The issue with market signals not reflecting the long-term sustainability of oil and gas consumption was stated. Part of the longer-term work of the plan is to clarify what is meant by sustainable economic growth and to raise its awareness.

Retrofitting was highlighted as giving many benefits such as improving homes, lowering carbon footprint and creating employment opportunities. It was also noted as presenting a significant opportunity, with lighter touch measures such as cavity wall insulation being utilised more. There is a need for the initial financial hits of more costly adaptions to be supported/ offset with policies such as Green Leases and Green Mortgages that are financed over a period of time or when the property is sold.

It was clarified that aim has always been to not create financial consequences for people, but they will need to deliver on finance models, it will need to be implemented correctly and deliver on finance models so people are not paying large upfront costs.

It was noted that the GM Pension Fund is aligned with GM objectives on carbon. Investments are held within finances sector as well as fossil fuels.

Battery technology was highlighted as being vital for solar power use. The target for battery storage was stated as being 45 megawatt in GM. It was noted that GM will never divorce entirely from the National Grid, however other measures will reduce the dependence with a need to generate and store much more energy in GM. The City Region should seek to lobby Government to decarbonise the National Grid. The generation and pipeline of district heating may present a viable option to move away from gas. Offshore wind was also highlighted as becoming far cheaper than nuclear new build.

The point of retaining the profit of energy generation within GM was raised with £5 billion spent on energy in GM last year, the more that is generated internally , the more that will be retained in the City Region.

RESOLVED/-
That the report be noted.

M147/HPE WORK PROGRAMME

The April meeting of this committee is scheduled to cover:

- GMS six monthly update on Performance and Implementation Plan
- GM Housing Strategy
- The Smart Energy Plan

It is likely that the May meeting of this committee will not go ahead due to local elections

RESOLVED/-

That the work programme be noted.

ITEMS FOR INFORMATION ONLY

1. REGISTER OF KEY DECISIONS
https://www.gmcameetings.co.uk/downloads/download/92/register_of_key_decisions

2. DATE AND TIME OF NEXT MEETING
Thursday 11th April 2019 10.00, Boardroom, Churchgate House

Planning, Housing & Environment
Overview & Scrutiny Committee

GMCA GREATER MANCHESTER COMBINED AUTHORITY

Date: **11 APRIL 2019**

Subject: **GREATER MANCHESTER HOUSING STRATEGY**

Report of: **PAUL DENNETT, SALFORD CITY MAYOR AND PORTFOLIO LEAD FOR HOUSING, HOMELESSNESS AND INFRASTRUCTURE**

---

1 PURPOSE OF REPORT

1.1 To seek views from the Committee on a draft Housing Strategy for Greater Manchester.

2 BACKGROUND

2.1 Work on the development of a Greater Manchester Housing Strategy has been based upon co-production principles. We have benefitted from a series of 'writing groups' drawing on the knowledge and ambitions of a range of stakeholders and experts, as well as 'listening events' run in each of the ten districts with a broad range of participants including relevant lead members.

2.2 This wider base of thinking also helped inform the drafting of the GM Housing Vision, discussed at the Committee's meeting in October, which formed part of the 'Future of GM' package alongside the GM Spatial Framework consultation draft approved by the Combined Authority in January. The Vision has in turn provided a foundation for this Strategy.

2.3 It is intended that the detail of the actions flowing from this Strategy will be set out in a separate Implementation Plan. However, Chapter 6 of the draft indicates the key elements of that Implementation Plan, setting out a framework of priority actions, together with issues where we will be making the case to Government for new approaches or flexibilities.

3 NEXT STEPS

3.1 Subject to views and comments, we are looking to seek approval for the Strategy at the GMCA meeting at the end of May. We will also be seeking comments from Planning & Housing Commission (via email) and also engaging with some of the key stakeholders who were involved in the co-production of the Strategy, and will also look to ensure the Strategy is as up to date as possible, for example reflecting the conclusions of the recent Green Summit and the latest position on the Local Industrial Strategy.

3.2 The document is text-heavy at the moment, and we will add suitable graphics/pictures/charts once the messages are substantially agreed. The more detailed Implementation Plan will be developed to help drive the delivery of the changes the Strategy seeks to promote, and specific work is already underway on many of these issues including homelessness and rough sleeping, the private rented sector and work to accelerate housing delivery. Detailed work on the definition of affordability and affordable housing in a GM context has also commenced.

4 RECOMMENDATIONS

That the Committee:

- comment on the attached draft GM Housing Strategy, including the strategic actions and case-making points in Chapter 6
- request a further report as the first version of the Implementation Plan is being finalised

CONTACT OFFICERS:

Steve Rumbelow, Lead Chief Executive, Housing, Homelessness and Infrastructure
Steve.rumbelow@rochdale.gov.uk

Steve Fyfe, Head of Housing Strategy, GMCA
steve.fyfe@greatermanchester-ca.gov.uk

Greater Manchester Housing Strategy

GREATER MANCHESTER:

DOING HOUSING DIFFERENTLY

2019 - 2024

Draft 03/04/2019

Version 2.1

To add:

- **Foreword from the Mayor and Foreword from Portfolio Leader for Housing, Homelessness and Infrastructure (or a joint one) – to include**
    - **Brief outline of 'Future of GM' narrative and how this Strategy contributes to that**
    - **Connection to and reliance on GM districts in particular but also other partners if we are to deliver the ambitions we have set**
    - **Call to action**
- **Graphics/charts/pictures/formatting once text is firmed up**

Chapter 1 - People and Place: Greater Manchester's vision and approach

1.1 This is the first Greater Manchester Housing Strategy since the Combined Authority was established and our first Greater Manchester Mayor elected. Through more than thirty years of cooperation and partnership working between the public, private and voluntary, community and social enterprise sectors, Greater Manchester has developed a unique approach to identifying, and tackling, the issues that matter to our people and our businesses. Because of that, we can bring together local solutions in a way that other places can't.

1.2 The strategy laid out in this document is the product of a pioneering model of co-production, involving extensive consultation with local authorities, housing associations, academics, architects, builders and housing activists. Content for this document has been collected through an extensive process of 'Writing Groups', 'Listening Sessions' and regular debate with lead politicians and officers from the ten Greater Manchester districts, chaired by the GMCA Portfolio Leader. It is only with the combined voices of these stakeholders that a comprehensive, holistic and detailed framework could be put together reflecting the complex nature of housing need across the conurbation.

1.3 In the Greater Manchester Strategy 'Our People, Our Place'[1] we set ourselves the vision of making Greater Manchester one of the best places in the world to grow up, get on and grow old. One of the ten priorities in Our People, Our Place is to provide 'safe, decent and affordable housing' for our residents. At the heart of this new Housing Strategy is a recognition that housing is at the heart of many of the broader issues that Greater Manchester needs to tackle, including health, carbon reduction, tackling homelessness, providing skills and training to our residents, and growing our economy. The Housing Vision[2] agreed by the GMCA in January 2019, sketched out our collective ambitions for the future of housing in Greater Manchester, as a pre-cursor for the more detailed picture drawn in this Strategy. It will be complemented by an Implementation Plan, giving a transparent view of progress to the public, to the Mayor and political leaders, and to our stakeholders and partners alike.

1.4 For our neighbourhoods to be attractive places to live, work and invest, an integrated and connected approach is essential. Greater Manchester is currently driving huge changes in the way our public services are delivered. Skills services, work programmes, health and social care provision, criminal justice services and education are being redesigned and integrated at place level, ensuring that they deliver better outcomes for our residents. Housing providers are a key part of that service transformation, but more broadly a safe, decent, affordable home is an essential foundation for all our work to help residents.

1.5 We are investing in our infrastructure and assets, both new and existing, to create the conditions for future growth. Good local transport connections and

resilient social infrastructure are fundamental to improving access for all to the opportunities that growth will bring, and to the redesigned public services that we are working to provide. People want to live in places with great schools, good jobs, excellent transport connections, sport and culture underpinned by good housing choice.

1.6 We are accelerating the pace of housing development and improving the quality and choice of our housing offer. New homes are an important part of ensuring we can meet the housing demands of existing and prospective residents, and enable reductions in dependency on expensive, reactive public services by better matching our residents' changing housing needs. Greater Manchester's Plan for Homes, Jobs, and the Environment (Greater Manchester Spatial Framework)[3] will help to ensure we can provide the right homes in the right places, and that they will be part of sustainable, coherent communities for the future. But we should also remember that more than 80% of the homes we will live in by 2050 are already built. Ensuring our existing housing stock is suitable, accessible and fit for the future is integral to improving and maintaining our population's health and happiness.

1.7 It is essential that we recognise questions of community engagement, heritage and local identity, public realm and cultural space. Community empowerment is central to the aims of our city region's growth agenda. Within this context, this Housing Strategy aspires to present a vision for a dynamic, community-led housing plan for Greater Manchester, juggling the competing questions of growth and development with respect for existing communities and demand for particular forms of accommodation. We should be seeking to actively empower people to play their part in the housing market, rather than seeing it as something they have no stake in or influence over.

1.8 This allows us to take an integrated, place-based approach to driving growth and productivity, addressing social and economic inequalities to ensure that the economy works for everyone. We will use this approach to build a strong deal with Government and our partners to create the right housing markets for Greater Manchester's future. This Strategy sets out in more detail the housing-focused elements of that approach, and the accompanying Implementation Plan will provide a more detailed, and regularly updated, set of actions underway across Greater Manchester to help make that vision a reality.

1.9 While we cannot fix everything at Greater Manchester level, we will do as much as we can to make it work better for the people of Greater Manchester. This strategy will only be delivered through agreement and collaboration, not by a top down imposed programme. There is potential to adopt a common approach to more of the issues that we face - not for its own sake, but where there are practical advantages that could be unlocked by closer collaboration or consistency. We know that many residents and stakeholders don't live their lives within the boundaries of a single Greater Manchester district, and we need to make sure our evidence, analysis, policies and priorities reflect that reality, without undermining the need for local approaches to local challenges.

A comprehensive Strategic Housing Market Assessment[4] has been prepared in part to inform the Greater Manchester Spatial Framework, but also as a consistent foundation for this Strategy. The next chapter of this Strategy briefly summarises where we are now in terms of housing, people and place in Greater Manchester. The strategy also flags up where we will need to influence and encourage national Government to amend legislation or regulation, invest differently, or devolve power and flexibility if we are to make better progress.

Box 1: Greater Manchester Strategic Housing Market Assessment

In January 2019 the GMCA published their Strategic Housing Market Assessment providing a comprehensive assessment of housing market dynamics in Greater Manchester and the future needs for both market and affordable housing and the housing needs of different groups within the population over the next twenty years. The full document is available at: https://www.greatermanchester-ca.gov.uk/media/1733/gm-shma-jan-19.pdf

Chapter 2 – Where are we now

2.1 With 2.8 million people living in 1.2 million homes across ten districts, Greater Manchester and our residents are of course hugely diverse. We are a large city region covering almost 500 square miles and account for one-fifth of the population and jobs in the North of England. Greater Manchester sits at the heart of the Northern Powerhouse and generates an estimated £59.6 billion Gross Value Added, making our economy bigger than that of Northern Ireland (£34.4 billion) or Wales (£55.8 billion), and the main driver of the Northern economy.

2.2 Greater Manchester's economy has grown in real terms by 33% since the turn of the century, outpacing UK growth of 25% over the same period. However, despite this growth, our productivity remains below the level expected for a region of its size. Growth-oriented policy has successfully reversed the population fall from a high point of 2.7 million in 1971 which was followed by three decades of decline. Greater Manchester is now home to 2.8 million people, and has seen an increase of over 200,000 residents in the last decade alone. The population is forecast to grow by another quarter of a million people by 2035, and this will contribute to an increase of around 225,000 households due to the changing dynamics of household formation.

2.3 With a working age population of almost 1.8 million and approximately 1.3 million residents in employment, Greater Manchester has a talented supply of labour. There has been significant improvements in workforce skills over the last decade with the proportion of residents with no qualifications falling from 17% in 2006 to 10% in 2016 and the proportion with a Level 4 (degree or equivalent) qualification rising from 26% to 35%. However, there are some significant disparities between different parts of the conurbation, with some wards as high as 40% for no qualifications and as low as 10% for a Level 4 qualification, and with employment rates as low as 39%. Some groups in Greater Manchester are not able to fully contribute to or benefit from the overall growth of the economy, and geographically growth has not been universal across the conurbation, with some districts and neighbourhoods seeing lower growth, reflected in lower land values.

2.4 Despite the relatively strong performance of the Greater Manchester economy, the city region has not been immune to the economic restructuring that has accompanied globalisation and technological change. Significant gaps for skills and employment rates exist between Greater Manchester and the national average and parts of the economy remain entrenched within lower skill, lower productivity and lower wage activity. 'In-work poverty' is increasingly prevalent and over a quarter of residents rely on tax credits to support their incomes. The nature of employment is also changing, with an increase in precarious work: 3% (40,000) of jobs are zero-hour contracts; 5% (66,000) are temporary; and over half of the jobs created in Greater Manchester in the past five years were temporary or self-employed. Wages have fallen by 6.6% in real terms between 2006 and 2016 and the gap in

wages between Greater Manchester and the national average has widened over the decade.

2.5 Greater Manchester has a significant student population, reflecting its strong university base largely situated in the regional centre. The five higher education institutions in Greater Manchester together have a student body of almost 100,000 and around 13,000 student households live in mainstream housing stock in Salford, Bolton and Manchester (which houses around 85% of total students).

2.6 In line with trends nationally, levels of all forms of homelessness have increased in Greater Manchester over the last five years, with the ending of an assured shorthold tenancy in the private rented sector identified as the leading cause in England.[5] There were 3,142 households accepted as homeless and in priority need in Greater Manchester in 2016/17, a 44% increase since 2011/12. The number of people sleeping rough has increased by 554%, from 41 in 2010 to 268 in 2017. We have over 2,000 households in temporary accommodation waiting for a permanent home, generating significant costs for local authorities.

2.7 We have not been delivering enough new homes since the 2008 financial crisis, although this is steadily recovering. Around 9,000 net additional homes were delivered in 2017/18, the highest since 2007/08, driven by new developments in the central areas of Salford and Manchester. We need to continue and increase the pace of delivery if we are to meet local needs, support economic growth, and help to reduce the pressures which contribute to overcrowding, rough sleeping and homelessness. Only 2.5% of all dwellings in Greater Manchester are empty, the lowest level recorded since data began in 2004, and reflecting strong demand for additional homes across the city region. At the same time less than 1% of all dwellings have been empty for six or more months. This is a significant reduction in recent years, from a peak of 2.8% of all dwellings in 2008.

2.8 Since 1971 owner occupation has been the majority tenure across Greater Manchester, growing in popularity over time. Around 28% of homes are owned outright and 33% owned with a mortgage or loan in the city region. Levels of owner-occupation are particularly low in the regional centre, towards south Manchester and in the town centres in Greater Manchester (notably Bolton, Oldham and Rochdale). In contrast, the outer areas of the conurbation see higher levels of owner-occupation, in particular the outer suburban and semi-rural areas of Wigan, Trafford, Oldham, Rochdale and Stockport. Black and minority ethnic (BME) groups are less likely to own their home in Greater Manchester, with around 53% identified as owner-occupiers at the last Census compared with 66% of white groups.

2.9 The proportion of social housing has been decreasing since 1981 and stands at 22%, with around 95% of those rented at social rents (generally substantially below private sector rents). The relative decline of the sector is a consequence of growth in other tenures combined with Right to Buy, with over

92,000 social homes lost to the policy in Greater Manchester since 1980. Conversions of social rented homes to 'affordable rent' have also contributed, meaning that in 2018 we had 5% less social rented stock in Greater Manchester than in 2012/13, a decrease of around 13,000. We now have more than 97,000 households in Greater Manchester waiting for a social home and over 26,000 of these households are identified in priority need for a social rented home.

2.10 Private renting has been the fastest growing tenure in Greater Manchester. Between 2001 and 2011 the share of households living in the private rented sector (PRS) in Greater Manchester rose from 11% to 16.2%, with the majority of those households in Manchester and Salford. The rise was across all household types, but particularly young people and families with children. Black and minority ethnic groups are also likely to be living in private rented accommodation with almost a quarter of BME households living in the PRS compared with 15% of white groups. A total of 96% of household growth in Greater Manchester between the 2001 and 2011 censuses was focused in the PRS and by 2011 the number of households in the PRS in Greater Manchester totalled 196,000.

2.11 Growth in the private rented sector in Greater Manchester has outpaced that of the North West and England and Wales and it is anticipated that the PRS is likely to continue to grow in size, to evolve in terms of the investors and management of rented homes and in the types of households living in the sector. National policy, regulation and taxation regimes may have a significant impact on changes in the sector, but on current trends more families with children and older households will rent privately.

2.12 Our aspirations for inclusive growth need to be matched with homes Greater Manchester residents can afford. Our analysis of the housing market shows house prices in Greater Manchester as a whole have remained substantially below national averages. Between 2007 and 2017, our average price paid rose by 12% to £164,000, compared to a 24% increase to £239,000 in England and Wales as a whole. Our private rents are also lower than national averages – our average monthly rent in 2016/17 was £628, compared to £852 in England as a whole. But, given our relatively low average household incomes, that still means that many of us find meeting housing costs a challenge.

2.13 Our modelling suggests that around a third of Greater Manchester households would have to spend more than 35% of their household income to meet the median private rent of £540 per month. In general, those on lower incomes spend a larger proportion of their earnings on housing costs than those earning more money.

2.14 At least 70% of households in the social rented sector in Greater Manchester are in receipt of Housing Benefit or the housing element of Universal Credit. It is likely also that some low income households will be owner-occupiers who

own their homes outright which may raise questions about their financial ability to maintain their property.

2.15 It is important to note that average figures for Greater Manchester mask patterns within the city region. For both buying and renting Trafford and Stockport averages are significantly higher than Greater Manchester as a whole, while rents in Manchester are also higher, reflecting the city centre market. And in all districts, the variations between neighbourhoods can be substantial.

2.16 We have limited data to track and monitor housing conditions in Greater Manchester across all tenures. We do know however that across the city region around 95% of our domestic dwellings are at or above the Government's minimum advised Energy Performance Certificate (EPC) rating of E, and just 7% of properties had a rating of B or above. Modelling for our *5-Year Environment Plan for Greater Manchester*[6] shows the scale of the challenge, with a need to retrofit 61,000 of our existing homes each year from now to 2040.

2.17 It is not possible to say with certainty how many homes in the PRS in Greater Manchester are not meeting Government's Decent Homes Standard. The English Housing Survey suggests that nationally 27% of PRS homes do not meet this, 20% of homes have 'serious disrepair' and 15% of homes have at least one hazard that is a serious and immediate risk to a person's health and safety. Given the age profile of Greater Manchester's housing stock and the substantial proportion of the PRS stock which is in older, terraced properties, it is reasonable to assume that conditions may be worse in Greater Manchester than nationally.

2.18 Finding the right home is an essential for all of us and the diverse needs of different parts of the population should be reflected in the housing choices available in Greater Manchester. We know that in future years Greater Manchester will be home to a much larger, more diverse, group of older people. By 2035 nearly three in twenty residents will be aged 75 years or older – and one in twenty will be 85 or older – though our population profile will still be younger than the national average. The scale and pace of the projected demographic changes are not unique to Greater Manchester, but brings its own challenges for the city region.

2.19 Our average life expectancy is almost two years lower than the average for England and the gap is even bigger (nearly three years for men, almost four for women) in the number of years of good or very good health we can expect to enjoy. There is a significantly higher proportion of people with a long-term health problem or disability which limits their day to day activities living in the social rented sector than in either owner-occupation or private renting. By 2035, almost one in three Greater Manchester residents aged 65 or over will have a limiting long term illness that limits our day to day activities 'a lot' and just under 8% will have dementia.

2.20 Our recent Supported Housing Census shows that we have over 33,000 units of accommodation for those who need support as well as housing in Greater Manchester. We expect to see an increasing demand for specialist and supported accommodation, with an estimated need of 15,000 extra supported accommodation units by 2035.

Chapter 3 – A different vision: housing, people and place

3.1 Our Housing Vision[2] briefly sets out the ambitions that we want to achieve for Greater Manchester. We should all be able to live in safe, decent and affordable homes that give us a stable foundation for all that we want to achieve for ourselves and our families, and we know that warm, safe and secure homes help us ensure our population is healthier and supported to make the right life choices from early years to the end of life. At the most fundamental level, our vision for Greater Manchester is:

- that those of us in need, homeless or at risk of becoming homeless can quickly access social housing or other affordable housing options so we can retain our place in the community; and
- that no-one will need to sleep rough in Greater Manchester.

3.2 For the 1.2 million existing homes that form our existing stock, our vision is:

- for our existing homes to receive the investment they need to meet and exceed modern requirements for their safety, security, warmth and physical accessibility. This includes retrofitting our existing homes to help meet our ambitions to be a carbon neutral city region by 2038;
- those homes will be part of neighbourhoods of choice, connected to economic opportunities and strategic infrastructure, and offering an excellent natural environment and quality of life for all parts of the community; and
- when we rent in either the social or private sector we can be confident that our homes will be well managed and safe, decent and affordable.

3.3 For the new homes we need, our vision is that:

- we consistently deliver the right homes in the right places, providing the number and mix of new homes for the future needs of Greater Manchester;
- the new homes we build enhance the choice, affordability, quality and variety of housing available in their neighbourhoods, and are accompanied by the transport, social and other infrastructure they need for their residents and the existing community to thrive, including schools, health facilities and green spaces;
- the quality and design of new homes means we can better match the housing supply to the future housing needs and incomes of all of Greater Manchester's residents; and
- the construction industry in Greater Manchester is a centre of excellence and innovation, and an attractive employer for a new generation of skilled workers.

3.4 The right home helps us to live happier, healthier, more independent lives for longer than would otherwise be possible. The health and quality of life of too many Greater Manchester residents is undermined by poor quality housing. We need to address this head on if we are to achieve our ambitions to deliver a radical upgrade in the health and wellbeing of Greater Manchester's residents. For some of us, specialist or supported housing could be the answer, but for the great majority well-designed, good quality non-specialist homes will be able to meet people's needs, and have to be at the heart of our approach. The aim should be to give all our residents positive and affordable housing choices that enable them to find a home that suits their requirements.

3.5 This intimate connection between housing and our wider quality of life means we have to see housing as part of our broader work to provide integrated public services, centred around the individual, that effectively respond to and reduce demand at the neighbourhood level. The development of a new model of service delivery is a key ambition for Greater Manchester[7], and is central to achieving the ambitions set out in the Greater Manchester Strategy through focusing on early intervention and prevention and a holistic view of the needs of people and place. We know that the issues facing our diverse population are complex and changing. Different black and minority ethnic communities face distinct housing challenges across the city region, illustrated by the lower rate of home ownership for our black and minority ethnic households. Young people are especially impacted by welfare reform, notably the restriction for single people under 35 reliant on benefits to shared accommodation rates, and many of those coming through our homelessness and rough sleeping services are young adults. People who are lesbian, gay, bisexual, or transgender are more likely to become homeless or can face discrimination in accessing housing. Families, especially with younger children, can be at risk from overcrowding. Our solutions and services need to fit with and respond to the incredible diversity of Greater Manchester's people.

Health and social care

3.6 The health sector in particular has a key interest in many housing issues. The health of older people, children, disabled people and people with long-term illnesses is at a greater risk from poor housing conditions. Variable quality of homes is a driver of health inequalities, with those living in poverty more likely to live in poorer housing, unstable housing circumstances or lack accommodation altogether. Unsanitary and unhealthy living conditions are a major long-term contributor to chronic health conditions, and lack of suitable supported or temporary accommodation prevents timely discharge of people otherwise ready to leave hospital. Unsuitable homes can be dangerous for residents in need of support, poor heating can lead to illness in winter, and vulnerable or older residents in need of support are prone to injury and preventable hospital admission.

3.7 In 2017 Greater Manchester established a Housing & Health work programme in recognition of the impact good housing can have on our health and wellbeing, to exploit the unique opportunity to work with our devolved Health

and Social Care system to truly embed the role of housing in joined up action on improving health. Furthering Greater Manchester's pioneering work on health and social care integration, we will commit to working to promote investment in housing from pooled budgets between local authorities and Clinical Commissioning Groups.

3.8 We will use these opportunities to influence development of new housing and communities with the right physical, social and green infrastructure that promote healthy lifestyles and more specialist accommodation for those who require it, and to use the housing sector's workforce as key agents of behaviour change. Ensuring our existing housing stock is suitable, accessible and fit for the future is integral to improving and maintaining our population's health.

3.9 We see the potential for 'Healthy Housing Services', a reimagined version of the familiar home improvement agency or care & repair model, as being the potential key mechanism to bring together and develop the services and support available to vulnerable households across all tenures. This should form part of the responsive, integrated delivery of services for households whose home is adding to the day to day challenges they face, but where often relatively minor interventions can make a major difference to their wellbeing and independence.

Age-friendly Greater Manchester

3.10 We know that in future years Greater Manchester will be home to a much larger and diverse group of older people, where nearly three in twenty residents will be aged 75 years or older, and one in twenty will be 85 or older by 2035. This brings a renewed emphasis on ensuring that a diverse range of housing is available to meet the needs of older people and households, recognising that issues like affordability and insecure rental markets impact on people in all age groups.

3.11 On 16 March 2018 Greater Manchester became the UK's first age-friendly city region as recognised by the World Health Organization. Marking the achievement, the Mayor of Greater Manchester launched the Greater Manchester Age-Friendly Strategy[8] to embed ageing as a priority within Greater Manchester policy and to forge new strategic collaborations.

3.12 The way we plan, build and organise our city region can help or hinder social connections. An age-friendly place will be a crucial resource for improving the lives of older people. We know that homes can be supportive of active and healthy living on multiple levels, and their design and layout can help people continue to carry out activities of daily living. The local environment can also provide opportunities for social contact, expand social networks, and enhance feelings of safety and support as well as provide access to green space and other opportunities for activity and recreation. Inside the home, research evidence suggests that falls can be prevented through adaptation and modification (preferably before a crisis has occurred), through tailored

physical activity, improving levels of strength and balance, and adoption of assistive technology.

3.13 Homes will need to be more adaptable, and designed with potential care needs in mind, so that older people can remain in their homes if they wish as their circumstances change. Through the Greater Manchester Spatial Framework, we've set out specifications that all new dwellings must be built to the 'accessible and adaptable' standard[i] in Greater Manchester to allow homes to be able to respond to the changing needs of residents.

3.14 In Greater Manchester, much of our existing housing does not meet the changing needs or aspirations of our older residents. We need to find ways to ensure that new housing is both attractive and within reach of those who wish to move, and that programmes are in place to support those who want to remain in their current homes. The need to explore diverse housing options for our ageing population requires us to move beyond limited discussions about 'downsizing' and towards a model of 'rightsizing' in which improving older people's quality of life is the critical focus.[9] Our existing stock is also important. Research tells us that older households living in non-decent homes with at least one member with a long-term illness or disability are found in greatest numbers in owner-occupation.[10] We need to find ways to ensure more of our homes across all tenures are energy efficient and comfortable to occupy if we are to maintain independence and to improve the quality of life for older households.

Rough sleeping and homelessness

3.15 Greater Manchester has witnessed some of the fastest economic growth nationally over the past decade, but alongside this we have seen growing inequalities, none as acute as the rise in rough sleeping and homelessness. According to official estimates 268[ii] people habitually sleep rough in Greater Manchester and over 3,100 households were accepted as homeless and in priority need last year.

3.16 In Greater Manchester we have a strong track record of innovation and collective working to prevent and tackle homelessness and rough sleeping, backed by the personal commitment from the Mayor of Greater Manchester to end the need for rough sleeping across the city region by 2020. We have a duty to ensure no one is forced to spend a night on the streets and we are developing a ten-year strategy to ensure every resident has a safe and stable place to call home.

3.17 In February 2018 the Greater Manchester Homelessness Action Network, a coalition of over 200 public, voluntary and private sector partners championed by the Mayor, published their strategy[11] to end rough sleeping and lay the

[i] As set out in Part M4(2) of the Building Regulations

[ii] Local work suggests there are almost twice as many entrenched rough sleepers in Greater Manchester than recorded in official count. See https://www.theguardian.com/society/2018/aug/20/manchester-has-twice-as-many-rough-sleepers-than-official-data-suggests

foundations of a ten-year homelessness reduction strategy across the city region. This builds on the Mayor's Homelessness Fund to enable businesses and individuals to donate towards supporting local services. Government's first national rough sleeping strategy set targets of a 50% reduction in rough sleeping by 2022 and the end of rough sleeping by 2027, but we are aiming to make faster progress.

3.18 Our A Bed Every Night[12] programme marks a significant escalation of our efforts to tackle the humanitarian crisis on our streets and aims to ensure that there will be a bed every night for every single person sleeping rough in Greater Manchester during the winter months. This is accompanied by a range of support to help people begin a journey away from the streets.

3.19 However we need to promote prevention as the first response to homelessness and support the implementation of the Homelessness Reduction Act. Research shows the leading cause of homelessness is the ending of an assured shorthold tenancy and there are increasing concerns about the impact of benefit restrictions on the ability of households to access stable tenancies in the private rented sector. Households who are unable to sustain tenancies are becoming homeless which is creating considerable costs to our local authorities in temporary accommodation in the private rented sector. Traditionally, many of those households would have found a home with a social landlord, but the under-supply of new social rented homes and loss of existing properties to the sector through Right to Buy contribute to a shortage of available homes. Given systemic challenges such as high personal and household debt and insecure low paid employment, we need to invest in reversing the decline in our social housing stock, to increase the supply of stable, well-managed homes at the right quality - and where long-term costs are less than providing subsidy to private landlords for an often lower quality product.

3.20 We are leading the practical development of programmes to support local authorities' work in tackling homelessness and to support the Mayor in his commitments on rough sleeping through pioneering work on the Social Impact Bond for Entrenched Rough Sleepers, Homelessness Prevention Trailblazer and the Housing First Programme.

3.21 We are clear that, from a homelessness prevention viewpoint, structural changes are needed to provide more affordable homes, greater security of private renting and more support to those who need it, to help tackle the long-term causes of homelessness.

Supported housing

3.22 We know that supported housing has an important contribution to make to many of the issues we have just outlined. Move on accommodation for those who have experienced homelessness or rough sleeping is one example, taking them further along the pathway back to a settled and stable future, while reducing demand on public services. A recent census of the supported housing available around Greater Manchester has given us a much clearer

understanding of that provision, and of the gaps, both in terms of key client groups and geography. We currently have over 32,000 units of supported accommodation, catering a range of people, including older people, people with learning disabilities, people with mental health needs, and people experiencing homelessness and rough sleeping. Some of that existing stock will need investment to ensure it matches future requirements.

3.23 Given demographic trends, modelling suggests a substantial programme of additional provision for older people will be needed, not least to help address social care pressures and shift demand away from institutional care for those who are able to live more independently with the right support available. Analysis is underway into the future requirements of other client groups. We have an opportunity to build a business case to drive integrated commissioning strategies, using devolved structures to bring together revenue and capital funding streams to develop an effective and sustainable supported housing market.

Chapter 4 – What to do with the homes we have

4.1 Over 80% of the homes we will have in 2050 are already built. Any conversation on the future of our housing supply has to take our existing stock as a starting point. Having an attractive and well-balanced mix of housing is a central component in meeting our aim of ensuring that every part of the city region plays a strong role in delivering inclusive growth to benefit our residents. Our housing offer must better match the demands and aspirations of a diverse population, with the numbers of older households increasing substantially, and with a growing labour market to support.

4.2 So the importance of prioritising and finding new ways to optimise the quality, use and value of our existing homes and neighbourhoods is clear. Across Greater Manchester, we need to think across tenures at neighbourhood, district and city region levels to consider the entire housing stock as a system, understanding its interconnections.

Safe and decent homes

4.3 The disaster at Grenfell Tower in 2017 put a sharp and unblinking spotlight on the safety of high rise blocks, and the Hackitt Review and ongoing investigations are uncovering a series of lessons which we will need to ensure are learned and applied in Greater Manchester. The High Rise Task Force, headed up by the GMCA Portfolio Leader for Housing, Homelessness and Infrastructure, will continue to lead and coordinate much of that work, though there are already lessons which apply more broadly, both for social housing as a sector and cross-tenure around construction materials and techniques, building control and other health and safety processes, which we must ensure are properly addressed.

4.4 The Hackitt Review provides a starting point for work to ensure that Greater Manchester leads the way in ensuring the safety of existing and new homes. While Government's announcement of a Future Homes Standard for new homes to be in place by 2025 is welcome in principle, there are significant concerns around the current requirements and enforcement of Building Regulations, and the position of leaseholders living in potentially unsafe blocks, which justify more urgent attention.

4.5 The 2018 social housing green paper proposed a review of the Decent Homes Standard, potentially a welcome development in respect of a tenure which is - in general - already maintained to a consistent, decent standard by housing providers. But it does highlight the lack of tools, capacity and - particularly - sources of funding to directly intervene in raising the standards of homes in the other 78% of Greater Manchester's housing stock. While it is a natural starting point to expect the owners of those privately-held assets to invest in maintaining them to modern standards, it is also clear that not all are able or (in some cases) willing to do that. The broader, long term costs to society and the quality of places as a whole, and to public services including

the NHS, that result from people living in poor quality, unsafe homes are substantial, and historically were the subject of significant policy interventions by governments of all parties. We need new thinking, new tools, new partnerships.

4.6 A welcome focus in the green paper was rebalancing the relationship between residents and landlords to ensure residents understand their rights and ensuring their voices are heard. This of course is an issue which spans across tenures, and we will continue to work to improve the lives of tenants, whether renting from a social or private landlord, to ensure the rights and responsibilities of tenants and landlords are protected.

Fuel poverty, carbon reduction and retrofit

4.7 On fuel poverty and carbon reduction, we need a clear multi-tenure approach to retrofit and improving the energy performance of our existing homes. The Decent Homes Standard and longstanding investment by housing providers has raised the bar in the social housing sector. We would expect the proposed review of Decent Homes Standard to incorporate stronger commitment to reducing fuel poverty and carbon emissions. But we know our biggest issues remain in the private sector, and particularly the private rented sector. Our strategy will prioritise developing this approach across the Combined Authority, working with the Greater Manchester Low Carbon Hub to explore and exploit any levers at our disposal to raise the standards in private homes, and integrating fuel poverty into our wider work with private landlords and owner occupiers.

4.8 In the landmark Greater Manchester Green Summit[13] on 21 March 2018, the Mayor of Greater Manchester brought together environmental experts, partners and local people to accelerate our green ambitions for a carbon neutral, climate resilient city region with a thriving natural environment and circular, zero-waste economy.

4.9 We subsequently published *Greater Manchester's Springboard to a Green City Region*[14] setting out the foundations to reach our environmental ambitions. This includes reducing the energy demands of our homes and all other buildings through insulation, management of energy use and investment in energy efficient equipment. We published a *5-Year Environment Plan for Greater Manchester*[6] at the second Green Summit on 25 March 2019. This sets out our aim for a carbon neutral city region by 2038 and a set of urgent actions over the next five years – for residents, businesses and other organisations (including the public sector) – to put us on a pathway to achieving that longer term aim. A key part of this plan is a step-change in improving the energy efficiency of Greater Manchester's homes and commercial and public buildings.

4.10 We're clear that our challenging targets can only happen through a combination of sustained proactive national policy and aligned priorities and resources from Greater Manchester. New mechanisms to balance up-front

investments in energy efficiency with the rewards of lower long term bills (and possibly uplift in the value of properties) are needed in both new build and existing home and building refurbishment activities if the health, poverty and productivity impacts of inefficient stock are to be addressed.

4.11 Through the Greater Manchester Spatial Framework we are planning a sustainable and resilient Greater Manchester, with the commitment that all new homes and buildings built within Greater Manchester will be net zero carbon by 2028 with the aim of delivering a carbon neutral city region no later than 2038, with a dramatic reduction in greenhouse gas emissions.

4.12 However, our existing building stock will remain our most significant challenge. Identifying cost effective pathways for the domestic retrofit of energy efficiency and low carbon heating systems to our existing homes as part of a coherent whole systems approach is essential to support Greater Manchester's long term decarbonisation targets. Modelling for our *5-Year Environment Plan*, shows the scale of the challenge, with on average 61,000 of our existing residential properties needing to be retrofitted each year between now and 2040 if we are to achieve our aims for carbon neutrality. Local energy generation will also be an important part of that approach. We're developing innovative finance and delivery mechanisms to retrofit homes, making them more energy efficient and reducing carbon emissions and fuel bills for residents in Greater Manchester. This includes exploring different models of retrofit including modular retrofit of existing stock.

Owner occupation

4.13 Owner-occupation remains the biggest single sector of Greater Manchester's housing mix. Home-owners are an ageing demographic as house prices increase and mortgage finance is harder to access amongst younger generations. We tend not to consider home-owners as a 'high-need' group, however this assumption conceals growing issues regarding older owner-occupiers in low value, poor condition property, as outlined by the Smith Institute's findings on *The hidden costs of poor housing in the North*.[15]

4.14 Many pre-1919 terraces are in need of substantial investment to bring them up to modern standards - providing affordable warmth and removing trip and fall hazards. We will work to further understand the needs of this demographic, how best to help them improve their properties and - where possible - give them options to relocate to more suitable properties. As noted above, the potential for 'Healthy Housing Services', a development of the care & repair model, could provide an effective element of our service offer to vulnerable owner occupiers.

Private rented sector

4.15 The private rented sector has grown substantially in Greater Manchester over the last fifteen years or so, and caters for a number of different types of housing need and demand, from traditional segments like student living, temporary accommodation to meet urgent housing need, to an alternative for

those unable to access social housing. It also provides mid-market family housing and city centre apartments across a range of price levels. This growth is driven in part by trends in other tenures, including households unable to secure mortgage finance to move into owner occupation, and declining supply of social housing. Most new households find their first home in the private rented sector. Whilst recognising that experiences in the private rented sector are often very positive, we must also acknowledge that this sector also contains the worst conditions in our housing market, with issues of instability, poor quality, bad management and poor maintenance all too common, as highlighted by researchers at The University of Salford in a recent report *Precarious lives: Exploring lived experiences of the private rented sector in Salford*.[16]

4.16 Collectively, we need to work together to drive up standards at the bottom end of the private rented sector, encouraging local authorities to use their enforcement and licensing powers up to their legal limits, not least to ensure safety of residents in the sector. Where tenants are in receipt of Local Housing Allowance, the private rented sector is arguably operating in effect as social housing, but without most of the access to additional support and regulatory safeguards and security of tenure a social tenant can expect to enjoy. With 54,000 households in 2018 in that situation, this is a substantial cohort, and there is evidence to suggest that families with children often find it easier to access private rented accommodation than social housing.

4.17 Resources available to tackle enforcement work in local authorities are stretched, and a recent independent review[17] found the national regulatory framework 'confused and contradictory'. We need to find ways to address the lack of capacity available to enforce and raise standards in the private sector as it grows, especially in light of the extended definition of houses in multiple occupation (HMO) expands local authorities' role. Experience in Manchester, Bolton and elsewhere has shown that housing providers can make a significant contribution, working with local authorities on a neighbourhood basis, and we are working with Greater Manchester Housing Providers to explore potential to apply those models more broadly.

4.18 Given the scale of the sector, it is important that we do all we can to encourage greater and more effective self-regulation for the remainder of the market. We will work with the national and regional professional landlord and lettings agency bodies to help them deliver high quality market lettings, and bring forward plans for a Greater Manchester good landlord scheme. But we will also adopt more collaborative approaches to actively deal with rogue landlords and agents who are seriously or persistently failing in their responsibilities to tenants.

4.19 The Homes (Fitness for Human Habitation) Act 2018 empowers residents to take action themselves if their landlord is not meeting their obligations. We need to help tenants have the confidence and knowledge to do that, and to make their individual and collective voices heard without the threat of

retaliatory eviction. There are opportunities arising from the work of Shelter and the Nationwide Foundation[18] to explore new models and interventions in the sector to transform tenants' experience, and the proposed expansion in the coverage of the 'ethical lettings agency' model on a more structured basis across the city region.

4.20 These varying approaches reflect the diversity of the private rented sector, and we will explore the benefits of establishing a partnership body to bring key stakeholders together at a Greater Manchester level to ensure progress is made and good practice shared across the city region.

Social housing

4.21 The social housing sector in Greater Manchester has been reducing in size for decades – falling from over 330,000 at the 1981 Census to around 245,000 now. 92,000 social rented homes have been purchased through Right to Buy, many subsequently finding their way into the private rented sector. The previous domination of council housing has also changed, with 185,000 social rented homes in Greater Manchester now in the hands of independent (but regulated) housing associations. As the sector has become less dominant, the role it has played in the overall housing market has evolved, for example in terms of the age profile of social housing residents.

4.22 Combined with the well documented growth in older households over the next few decades, there are powerful practical drivers for a greater level of integration between social housing providers and the health and social care system. In a Greater Manchester context, with devolution around health and social care already a reality, that could form the basis for a more strategic approach to the commissioning of new social housing, particularly an appropriate mix of supported housing, with that client group in mind.

4.23 But as social housing has become an increasingly scarce resource, the systems used to allocate those homes that become available require additional scrutiny to ensure they are fair and effective. Research into the allocation policies and processes operating around Greater Manchester will help to inform that debate, particularly as Universal Credit rolls out and adds to the impact of other welfare changes (including benefit caps, under-occupancy penalty (bedroom tax), lower housing benefit payments for under-35 year olds, and the four year freeze on most working age benefits and tax credits). Building and managing allocations processes to deal fairly with a complex mix of people with varied needs including (for example) members of the Armed Forces community, victims of domestic abuse, care leavers and ex-offenders is a huge challenge for local authorities and housing providers alike. We will explore the benefits of a coordinated Greater Manchester housing allocations framework as one way to improve the accessibility and availability of social housing. The reintroduction of a CPI+1% rent formula announced by Government as applying from 2020 potentially allows housing providers greater financial scope. But welfare reforms mean that tenants on Housing Benefit/Universal Credit will increasingly be expected to find a

proportion of rent from the rest of their household budget, while those in work will find rent an increasing burden.

4.24 In Greater Manchester, the development of the Greater Manchester Housing Providers group, combined with a range of devolved powers in areas such as health and social care and city region wide approaches to homelessness prevention and rough sleeping, offers the potential for a more strategic and collaborative response. The increasing consensus around the central importance of social housing within the broader housing system will continue to drive innovation and good practice, including work to overcome the barriers to delivery of new social housing.

One housing market

4.25 All of the above discussion about the homes we already have should only be addressed with the understanding that successful neighbourhoods are almost always a mix of different house types, tenures, values and styles, built in and around the other features of a place that anyone would want to live in - good public transport facilities, green space, excellent schools and health provision, and a thriving local high street. In housing terms, we need to be careful not to consider and act on each tenure in isolation. It is clear on the ground that ‘social housing estates’ are now a mix of social tenants, private renters and owner occupiers. Private renters are found on almost every street in Greater Manchester. People move from one tenure to another every day, and individual homes too can change tenures in a paper transaction. It is the complex interaction of those decisions we need to consider as we create, implement and monitor the impacts of our strategies and interventions as we endeavour to meet the housing need of Greater Manchester’s residents.

Box 2: Affordability

Affordability is one of the central drivers for Government's recent interventions in the housing market nationally - for example the financial barriers facing potential first time buyers are behind the creation of Help to Buy, an £19.7 billion programme since 2013. But there is no single agreed definition of affordability[19], no single agreed point at which housing is 'unaffordable', and an ever wider official definition of 'affordable housing'.[20]

There are several different elements that need to be considered. Household income is clearly an important element, and there is a rule of thumb among commentators that housing costs start to become unaffordable once they go beyond 30% of household income. But one common response to housing costs is for households to reshape themselves - adult children staying with or moving back to the parental home, or groups of individuals and couples sharing a single property and dividing an otherwise unaffordable rent into affordable chunks.

A simpler and more common approach is to compare house prices to incomes or earnings. This can be varied by looking at median or mean figures, or lower or higher quartile if a particular segment of the market is being examined. This is often used to compare and map more or less affordable areas. Clearly, this only relates to owner-occupation, which in Greater Manchester comprises only 61% of the market, and variations in interest rates will greatly alter the actual affordability of a particular price-income ratio (high ratios in 2018 being achievable in part due to a long period of historically low interest rates).

It also ignores the real costs of house purchase - for most potential buyers, the biggest financial hurdle is the need to save a deposit (hence the design of Help to Buy). The monthly cost of paying a mortgage is often less than first time buyers have previously paid in the private rented sector. That deposit hurdle is increasingly being cleared with the help of the 'Bank of Mum and Dad', for those lucky enough to have suitably wealthy/generous family connections. This illustrates another complicating factor in judging affordability - measuring only household income, without including savings or wealth (especially for those who already have some equity in an existing property) can lead to misleading conclusions.

In the rental market, another set of benchmarks exist, with 'Affordable Rent' properties being defined as costing a maximum of 80% of market rent in an area. Local Housing Allowance rates are used to calculate Housing Benefit for those renting privately, with the Rent Officer setting a benchmark based on the 30th percentile of actual rents being paid in an area.[21]

Another approach is to look at 'residual income' - calculating a benchmark for the income needed by a typical household for the non-housing costs of a minimum standard of living, with the income remaining then considered available to meet housing costs.

As shown here, determining affordability is a complex task and justifies further work and analysis to truly understand the affordability pressures in Greater Manchester. We know the cost of housing can be a challenge to different cohorts within the housing system across Greater Manchester - including those needing access to social rent or trying to maintain a tenancy as welfare rules are squeezed, private renters sharing and saving as prospective First Time Buyers looking for routes into home ownership, people in unstable employment in any tenure, older owner-occupiers without the resources to maintain a decaying property, or people living in overcrowded properties because they cannot afford or access a home large enough to meet their needs.

We need to embrace the complexity of the issue to help better inform decisions about the new homes needed which our residents can afford. We will shortly be setting out our definition for affordability and affordable housing in Greater Manchester which will help us in our work to deliver homes and a housing market that is truly affordable to all our residents.

Chapter 5 –The homes we need and how to build them

A spatial context

5.1 The Greater Manchester Spatial Framework will establish the strategic context for the delivery of new housing as a key part of making Greater Manchester an inclusive city region, setting out the importance of achieving a mix of values and tenures, of the delivery of affordable homes, the right balance of different types and sizes of homes, the importance of quality design of new homes and their context in the surrounding neighbourhoods, and the supply of land to achieve those objectives.

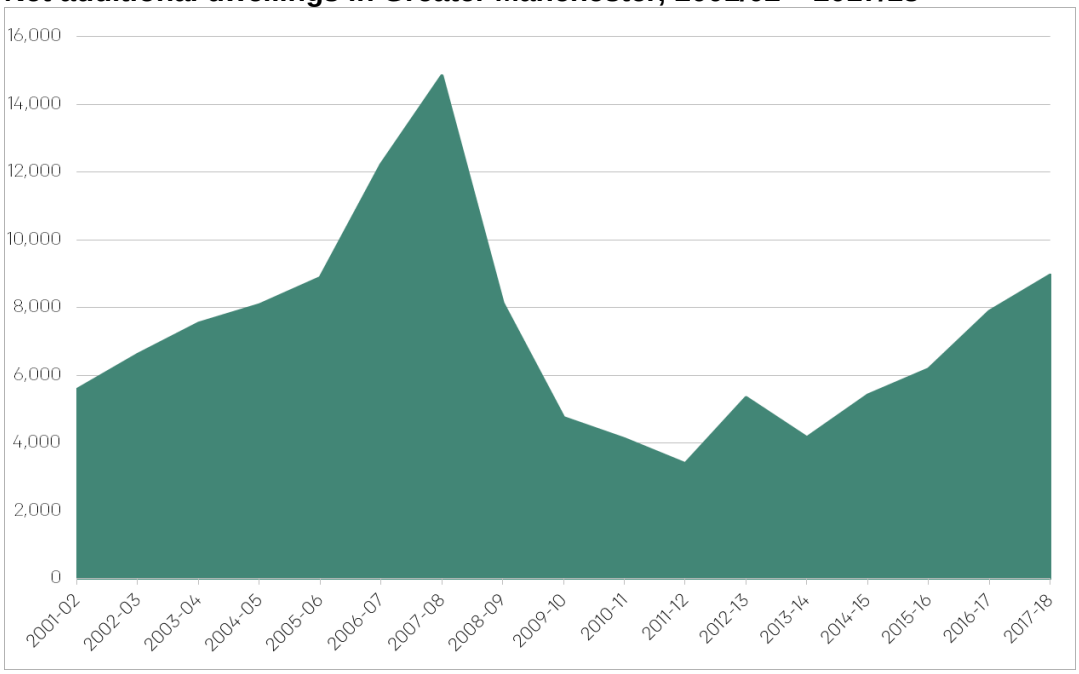
5.2 The Spatial Framework sets targets to build at least 201,000 new homes over the period 2018 to 2037 in Greater Manchester. It will seek to connect that supply of new housing to wider strategies and policies including around the quality of place, town centres and other spatial priorities, infrastructure provision including schools, health facilities and other social infrastructure as well as power, water and transport, access to open space, economic growth, flood risk and sustainability. This provides Greater Manchester with a unique city region wide spatial approach to the delivery of the new homes we need, integrated into an agreed strategic framework and, once adopted, will give developers, landowners and investors a clearly articulated and consistent policy context to work within.

Delivering the homes we need

5.3 The challenge of turning that vision into reality is undoubtedly a significant one, but Greater Manchester has strengths, experience and opportunities which provide confidence that our ambitions are realistic and deliverable. In purely numerical terms, housing delivery has continued to recover from the post-2008 trough with a continuing upward trend from 2013 onwards, with recovery coming first in and around the regional centre, but since becoming apparent more broadly.

5.4 While traditional market delivery of new homes for sale naturally forms an important baseline supply, there is a growing diversity of supply, and a number of interventions in place or forthcoming to enhance and support the delivery of a variety of new homes in Greater Manchester. The Greater Manchester Housing Investment Loan Fund, managed by the Greater Manchester Combined Authority, provides a £300 million revolving pot to support the delivery of private sector-led development of new homes. As at April 2019, the Fund has committed to help finance the delivery of 5,800 new homes, and is intended to support up to 10,000 new homes over ten years. The Fund is guaranteed jointly by the ten Greater Manchester districts, and represents a significant commitment to accelerating the delivery of new homes.

Net additional dwellings in Greater Manchester, 2001/02 – 2017/18



Source: MHCLG Live Table 122 Net additional dwellings by local authority district, England

5.5 One of the projects supported by the Fund is a joint venture between the GMCA and 10 housing providers, to establish a new delivery vehicle bringing together investment from the housing providers and, once fully established, working to deliver 500 new homes per year, over and above their delivery of new affordable housing. This is part of Greater Manchester Housing Providers' collective commitment[22] to double their delivery of new homes, to 16,000 over five years from 2018, which will in part be aided by Great Places' confirmed strategic partnership with Homes England, offering greater certainty about long-term Homes England programme funding.

5.6 Greater Manchester is also seeing significant delivery of new homes built specifically to be managed over the long term as private rented properties, and backed by financial institutional investment. While this is undoubtedly an important element of the new-build apartment market around the city centre of Manchester/Salford, there is also growing investment in new-build family houses in the rest of the city region. Matrix Homes, a joint venture between Manchester City Council and the Greater Manchester Pension Fund, brings Pension Fund investment and City Council land together to deliver a mix of rented and for sale homes on sites across the city.

5.7 We have already outlined the case for increasing the supply of social housing. Social housing reduces costs for temporary accommodation, allows local authorities flexibility when dealing with vulnerable individuals and provides a hugely beneficial impact on the rest of the housing market. Numerous obstacles exist to local authorities and housing associations to the delivery of new social housing: notably Right to Buy, and its potential roll-out to housing association properties, compromises the asset security necessary to justify investment in new properties. As a Combined Authority, Greater Manchester

is committed to finding ways through a problematic legislative and financial environment to maximise the delivery of social housing. We will work with housing providers, local authorities, Homes England and government to maximise investment in new social housing, including through the strategic partnership which Great Places and Homes England have established.

5.8 Our relationship with Government will naturally be crucial in our ability to deliver the homes we need. We have a strong record of delivery and joint working with Homes England who, then as the Homes and Communities Agency, have been formally linked to our devolved structures since the City Deal[23] agreed in 2012. Subsequent investment includes the GM Housing Investment Loan Fund noted above, and significant funds agreed and in negotiation through both elements of the Housing Infrastructure Fund, as well as substantial investment in affordable homes and supported and specialist accommodation.

5.9 Infrastructure enables prosperity, social inclusion and ensures that Greater Manchester is resilient to potential shocks and stresses. Greater Manchester has seen major changes over the past decades and this is expected to continue, if not accelerate further in the future. The Independent Prosperity Review[24] concluded that Greater Manchester's future growth, prosperity and sustainability will be restricted unless ambitious and long-term infrastructure solutions are found. To succeed we need effective infrastructure that is planned for and integrated with strategies for housing, economic development and the environment. In January 2019, we launched the Greater Manchester Infrastructure Framework 2040[25] which frames the challenges that need to be addressed. We also established a new Strategic Infrastructure Board to take ownership of the framework and progress it into an action orientated plan.

5.10 We have already begun to bring extra delivery capacity and expertise together at Greater Manchester level to assist in the enabling work needed to make housing projects happen, working alongside districts' own teams, Homes England, developers, housing providers and landowners, and to bring forward schemes using GMCA's own assets. We will continue to explore options to aid the delivery of the homes we need, including through a closer and stronger relationship with Homes England as the key arm of Government charged with 'making homes happen'. This will include the use of devolved powers such as the ability to establish Mayoral Development Corporations, and the potential for a Greater Manchester direct delivery vehicle, and continuing and expanding our One Public Estate work to identify opportunities to deliver housing on public land. There is also potential for joint working to improve the effectiveness of work on issues such as compulsory purchase processes, or viability assessment and associated negotiations.

Town centres and brownfield sites

5.11 New homes can play an important role in the revitalisation of our town centres. A mix of new homes can help to maintain and increase activity in town and district centres as the challenges offered by the restructuring of the

retail market continue to impact. A town centre's role as the heart of the community is not based solely on shopping, but includes being the place where public services can be accessed - libraries, advice and support services, health and leisure facilities - and where social and cultural life, coffee shops, restaurants, and pubs are found and people meet.

5.12 The Mayor's Town Centre Challenge has focused attention and brought different stakeholders and communities together to plot a new future for town centres across Greater Manchester. Town centre living is a common theme - and while there is rightly a focus on how more residents can increase activity and footfall for local businesses, we need to think about how we make town centres attractive places to live. In part, it is those facilities and the public transport connectivity that centres generally offer that form the basis for that appeal.

5.13 Beyond that, by improving the quality of urban design, reducing air pollution and congestion, opening up access to green spaces and rivers and canals, planting trees, restoring and enhancing the historic buildings that give towns their unique identity, town centres can become places where people of all ages will choose to live. This has been proved in the centre of Manchester and Salford over the last 25 years, where residential development was at the forefront of the transformational change that is still going on today. We can apply and adapt that experience to town centres around Greater Manchester.

5.14 Beyond town centres, Greater Manchester has a land supply dominated by previously developed land - 'brownfield sites'. These are hugely varied in terms of their back story - some are still occupied by historic mills with rich architectural – though not always financial - value, some are long vacant and in need of substantial remediation work to clean up the remnants of old industrial uses. A few have been disused for so long they are almost 'greenfield' again.

5.15 Because brownfield sites are within the grain of existing communities, they are often ideal locations for new homes to meet the needs and aspirations of those communities. We need to find the right tools and funding models to make that happen, including support for smaller, local developers who are often well placed to identify and deliver these opportunities. Some sites will pose significant challenges to make them financially viable and will need public sector intervention and investment, but it can be done. Our Strategic Housing Land Availability Assessment prepared as part of the Spatial Framework tells us this is deliverable, as 87% of land identified for housing covering the period up to 2037 is on brownfield land within the existing urban area.

What are we building?

5.16 As already discussed, through the Greater Manchester Spatial Framework we are setting plans for a sustainable and resilient Greater Manchester, with the commitment that all new homes and buildings built within Greater Manchester

will be net zero carbon by 2028 with the aim of delivering a carbon neutral city region no later than 2038, with a dramatic reduction in our greenhouse gas emissions and net gain for biodiversity. The Spatial Framework will also establish the strategic picture in terms of the mix of homes to be delivered. We know from the discussions that have informed the development of this strategy that around Greater Manchester, and from one neighbourhood to the next, the homes that are needed to fill the gaps in the current supply vary considerably. In some areas where affordability is the biggest challenge, the key shortfall is in social housing; in others there is a need to add greater variety and quality to increase choice and value. New housing is one of the tools we have to try to weaken the relationship between tenure, place and poverty.

5.17 As highlighted in the box on affordability, there are several different groups of households under particular pressure to meet the cost of their homes. Through our supply of new homes we should be providing better choices to ease those pressures - whether that is adding to the stock of social rented housing to reverse the losses from Right to Buy, bringing forward new models that help households to access home ownership in a way they can afford and sustain, or providing homes of all tenures better matched to the need of older households who are currently living in homes which present a risk to their wellbeing and continued independence. There is a need to develop more supported housing to provide more effective routes away from homelessness, but also for a range of others whose needs are currently being inadequately met in mainstream housing, or in expensive and inflexible institutional settings. And many places in Greater Manchester need a better mix of properties for owner-occupation to meet modern expectations and give choice to households to encourage them to stay in their neighbourhood as their family grows.

A modern construction sector

5.18 The UK construction industry and its labour model, particularly for housing development, is at a critical crossroads, as outlined in the Farmer Review.[26] The construction sector in Greater Manchester currently employs around 90,000 people, and over 45% of the sector's output is accounted for by housing projects. Despite increasing numbers, the construction industry has significant levels of hard to fill vacancies and skill shortages. There is also a shortfall of training at higher levels, with the majority of in-house training at Level 2, and not enough apprentices climbing up through the skill levels, at a time when Level 4+ jobs are increasingly regarded as essential for construction sector innovation. The construction workforce in Greater Manchester is also ageing, with 32% aged 50 and over, up from 25% in 2007.

5.19 The baseline economic forecast for the city region suggests demand for an additional 19,000 jobs in the construction sector by 2035. Demand is currently exceeding employment estimates for many of the key construction occupations, suggesting a need for significant extra training, and reliance on

migration from neighbouring areas and regions. Shortfalls are particularly high in professions including architecture, surveying and bricklaying, as well as for glaziers where the demand exceeds local supply by nearly 25%.

5.20 We need to work with the sector and education and skills providers to close these gaps, and with housing providers and other key partners to use the power of their supply chain to encourage a stronger commitment to skills development and retention within the industry in Greater Manchester, as well as issues of place-making, culture, build quality and architectural design. There is the potential to achieve more through closer collaboration between employers and educators, especially given the likely sustained longer term demand for these skills (both for new build and for maintenance and retrofit of existing properties).

5.21 Off-site and precision manufacturing for construction could help the sector to meet demand. Precision manufacturing technologies can help to minimise wastage, inefficiencies and delays that affect on-site construction, whilst also raising the energy efficiency performance of buildings. This can make a significant contribution to our ambitions for all new dwellings and buildings to be net zero carbon by 2028 with the aim of delivering a carbon neutral city region no later than 2038.

5.22 The Greater Manchester Industrial Strategy identifies the development of large scale modular construction facilities as key to deliver these clean growth ambitions Greater Manchester should aspire to be a centre of modern building practices and techniques. Modular build and other technologies may be in their infancy in the UK residential context, but we should be doing everything we can to pave the way for their use in the future, including learning from international examples where these techniques are an established part of the supply chain. This transformation can also help to change the perceptions of the sector as a potential career, and aid efforts to diversify the construction workforce.

5.23 Industries around modular build components should be encouraged to locate in Greater Manchester to capture economic benefit of our housing growth plans, and apprenticeships and training in modular build techniques should be encouraged to train our workforce in these innovative practices.

Box 3: Community-led housing development

We should also explore alternative models of community ownership to allow communities to retain influence and control over developments once complete. Community Land Trusts can be an effective method of preserving an area from gentrification, often useful to preserve cultural and community spaces.

We are also creating pathways through which community organisations can set up and start their own community-led housing projects, including co-operatives, co-housing and social-housing models. Community-led housing can serve multiple roles in promoting community resilience, social cohesion, tackling loneliness, providing affordable accommodation and allowing residents of all ages real influence over their homes.

In partnership with Homes England, North West Housing, Irwell Valley Housing Association and the Greater Manchester Housing Investment Loan Fund, the GMCA is signposting the way to seek funding in grant and loan from the Fund and Homes England, whilst providing administrative support and guidance for groups through North West Housing. Our goal is to institute a permanent Co-operative Housing Hub for Greater Manchester, helping to facilitate community-led initiatives for housing across the conurbation.

Capturing value for the community

5.24 When areas of Greater Manchester are developed and transformed, we should commit to ensuring that value we create is retained within communities and local authorities. New development should sit comfortably with the existing community, if trust and faith in the planning process is to be maintained. Communities should feel the benefits of development. We should maximise the social gains from new development, encouraging enhancement of public realm, public access and cultural and commercial use where possible.

5.25 For **communities**, the retention of value can mean several things not directly linked to financial gain:

- The restoration or protection of local heritage and local identity in a place
- The provision of cultural space, venues or public realm
- Innovative and artistic architectural design
- A legacy for local employment: apprenticeships, local employees and commitment to training

5.26 Meaningful community consultation on developments should be the norm across Greater Manchester, helping to achieve the right balance between the pressures of household growth and our need for new housing with the protection and enhancement of the character, assets and environment of our communities.

5.27 Best practice shows proper community engagement can have a transformative effect, particularly in relation to the design of public realm. This is a model Greater Manchester should aspire towards, allowing every resident

to feel they have a stake in the economic, social and cultural success of their community and the city region.

5.28 For **local authorities**, value capture covers a range of approaches to retaining generated wealth or influencing the shape of development to reinvest in future service delivery or deliver other positive outcomes. This philosophy can be applied in a number of ways.

5.29 Through the planning system, planning obligations, Community Infrastructure Levy and the Section 106 process offer the opportunity to secure contributions to the delivery of infrastructure, environmental and other enhancements and provision of affordable housing. The National Planning Policy Framework currently prioritises viability for developers (including a notional rate of expected profit), meaning local authorities must engage in extensive negotiations with developers to secure substantial contributions. The Community Infrastructure Levy route, intended to short-cut that negotiation process, has not proved appropriate in a Greater Manchester context. As part of this strategy, Greater Manchester districts will engage in joint work to assess and develop best practice and a consistent approach to the negotiation process, to enhance the contributions to local communities from future development, but potentially also offering greater certainty and pace to developers.

5.30 Where possible, there should be a commitment to examine the potential for retaining ownership of land and investing in projects which bring a sustainable return, or which generate a saving for other services such as the NHS or social care. The use of in-house development vehicles and joint ventures can also help to recycle investment back into the public purse to the benefit of the local community, and continued ownership or lease of assets once complete can return steady rental incomes.

Box 4: One Public Estate and Mayoral Development Corporations

Through work under the 'One Public Estate' programme, we have been working in recent years to better understand and map the land and buildings in the ownership of the whole range of the public sector - including local government, the health sector, central government bodies and the police and fire services. That has to be driven first by the needs of the public services and the local communities they serve, so that the schools, hospitals, fire stations etc. we all need are provided. But, in responding to and supporting the transformation of public services, there is the potential to unlock public land or buildings for other uses. It is important that we manage that strategically so that we can use those assets to deliver other priorities, including housing.

A Mayoral Development Corporation (MDC) has powers to acquire and develop land to deliver regeneration and economic development. The establishment of an MDC is a very statement of intent to the market of the public sector's long-term commitment to regeneration in a defined area. In September 2018 the Greater Manchester Combined Authority agreed to support in principle the creation of a Stockport Mayoral Development Corporation to help drive the regeneration of the Town Centre West. It also agreed a draft set of principles for any further MDCs to be established around Greater Manchester.

The focus on the regeneration of this part of Stockport is a key part of the Mayoral Town Centre Challenge which was launched in November 2017 with aims including ensuring a stronger housing and employment offer is developed in Greater Manchester's Town Centres as their role as retail centres changes, and ensuring that we maximise the opportunity of developing brownfield land in sustainable locations. This integrated regeneration approach is vital to maximise the viability of such brownfield land sites for housing and employment. The Stockport MDC will be the first in the country to focus on a town centre and represents a completely new way in which devolved powers can help us deliver our ambitions for our town centres.

5.31 We will work with local authorities and other public sector bodies including the NHS in Greater Manchester to explore multiple options when developing sites in their control, based on assessments of their preferred land use and invest-to-save options rather than simply revenue from sale. This is most effective when considered across organisational boundaries, so that potential value for other partners is understood and factored into decision-making. Housing is only one of the potential outcomes of this approach, but one of the more promising areas of collaboration lies in the development of supported housing or extra care schemes to help ease the pressure on NHS and the social care system by promoting and extending independent living.

Chapter 6 – Delivering change - how we will get there

6.1 We have tried to build this strategy on a comprehensive and robust evidence base, and will continue to invest in developing, mapping, improving and extending our evidence to show what is working and to consider what changes are needed. This strong evidence base is complemented by the wealth of practical experience and knowledge of elected members, officers, providers, investors, developers, industry professionals, voluntary groups, campaigners and, most importantly, current and future residents who contributed to the discussions which have informed this document.

6.2 We now need to move from strategising to delivery. We will produce a detailed Implementation Plan to complement this strategy. This will be a living document, regularly reviewed and updated as progress is made, new data emerges and the issues we are wrestling with evolve. But that level of detail must be based on an agreed, clear set of strategic priorities for action with the support of the broad range of partners, some local, some working across Greater Manchester and some further afield, who will be essential to making significant progress.

Strategic priorities for action

6.3 The analysis and objectives we have set out in this Strategy have been structured around three main elements:

- the connections between housing, people and place in Chapter 1;
- the homes we already have in Chapter 2; and
- the homes we need in Chapter 3.

6.4 But the actions which flow from that don't necessarily fit within that structure – in fact, we should actively seek actions which address more than one element of our strategy. So, we set out in the table over the next few pages a series of connected strategic priorities for action at a Greater Manchester level, designed to maximise the impact of our collective efforts across the city region, and to complement and support the huge amount of work and investment going on every day at district and neighbourhood level. Alongside these (are issues where we will look to influence and engage with government to seek flexibilities or changes in national policy, or the ability to pilot new approaches. We also suggest headline measures of success – how in broad terms we will know if we are making progress. All of these will be developed in more detail in the Implementation Plan.

6.5 Briefly, the actions fall under two strategic priorities:

Strategic Priority A: A safe, healthy, accessible home for all

A1: Tackling homelessness and rough sleeping

A2: Making a positive difference to the lives of private tenants

A3: Developing healthy homes services to support vulnerable households

A4: Improving access to social housing for those who need it

A5: Identifying pathways to volume domestic retrofit and reducing fuel poverty

Strategic Priority B: Delivering the new homes we need

B1: New models of delivery

B2: Investing in truly affordable housing

B3: Increasing choices in the housing market for Greater Manchester households

6.6 Alongside the strategic priorities set out in the table we identify three enablers, essential for the delivery of our ambitions – partnerships, evidence and lobbying. The diagram below illustrates the overall approach.


new delivery
models
increasing
choices
better private
renting
retrofit
fuel poverty
delivering the new
homes we need
affordability
£
safe, healthy, accessible
homes for all
healthy
housing service
social
housing
homelessness
rough sleeping
GREATER
MANCHESTER
DOING HOUSING DIFFERENTLY
ENABLERS
partnerships
evidence
data
lobbying

Strategic Priority A: A safe, healthy, accessible home for all		
A1: Tackling homelessness and rough sleeping		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Ensure no one is forced to spend a night on the streets, continuing our Greater Manchester wide winter provision for rough sleepers through A Bed Every Night. • Continue pioneering work on the Social Impact Bond for Entrenched Rough Sleepers, Homelessness Prevention Trailblazer and the Housing First Programme. • Continue to embed and support implementation of the Homelessness Reduction Act into service delivery across Greater Manchester. • Develop a ten-year homelessness strategy to ensure every resident has a safe and stable place to call home.	• *Structural changes are needed to provide more affordable homes, greater security of private renting and more support to those who need it, to help tackle the long-term causes of homelessness and ensuring the supply of move on options.*	Ending the need for rough sleeping Reducing homelessness
A2: Making a positive difference to the lives of private tenants		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Greater Manchester trusted landlord scheme to encourage and support landlords providing a safe, decent and secure home to their tenants, working with national and regional landlord and letting agencies networks. • Better information and support to tenants in the PRS to help them understand their rights and obligations, and to empower them to take action to ensure landlords meet their obligations.	• *We will make the case for more ambitious controls in the private rented sector, moving away from piecemeal national changes to a more strategic approach which better protects tenants. We will seek devolved powers to designate areas for selective landlord licensing, arguing for Scottish models of security of tenure and lobbying for greater resources to enforce and raise standards in the private sector.*	Improving conditions and more secure tenancies in the private rented sector

• Consistent, coordinated approach to enforcement of standards in the PRS across Greater Manchester by districts and key partner agencies, including targeted interventions against rogue landlords. • Expand existing ethical lettings agency models to grow their scale and impact on the PRS market across Greater Manchester • Develop place-based programmes of intervention and investment in the PRS at neighbourhood level, building on the learning from existing initiatives (e.g. One Manchester/Manchester City Council's work in Gorton) and linked to broader place-based strategies.	• *We will argue for greater influence over the welfare system in Greater Manchester, including piloting the linking of payments of Housing Benefit/housing element of Universal Credit to the condition of properties. We would welcome the opportunity to pilot the Rugg Review proposal for 'property MOTs' for homes in the private rented sector, tied to a comprehensive register of PRS homes.* • *Make the case for additional powers for local authorities to intervene, especially where the safety and security of our residents is at risk from the effects of poor housing or rogue landlords, or where we can see ways to remove barriers to delivering the new homes we need.*	
A3: Developing Healthy Homes Services to support vulnerable households		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Extend and adapt the Home Improvement Agency/Care & Repair type model to provide an effective route to support households living in poor quality accommodation, particularly vulnerable households in the private sector, to improve their quality of life and reduce demand on public services by better enabling safe, independent living. • Deliver strategic approach to supported housing across the ten Greater Manchester districts, including by exploring opportunities for devolved capital from Homes England and NHS England, to help achieve an effective and sustainable supported housing market.	• *Campaign for neighbourhood renewal investment on a business case based on the costs of poor housing in terms of health and social care, to provide the tools, capacity and sources of funding to directly intervene in raising standards of homes across all tenures.* • *Build a business case to drive integrated commissioning strategies, using devolved structures to bring together revenue and capital funding streams to develop an effective and sustainable supported housing market.*	Enable residents to live independently in their homes for longer

A4: Improving access to social housing for those who need it		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Ensure the processes for allocating social housing are fit for purpose, and explore benefits of a consistent Greater Manchester housing allocations framework • Achieve a better match between provision and allocation of social housing and the needs of vulnerable households whose existing housing situation exacerbates their health or other care needs.	• *Lobbying for access to stable devolved funding to allow a strategic programme of investment and innovation in new supported housing, housing for older people and associated support services, building on the successes of Greater Manchester Housing Investment Loan Fund.* • *Continue to make the case for increasing the supply of social housing. As a Combined Authority, Greater Manchester is committed to finding ways through a problematic legislative and financial environment to maximise the delivery of social housing. We will work with housing providers, local authorities, Homes England and government to maximise investment in new social housing, including through the strategic partnership which Great Places and Homes England have established.* • *Continue to campaign to scrap the Government's Right to Buy policy in Greater Manchester. As a minimum seek to pilot a different model with control over discounts to guarantee one-for-one replacement of social rented homes, preventing former RTB properties being privately rented and protecting new build via Housing Revenue Account borrowing from future RTB.*	Deliver at least 50,000 additional affordable homes by 2037

A5: Identifying pathways to volume domestic retrofit and reducing fuel poverty		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Encourage property owners in all tenures to invest by designing cost-effective pathways for retrofit of homes to raise energy efficiency and reduce carbon emissions across all tenures in support of 2038 target for Greater Manchester to be a carbon neutral city region	• *Our challenging targets can only happen through a combination of sustained proactive national policy and aligned priorities and resources from Greater Manchester. New mechanisms to balance up-front investments in energy efficiency with the rewards of increasing comfort are needed in both new build and existing home and building refurbishment activities if the ill health, poverty and productivity impacts of inefficient stock are to be addressed*	Residential sector makes full contribution to Greater Manchester becoming a carbon neutral city region by 2038

Strategic Priority B: Delivering the new homes we need		
B1: New models of delivery		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Through the Greater Manchester Spatial Framework, One Public Estate and Greater Manchester Rail Station Alliance, Town Centre Challenge and other town centre regeneration initiatives, Housing Infrastructure Fund projects and continued joint work with Homes England, help to ensure supply of sufficient appropriate sites for the delivery of at least 201,000 new homes by 2038. • Establish a community-led housing hub for Greater Manchester, to provide support for the development of cooperative and other community-based housing projects to deliver new homes for Greater Manchester residents. • To work with partners to develop additional sources of new and accelerated housing development and investment to complement 'business as usual' market delivery and affordable homes programmes, including the joint venture with GM Housing Providers, better use of public sector assets, provision of finance from the Greater Manchester Housing Investment Loan Fund and supporting the contribution of smaller house builders. • Encourage and support the shift to modern methods of construction (including development of a sustainable model for modular construction in Greater Manchester), increased innovation, and the expansion and reskilling of the construction sector and supply chain to raise productivity and the quality and pace of delivery of new homes, and to assist in achieving our target that all new buildings in Greater Manchester will be net zero carbon by 2028.	• *Seek flexible resources to bring forward new housing land and development to meet local needs and demand, tying together the Housing Infrastructure Fund, Shared Ownership and Affordable Homes Programme, and loan/investment funding at a Greater Manchester scale to ensure strategic approach to a pipeline of residential land and development, better tied to development of necessary infrastructure. Continuing to make the case for a devolved strategic partnership arrangement with Homes England to fairly allocate housing investment and give Greater Manchester local control of funding to accelerate the delivery of new homes to meet our housing needs.* • *Through the Local Industrial Strategy, make the case for a partnership with Government to achieve better alignment of education, training and employment activity in Greater Manchester, including for the construction sector.*	Delivery of at least 201,000 new homes by 2038, including up to 10,000 units from the Greater Manchester Housing Investment Loan Fund Greater Manchester to be a centre of modern building practices and techniques, and a pioneer of models of community-led housing

B2: Investing in truly affordable housing		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Consult and agree on a Greater Manchester approach to defining housing affordability, to drive better targeting of investment and interventions toward the groups of GM households most challenged in accessing homes they can afford. • Develop a clearer, more consistent and systematic approach across GM to capturing and recycling value generated by market development in the form of additional affordable housing and other community benefits. • Find routes to invest in the provision of additional affordable housing, including social rented housing, to reduce local authorities' reliance on expensive and often poor quality temporary accommodation, and to provide stable, high quality homes for Greater Manchester residents unable to afford decent housing through the market, meeting the Greater Manchester Spatial Framework commitment to deliver at least 50,000 additional affordable homes by 2037, with at least 30,000 being for social rent or affordable rent.	• *Lobby for the freedom to develop a strategic approach to developer obligations and viability issues that fits within the Greater Manchester market.*	Set out a Greater Manchester definition for affordability Deliver at least 50,000 additional affordable homes by 2037

B3: Increasing choices in the housing market for Greater Manchester households		
What we'll do	**Making the case to Government**	**Desired outcomes**
• Recognising the challenge many Greater Manchester households face in accessing the homes they aspire to in the current market, develop alternative models and pathways which will assist key groups to achieve secure, high quality homes. • Develop a more strategic approach to market provision or public sector commissioning of housing suitable for specific groups, including older households looking for better 'rightsizing' choices in their own communities or families with children in the private rented sector.	• *Developing and piloting new models to meet Greater Manchester households aspirations in partnership with Homes England and Government*	Deliver at least 50,000 additional affordable homes by 2037

Strategic Enablers

C: Partnerships

6.7 Much of the action and delivery associated with this strategy will happen through district and neighbourhood level partnerships, driven by local strategies and action plans. We hope that this will Strategy will give districts and their partners a framework for their own housing strategies. Greater Manchester-wide partnerships can complement local work, multiplying and sharing the impact of local learning and successes, and providing an effective way to tap into Government and other national and city-regional resources and expertise. The Combined Authority itself is built on that partnership model, and our devolved structures give us a unique opportunity to bring together public sector partners including the Greater Manchester Health and Social Care Partnership, Greater Manchester Fire and Rescue Service, Greater Manchester Police and Transport for Greater Manchester. But a range of formal and informal relationships with other stakeholders will also be crucial if we are to maximise our ability to add value at Greater Manchester level.

6.8 Our key partners include the **Greater Manchester Housing Providers** (GMHP)[27], 25 social housing providers who collectively manage more than 250,000 homes in Greater Manchester, and are committed to a wide programme of joint work on issues including health and social care, carbon reduction, homelessness, work and skills and ageing better, as well as developing new homes. GMHP and the Combined Authority signed a memorandum of understanding in 2016 setting out an agenda for collaborative working. A refresh of that memorandum of understanding will be an early objective, to include the Greater Manchester Health & Social Care Partnership, capturing the breadth of our ongoing cooperation, and setting a future direction in support of this Strategy and the latest Greater Manchester Strategy.

6.9 The **Homes England** (HE) Strategic Plan for 2018-2023[28] identifies Greater Manchester as a priority area, and our devolution deals have included a number of joint initiatives and investment tools with HE (and previously Homes & Communities Agency) which complement the significant funding provided to housing associations and other HE partners bringing forward housing development in Greater Manchester. We will continue to develop and strengthen our working relationship with Homes England, to maximise the impact of the capacity and expertise they are able to deploy to accelerate the delivery of new homes.

6.10 Beyond those, we hope this Strategy has made it abundantly clear throughout that our ambitions for Greater Manchester are achievable only in partnership with private landlords, developers and investors, voluntary sector, community groups and cooperatives, academic institutions and skills providers, NHS organisations, Government departments, infrastructure and energy providers and many others.

D: Evidence

6.11 The Greater Manchester Strategic Housing Market Assessment[4] provides a comprehensive view of many of the key elements of the housing market in Greater Manchester which we address in this Strategy. The draft Greater Manchester Spatial Framework, our Age-Friendly Strategy, the 5-*Year Environment Plan* and other Greater Manchester strategies are based on analysis and evidence of the circumstances and complexities around their respective agendas in a Greater Manchester context. But there are issues where we need a better understanding of the challenges and opportunities for positive change that we face. We will:

- Maintain, update and extend our evidence base to provide a sound basis for decisions about intervention and investment, and work to fill gaps in that evidence, including around the condition of homes in the private sector as a whole, and the nature and extent of the private rented sector.
- Evaluate the impact of the work being done to implement this Strategy, and share and apply lessons being learned in Greater Manchester and beyond to maximise that impact.

E: Lobbying

6.12 The Greater Manchester model has evolved through a dialogue with national government, over time and by agreement with Westminster and Whitehall establishing the unique governance model now in place. But there is still more to be done, more that can be achieved with greater leverage and control placed in the hands of Greater Manchester. We will continue to make an evidenced case for greater devolution where we see it will make a real difference to the lives of Greater Manchester's residents, and to influence and encourage national Government to amend legislation or regulation, invest differently, or devolve power and flexibility where it will allow us to make better progress.

Leading the change

6.13 We will be accountable to the Combined Authority and the ten Greater Manchester districts through our Portfolio Leader, and will regularly and publicly report to, and be challenged on our progress, by the Greater Manchester Planning and Housing Commission and Greater Manchester Housing, Planning and Environment Overview and Scrutiny Committee. We will ensure that there are effective means to continue the conversations, so that we retain the mix of grass-roots, professional and political views and experience that helped to create this strategy, and our Implementation Plan will give a visible and regular review of progress and future plans. We intend this Strategy to have a five year life, but through the Implementation Plan and our reporting arrangements, and our monitoring of the challenges facing Greater Manchester residents, we will regularly consider the need for a refresh of the Strategy.

6.14 We will work hand in hand with Government to make best use of the resources we have available. In return, we expect Government to ensure that those resources are fairly allocated, and that the formulas applied to their investment decisions offer a level playing field for projects in Greater Manchester that will enable us to meet everyone's housing needs.

6.15 As we stated in the Greater Manchester Housing Vision which preceded this Strategy, we know we can't do this alone, and some of these issues could need a twenty year effort to really resolve. As Greater Manchester's Mayor, Combined Authority and ten Councils we pledge to do all we can. But we know we will only succeed with the help, support and commitment of local communities, landlords, housing associations, developers, investors, landowners, the construction sector, utilities, central Government and many more. We look forward to working with you.

References

1 **Greater Manchester Strategy (October 2017).** Our People, Our Place.
https://www.greatermanchester-ca.gov.uk/ourpeopleourplace

2 **A Greater Manchester Vision for Housing (January 2019)**
https://www.greatermanchester-ca.gov.uk/what-we-do/housing/greater-manchester-housing-vision/

3 **Greater Manchester's Plan for Homes, Jobs, and the Environment (Greater Manchester Spatial Framework) (Revised Draft January 2019)**
https://www.greatermanchester-ca.gov.uk/media/1710/gm_plan_for_homes_jobs_and_the_environment_1101-web.pdf

4 **Greater Manchester Strategic Housing Market Assessment (January 2019)**
https://www.greatermanchester-ca.gov.uk/media/1733/gm-shma-jan-19.pdf

5 **UK Parliament (February 2019).** Statutory Homelessness in England
http://researchbriefings.files.parliament.uk/documents/SN01164/SN01164.pdf

6 **5-Year Environment Plan for Greater Manchester (March 2019)**
https://www.greatermanchester-ca.gov.uk/media/1986/5-year-plan-branded_3.pdf

7 **The Greater Manchester Model: Further, Faster Reforming Public Services (November 2018)**
https://www.greatermanchester-ca.gov.uk/media/1676/greater-manchester-model.pdf

8 **Greater Manchester Age-Friendly Strategy (February 2018)**
https://www.greatermanchester-ca.gov.uk/download/meetings/id/2960/10_ageing_hub_strategy

9 **Hammond, M., White, S., and Walsh, S. (September 2018).** Rightsizing: Reframing the housing offer for older people
https://www.greatermanchester-ca.gov.uk/downloads/download/211/rightsizing_report

10 **The Smith Institute (October 2018).** The hidden costs of poor quality housing in the North
http://www.smith-institute.org.uk/book/the-hidden-costs-of-poor-quality-housing-in-the-north/

11 **Greater Manchester Homelessness Action Network (February 2018).** A Draft Strategy to End Rough Sleeping, and Lay the Foundations of a 10-year Homelessness Reduction Strategy in Greater Manchester, by 2020
http://www.greatermanchester-ca.gov.uk/download/downloads/id/506/homeless_action_network_strategy.pdf

12 **Greater Manchester A Bed Every Night**
https://bedeverynight.co.uk/

13 **Greater Manchester Green Summit (March 2018)**
https://www.greatermanchester-ca.gov.uk/info/20005/green_city_region/117/green_summit

14 **Greater Manchester's Springboard to a Green City Region (July 2018)**
https://www.greatermanchester-ca.gov.uk/downloads/file/776/springboard_to_a_green_city_region

15 **The Smith Institute (October 2018).** The hidden costs of poor quality housing in the North
http://www.smith-institute.org.uk/book/the-hidden-costs-of-poor-quality-housing-in-the-north/

16 **Scullion, L., Gibbons, A., and Martin, P. (January 2018).** Precarious lives: Exploring lived experiences of the private rented sector in Salford
https://www.salford.gov.uk/media/391791/precarious-lives-exploring-lived-experiences-of-the-private-rented-sector-in-salford.pdf

17 **Rugg, J. and Rhodes, D. (September 2018).** The Evolving Private Rented Sector: Its Contribution and Potential
https://www.york.ac.uk/news-and-events/news/2018/research/housing-review-rugg/

18 **Shelter and the Nationwide Foundation.** Fair Housing Futures: Making Greater Manchester's private rented sector work for all
https://england.shelter.org.uk/professional_resources/working_with_our_partners/fair_housing_futures

19 **Meen, G. (September 2018).** How should housing affordability be measured?
http://housingevidence.ac.uk/wp-content/uploads/2018/10/R2018_02_01_How_to_measure_affordability_v2.pdf

20 **National Planning Policy Framework (NPPF) Annex 2 (July 2018).**
https://www.gov.uk/guidance/national-planning-policy-framework/annex-2-glossary

21 **Understanding Local Housing Allowances rates and broad rental market areas.**
https://www.gov.uk/government/publications/understanding-local-housing-allowances-rates-broad-rental-market-areas

22 **Greater Manchester Housing Providers (June 2018)**. Our ambition to deliver.
https://gmhousing.co.uk/our-ambition-to-deliver/

23 **City Deal: Greater Manchester (July 2012)**
https://www.gov.uk/government/publications/city-deal-greater-manchester

24 **Greater Manchester Independent Prosperity Review (February 2019)**
https://www.greatermanchester-ca.gov.uk/what-we-do/economy/greater-manchester-independent-prosperity-review/

25 **Greater Manchester Infrastructure Framework 2040 (January 2019)**
https://www.greatermanchester-ca.gov.uk/media/1715/greater-manchester-infrastructure-framework-2040.pdf

26 **The Farmer Review of the UK Construction Labour Model (October 2016).**
http://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2016/10/Farmer-Review.pdf

27 **Greater Manchester Housing Providers**
https://gmhousing.co.uk/

28 **Homes England Strategic Plan 2018/19-2022/23 (October 2018)**
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752686/Homes_England_Strategic_Plan_AW_REV_150dpi_REV.pdf

PLANNING, HOUSING & ENVIRONMENT SCRUTINY COMMITTEE

Date: April 2019

Subject: Consultants Report - Smart Energy Plan and supporting appendix for GM

Report of: Cllr Alex Ganotis, GM Green City Region Lead

PURPOSE OF REPORT

The purpose of this paper is to present a consultant's report, by Energy Systems Catapult, which forms one of the key outputs from the Greater Manchester Green Summit in 2018. The report aims to support GM's achievement of the Green Summit aspiration for the City Region to be carbon neutral by 2038.

The report details what a Whole System Smart Energy Plan for GM might cover, it makes recommendations for further consideration and suggests a potential delivery roadmap to 2023. Suitable recommendations from the report have been incorporated into the GM 5 Year Environment Plan, launched in March 2019. The 5 Year Environment Plan is a high level document; the purpose of the Smart Energy Plan report is to provide additional detail on the these measures.

RECOMMENDATIONS:

Scrutiny is asked to:

- Note the contents of the ESC report, its recommendations and Roadmap
- Provide comment on the report prior to its submission to CA, for noting, in May 2019.

CONTACT OFFICERS:

Mark Atherton, Assistant Director of Environment, GMCA
mark.atherton@greatermanchester-ca.gov.uk

BACKGROUND PAPERS:

Greater Manchester Spatial Energy plan
http://es.catapult.org.uk/wp-content/uploads/2017/08/Compressed_GMCA_Spatial_Energy_Plan_2016_11_07-LATEST-ilovepdf-compressed.pdf

Greater Manchester's Springboard to Green City Region
https://www.greatermanchester-ca.gov.uk/info/20005/green_city_region/117/green_summit/2

1. Background

1.1. The Green Summit, held in March 2018, set out Greater Manchester's aspiration to be carbon neutral by 2038, meeting the challenge of climate change and supporting the transition to a smarter and cleaner future whole energy system.

1.2. As one of the Green Summit outcomes, Energy Systems Catapult (ESC) were funded by the Department for Business, Energy and Industrial Strategy (BEIS) to proposed a whole system Smart Energy Plan for consideration by GMCA. Suitable recommendations from the report have been incorporated into the GM 5 Year Environment Plan, launched in March 2019, launched at the 2019 Green Summit.

1.3. Advice and guidance has been provided into the draft report by a range of regional stakeholders including GMCA, Electricity Northwest (ENWL), TFGM and Anthesis, to ensure consistency with other plans and evidence bases. The reports' contents and conclusions are currently being tested with a wider number of key partners. Minor technical changes might therefore be required prior to submission to GMCA for noting.

2. Summary

2.1. In producing the report, ESC has taken into account the outcomes and feedback from the Green Summit 2018, work completed to-date by GMCA and partners, plus two modelling tools (SCATTER and ESME). The SCATTER pathway is combined with the Energy System Modelling Environment (ESME), to provide 5-year goals, against 4 focus areas.

2.2. The report is presented in two parts, the main content articulating the challenge, background, proposed approach (recommendations), benefits and 5 year roadmap, plus an Annex. The Annex is intended to be a living document which, following agreement, could be expanded to detail existing activity which delivers against the 4 proposed focus areas and 2023 goals.

2.3. The regional 5-year steps towards carbon neutrality in 2038 provides a managed decarbonisation approach, and affords the potential for continual review against delivery and technological innovations.

3. Regional Energy Challenge

3.1. Achieving carbon neutral by 2038 will require a transformational change to the way that GM generates and uses energy. GM will need to significantly accelerate the rate and scale of new energy generation, storage, efficiency and low carbon transport infrastructure, combined with smart systems (management and aggregation) to reduce and shift peak energy demand.

3.2. The report draws upon previous studies and modelling, including the GM Spatial Energy Plan: Evidence Base (2016). This suggests that the electricity distribution network within GM currently has the capacity to accommodate new demand, although some areas have

limited spare capacity. Growth of decentralised renewables, electrification of heat and increased use of electric vehicles will all pose significant future challenges.

3.3. The key challenge is that GM currently uses 51.6 TWh/yr. of energy and emits 12.5 $mtCO_2$/annum. However, if we incorporate expected future growth to 2035, this will, unless action is taken, lead to a 3% increase in energy demand, arising from heating and electricity use in new homes and buildings. Furthermore, to be successful this energy transformation needs to be commenced immediately, with significant carbon emission reductions required (15% pa) over the next 5 years.

3.4. The consultants suggest that the challenges can best be met though adopting a whole systems perspective, resulting in a smart and integrated approach with focused goals of:

- Generation and storage- 45MW of additional generation by 2024
- Decarbonisation of heat - 10.2 TWh of low carbon heat by 2024
- Low carbon transport - Up to 200,000 low carbon vehicles by 2024
- Diversity and flexibility - 30-40MW of diverse/flexible energy load by 2024

3.5. These challenging targets are presented within a 5-year roadmap, providing a route to achieving GM's aspiration and ensuring the region is on trajectory towards achieving 2038 carbon neutrality whilst also leading to potential for cost avoidance, revenue generation and energy security.

3.6 The report provides 3 key recommendations to accelerate delivery:

- Firstly, exploring the **expansion of current local area Energy planning** – it is suggested that GM expands on the Local Area Energy Planning (LEAP) work completed with Bury to ensure GM future proofs development and delivery of its energy assets
- Secondly, GM should optimize the use of current assets and partnerships to **form an Energy Transition Region (regional energy innovation zone)** which could create a test bed to facilitate the demonstration of innovative and digitally enabled smart energy systems; and finally
- **The creation of an Energy Innovation Company** - to both act as an investment vehicle, while maximising cost avoidance and revenue generation from newly deployed energy assets, across the public sector in the first instance.

4.0 **Recommendations**

4.1 Scrutiny is asked to:

- Note the contents of the ESC report, its recommendations and Roadmap
- Provide comment on the report prior to its submission to Leaders, for noting, in May 2019

Item 6B

ANNEX 01

Whole System Smart Energy Plan for Greater Manchester

02/11/2018

Energy Systems Catapult

Department for Business, Energy & Industrial Strategy

GMCA GREATER MANCHESTER COMBINED AUTHORITY

Document control

ESC programme name	**Smart Systems and Heat**
ESC project number	
Version*	1.0
Status	Draft: Contains preliminary information only.
Restrictions*	Confidential / Internal use only
Release date	02/11/2018
External release ID	(if project release process requires it)

* Refer to the Information Classification Policy

Review and approval

	Name	**Position**
Author	Sean Owen	Regional Development Officer, Energy Systems Catapult / Energy Lead, Greater Manchester Combined Authority.
Reviewer(s)	Jenny Lines Richard Halsey	Senior Project Manager, Major Programmes, Energy Systems Catapult. Business Leader Modelling, Energy Systems Catapult.
Approver	Mark Atherton Emma Harrison	Assistant Director of Environment, Greater Manchester Combined Authority Business Leader Systems Integration, Energy Systems Catapult.

Revision history

Date	**Version**	**Comments**
02/11/2018	V1.0	First Draft

Document protection

Arising IP

Description	Owner	Category
All this document is Greater Manchester Combined Authority, unless separately stated	Greater Manchester Combined Authority	Public

Background IP

Description	Owner	Category*
All this document is Greater Manchester Combined Authority, unless separately stated	Greater Manchester Combined Authority	Public

*Public / Confidential (Confidentiality agreement required) / Secure (Cannot be shared)

Trademarks, licenses and disclaimers

Description	Owner	Category*
i.e. EnergyPath Network is a registered trademark of the Energy Technologies Institute LLP	ETI	Trademark

Contents

"A carbon neutral city region, with an energy system which is smart and fit for the future, low carbon and economically environmentally and socially sustainable."

1. Executive Summary

1.1. Preface for BEIS Deliverable

This Smart Energy Plan has been produced as a deliverable of the Smart Systems and Heat Phase 2 Programme, funded by the Department for Business, Energy and Industrial Strategy (BEIS).

The purpose of the Smart Energy Plan is to describe a roadmap of projects and activities that will enable Greater Manchester to respond to the challenge of decarbonising heat within the wider energy system.

While this version of the plan is a deliverable of the wider programme of work, it should be considered as a live document. The intention is that the plan will be adopted by Greater Manchester Combined Authority and will be updated as further information is gathered, opportunities become available and project scopes are developed.

It should be emphasised that this document is intended to outline possible direction and to frame potential projects. It is not intended to restrict the set of projects undertaken nor to constrain or suggest particular implementations of projects or other initiatives; it is intended that the parties retain their ability to progress in the way which responds best to their respective challenges and requirements.

This document does not indicate intention by the parties to collaborate on specific initiatives or projects identified in the plan. All the parties retain their freedom to undertake work that responds to their respective programmes of work as these evolve over time.

1.2. Executive Summary

Greater Manchester's (GM) vision is for a carbon neutral city region, with an energy system which is smart and fit for the future, low carbon and economically environmentally and socially sustainable. This Whole System Smart Energy Plan for GM provides a targeted focus for Greater Manchester Combined Authority (GMCA) and local partners, through defining a roadmap and several initial projects and activities over a 5-year timeframe.

The Green Summit[1], held in March 2018, set out GM's aspiration to be carbon neutral by 2038, meeting the challenge of climate change and supporting the transition to a smarter and cleaner future whole energy system. GM were the first UK city to propose a science-based target (Tyndall) and pathway (SCATTER[2]), to become carbon neutral and make their fair contribution to keeping global temperature change to less than 2°C. This report has taken account of feedback from citizens, businesses and experts engaged in the lead up to the Green Summit.

The GM Spatial Energy Plan: Evidence Base Study[3] identified that the electricity distribution network within GM has the capacity to accommodate new demand, although some areas have limited spare capacity and growth of decentralised renewables, electrification of heat and increased use of electric vehicles will all pose significant future challenges.

The challenge is that GM currently uses 51.6 TWh/yr. of energy and emits 12.5 MtCO2/annum. However, if GM incorporate expected future growth to 2035, as stated in the GM Spatial Energy Plan, this will, unless action is taken, lead to a 3% increase in energy demand, arising from heating and electricity use in new homes and buildings. This results in an additional 2,400 GWh/yr. energy. GM's

[1] Mayoral Green Summit Event. March 2018. Manchester.

[2] SCATTER (Setting City Area Targets and Trajectories for Emissions Reduction). Available at: https://www.anthesisgroup.com/scatter-carbon-footprint-reduction-tool

[3] Energy Technologies Institute. (ETI). October 2016. Greater Manchester Spatial Energy Plan. Available at: https://www.greatermanchester-ca.gov.uk/downloads/file/309/greater_manchester_spatial_energy_plan_evidence_base_study_exec_summary_pdf

challenge is set out within Section 4 of this Smart Energy Plan, taking research at a national level through to a GM regional level (SCATTER / ESME[4]) and local level (EnergyPath Network[5]). This provides GM with a 5-year carbon budgets and focussed goals set out within a 5-year roadmap, allowing GM to continually reassess the region's progress and direction.

GM's approach is to play a leading role in the low carbon transition, aiming to empower local, regional and national actors, whilst providing strategic direction towards a local, decentralised smart energy system. GM's vision is to become an Energy Transition Region, utilising its public estates, facilities, assets, academia and research facilities to progress innovation, through smart technologies and services, integration and optimisation within a clearly defined innovation zone, transforming GM's local energy system.

By becoming a global leader in smart energy innovation, GM aims to lead on the delivery of a decarbonised energy system, which is fit for the future. GM can implement significant changes to provide energy security for their households, communities and businesses across the region, whilst ensuring these changes and commitments have the lowest possible net cost to UK taxpayers, consumers and businesses.

The shift to lower carbon and decentralised energy provides an opportunity for innovative business models, governance and funding solutions to support whole energy system change. GM recognises that a whole system approach is required to ensure that the regions transition to low carbon is cost-effective and that individual technologies are not viewed in isolation. Equally GM recognises the importance of clear and focused goals to achieve the levels of decarbonisation needed to meet the challenge of climate change.

This plan sets out the following ambitions and focussed goals for 2024 utilising current ESME modelling in the first instance:

- Generation and storage – 45MW of additional generation by 2024;
- Decarbonisation of heat – 10.2TWh of low carbon heat by 2024;
- Low carbon transport – Up to 200,000 low carbon vehicles by 2024; and
- Diversity and flexibility – 30-40MW of diverse / flexible energy load by 2024.

This is presented within the 5-year roadmap, which provides a vision and outlines the regions aspiration to ensure GM is on trajectory to achieve 2038 carbon neutrality. The roadmap, supported by further Local Area Energy Planning (supporting an increased decentralised and low carbon generation, storage and flexibility, long term plans with near-term action on the decarbonisation of heat at a district level), a GM Buildings Retrofit Plan, the GM Environment Plan and the 2040 Transport Strategy, provides strong foundations and resources to motivate and inspire change, thus allowing growth for the future and achieving the vision of GM to become a carbon neutral city region.

[4] ESME: Energy System Modelling Environment.

[5] EnergyPath is a registered trademark of Energy Technologies Institute LLP (ETI). See https://www.eti.co.uk/programmes/smart-systems-heat/energypath.

2. Introduction

This Whole System Smart Energy Plan for Greater Manchester (GM), encapsulates the ethos of the region's industrial heritage and ability to innovate. GM's vision to support smart local energy supply against the ever-increasing demand for low carbon energy, will be achieved through collaboration and innovation, embracing new approaches shaped and driven by residents, businesses and leaders; thus, ensuring the region's energy system is flexible, accessible and secure for all.

The energy system, upon which GM's economy fundamentally relies, is rapidly changing. The challenges of decarbonisation, an ageing infrastructure and shifts in societal expectations will require new approaches to how GM generates, supplies, consumes and manages energy. This will all be supported through advances in technology and digitalisation.

The challenges this rapid change presents are massive, bringing a critical need for whole system thinking, utilising a wide range of low carbon technologies and potentially new service models. The focus for overcoming the challenges identified for the region and achieving the Smart Energy Plan's vision for GM is centred around innovation, smart and integration across four priority areas:

1. Generation and storage;
2. Decarbonisation of heat;
3. Low carbon transport; and
4. Diversity and flexibility.

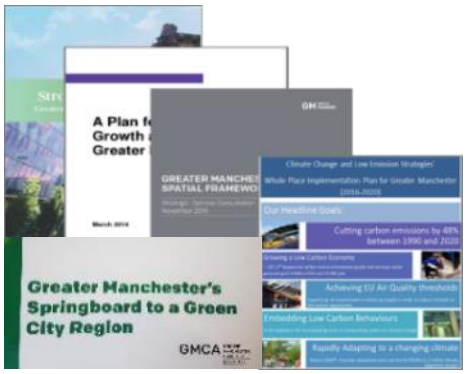
This plan aims to ensure sustainable clean growth, which is smart, economically viable and provides energy security to GM households, communities and businesses across the city region.

A smart energy system is "an approach in which smart electricity, thermal and gas grids are combined with storage technologies and coordinated to identify synergies between them to achieve an optimal solution for each individual sector, as well as for the overall energy system"[6].

The deployment of smart energy systems (including storage) will provide future flexibility services to the energy system, potentially through the form of Local Energy Markets (LEM). These services will be supported and facilitated by a range of low carbon technologies across transport and heat, which should meet the requirements needed for radical change.

The need for change set out within this plan will support and build on objectives within existing and emerging GM strategies and plans, including:

[6] Lund H, et al. (2017). Smart Energy and Smart Energy Systems. Available at: https://www.researchgate.net/publication/317122110_Smart_Energy_and_Smart_Energy_Systems/download



- Greater Manchester Strategy;
- Greater Manchester Spatial Energy Plan: Evidence Base Study;
- Greater Manchester Infrastructure Framework 2040;
- Greater Manchester Climate Change & Low Emission Plan;
- 2040 Transport Strategy;
- The feedback received in the lead up to the Green Summit contained in the Springboard to 2038 Report; and
- Support the development of the Greater Manchester Local Industrial Strategy.

Together these will support GM's Local Industrial Strategy, the Clean Growth Grand Challenge, and new opportunities for employment and skills development by providing sustained market confidence, helping to reduce carbon emissions and air pollution for the communities of GM.

This plan focuses on smart energy systems; however, it is recognised that thermal energy efficiency of buildings, i.e. fabric, is of equal value when considering a whole system approach and some energy systems will require a reasonable amount of insulation of the building prior to installation, which will be outlined within the Retrofit Plan.

GM's response to meeting the challenge of climate change and supporting transition to a smarter and cleaner future energy system is outlined in this plan. Transport and buildings retrofit (demand reduction) through energy efficiency are addressed in detail separately to this plan. This Smart Energy Plan has been informed through insight and consultation taken from the Mayoral Green Summit listening events, with local actors and expert organisations, and supported by the Energy Systems Catapult[7] (ESC).

GM has previously been at the heart of the industrial revolution and the computer revolution, this Whole System Smart Energy Plan for GM aims to explore the approach, requirements and assets required to support GM in becoming a global leader in the delivery of their future energy system. It will transform GM into a world-leading greener, cleaner, climate resilient city region, improving the health and quality of life for millions of people and protecting their green spaces and environment for future generations[8].

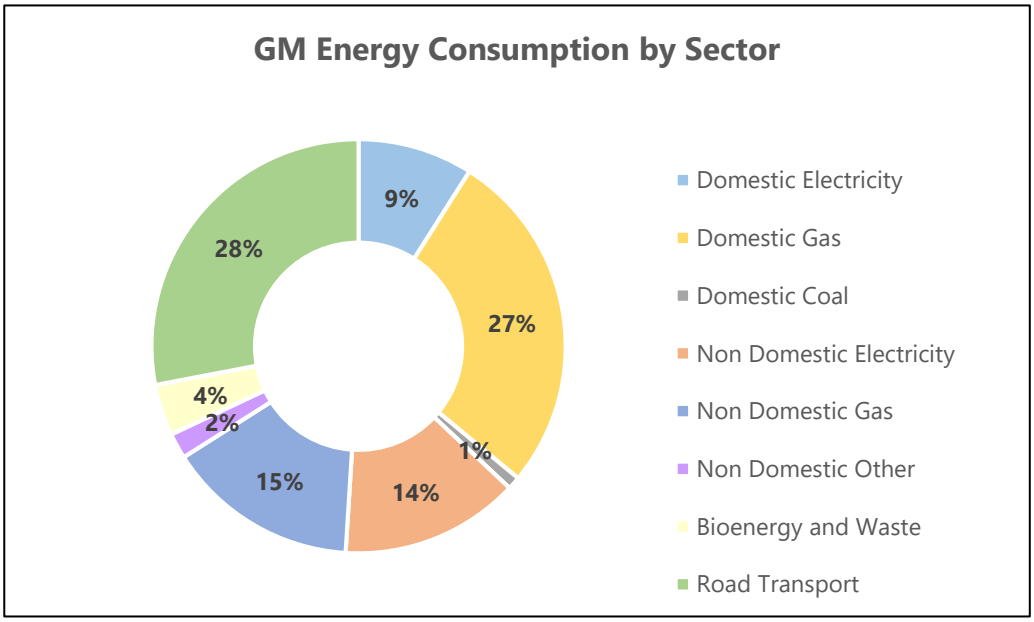
[7] The Energy Systems Catapult supports innovators in unleashing opportunities from the transition to a clean, intelligent energy system, as part of a network of world-leading centres set up by the government to transform the UK's capability for innovation in specific sectors and help drive future economic growth.

[8] Greater Manchester Combined Authority. 2018. Springboard to a Green City Region. Available at: https://www.greatermanchester-ca.gov.uk/downloads/download/196/springboard_-_a_new_environmental_vision_for_greater_manchester

3. The GM Regional Challenge

Energy provides the ability to fuel GM's local economy, sustain lifestyles, power transport and provide buildings with lighting, heating and hot water. 72% of energy consumed within GM can be attributed to buildings, both domestic homes and non-domestic offices, industrial and public estate etc. (Figure 1).

Figure 1: GM Energy Consumption by Sector



The decarbonisation of heat enables the opportunity for new business models to integrate across multiple energy streams, while optimising the wider energy system using flexible services, decarbonisation of transport, local electricity generation, the role of hydrogen and new technologies, e.g. fuel cells etc.

GMCA has been working with ESC to deliver the SSH Programme since 2013, which provides the foundation for this Whole System Smart Energy Plan for GM. The programme to date has comprised of two phases, with an initial focus on the challenge of decarbonisation of heat.

Within Phase 1, funded by the Energy Technologies Institute[9] (ETI) and undertaken by ESC, GMCA and local Stakeholders collaboratively, a Spatial Energy Plan for Greater Manchester[10] was developed, consolidating data and existing evidence relating to the local energy system to inform future energy planning and policy development in the Combined Authority.

[9] The Energy Technologies Institute (ETI) is a public-private partnership between global energy and engineering companies and the UK Government. Their role is to act as a conduit between academia, industry and the Government to accelerate the development of low carbon technologies.
[10] Energy Technologies Institute. October 2016. Greater Manchester Spatial Energy Plan. All statistics in the following section 3.1 are taken from this reference. Available at: https://www.greatermanchester-ca.gov.uk/downloads/file/309/greater_manchester_spatial_energy_plan_evidence_base_study_exec_summary_pdf

3.1. GM's Energy Demand

GM uses 51.6 TWh/yr. of energy. This is around 3% of the total UK energy use. However, energy consumption across GM districts varies significantly, with the highest consumer being approximately 2.5 times more than the lowest.

Forecast growth of new homes and non-domestic buildings in GM could increase energy demand by around 3% by 2035.

Electricity makes up 23% of GM's total energy consumption and is used to provide light, heat and power for appliances and processes.

Gas is primarily used for space and water heating and is the predominant fuel within GM, making up 42% of the total energy consumption. 95% of postcodes in GM are connected to the gas grid; however, coal and oil heating form a part of the energy mix in some GM districts. These areas often have buildings with poor thermal efficiency and elevated levels of fuel poverty.

Liquid fuel accounts for most of the remaining energy consumption. 29% of GM's annual energy consumption is transport fuel. Other fuel makes up the remaining 7% of energy consumption in GM.

Buildings and Transport

In addition to changing sources of energy to lower carbon and renewables, opportunities remain to improve the thermal efficiency of the existing building stock and reduce energy consumption. 60% of GM's domestic buildings have low thermal efficiency, with as many as 90% of these buildings expected to still be in use in 2050[11].

The greater inclusion of low carbon transport into the energy mix will be required, primarily provided by electric vehicles (EVs) and potentially hydrogen for torque intensive vehicles. This will need to be supported by electricity charging infrastructure with vehicle-to-grid / home / business (V2G/H/B) capability in the near term and supplemented by other technologies in the years to come, such as hydrogen hybrids, particularly for HGV's. There are currently 2,800 registered plug-in vehicles in Greater Manchester[12]. The National Infrastructure Assessment (July 2018) states that "most charging should be slow and smart", but "fast and rapid chargers will be needed to tackle range anxiety." [13]

The current GM EV charging infrastructure consists of a total of 160 dual headed 15kW posts (320 individual points at 7kW) and 4 rapid chargers, none of which have V2G/H/B capability. Transport for Greater Manchester (TfGM) are currently expanding the GM EV charging network, with plans to install

[11] Energy Technologies Institute. October 2016. Greater Manchester Spatial Energy Plan. Available at: https://www.greatermanchester-ca.gov.uk/downloads/file/309/greater_manchester_spatial_energy_plan_evidence_base_study_exec_summary_pdf
[12] Greater Manchester Combined Authority. October 2018. Low Carbon Hub Board. Item 06B.
[13] The National Infrastructure Assessment. July 2018. Available at: https://www.nic.org.uk/publications/national-infrastructure-assessment-2018

a minimum of 24 dual point rapid chargers by September 2019, as part of the Early Measures Project, funded by the Joint Air Quality Unit[14] (JAQU).

The growth of the charging network has not kept pace with the growth of EV stock. Between 2012 and 2016, UK electric vehicle stock has grown by 98% (from a low base), whilst publicly accessible charging locations have only grown by 44% in the same period[15]. The UK Government is aware of these issues and has reaffirmed its commitment to "develop one of the best electric vehicle charging networks in the world." [16] The Government's "Road to Zero Strategy"[17] lays out its long-term ambition for an industry and consumer led transition to a zero-emission vehicle fleet. The strategy details policies to support the development of the EV charging network, including:

- The introduction of the Automated and Electric Vehicles Bill, which will set requirements for the provision of charging points;
- Launching £400m for a Charging Infrastructure Investment Fund, £100m for a grant for plug-in-hybrids and £40m for research into creating new technologies for electric car charging; and
- Acting to future-proof street and building designs by ensuring local planning policies incorporate facilities for charging electric vehicles via the National Planning Policy Framework (NPPF).

Future adoption rates of EVs in the UK will be highly contingent on the evolution of the charging infrastructure, both public and private. GM will continue to support appropriate growth and improvement of its local charging network by seeking further private and public investment.

3.2. GM's Future Growth

The population of GM consists of 2.7 million residents and approximately 1.1 million households, with predominately pre-1980s homes. In addition to residents, GM has a thriving business community. Population and economic growth is expected to continue in GM as outlined in the emerging GM Spatial Framework[18]. The GM forecast for 2035, is to have approximately an additional:

- Circa 211,000* new homes;
- Circa 300,000* additional people; and
- Circa 7 million m^2* of additional commercial and industrial floor space, which is equivalent to over 60 more of the largest Amazon distribution centres, or 108,000 football pitches

[14] A joint unit between the Department for the Environment, Food and Rural affairs (DEFRA) and the Department for Transport (DfT).
[15] IEA Global EV Outlook 2017. Available at: https://www.iea.org/publications/freepublications/publication/GlobalEVOutlook2017.pdf
[16] HM Government. October 2017. The Clean Growth Strategy: Leading the way to a low carbon future. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf
[17] HM Government. July 2018. The Road to Zero Next Steps towards cleaner road transport and delivering our Industrial Strategy. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf
[18] Greater Manchester Combined Authority. Due October 2018. Emerging GM Spatial Framework. Available at: https://www.greatermanchester-ca.gov.uk/downloads/20018/greater_manchester_spatial_framework

This continued anticipated future growth to 2035, based upon business-as-usual, will, unless action is taken, lead to a 3% increase in energy demand arising from heating and electricity use in new homes and buildings, which will lead to:

- An additional 2,400 GWh/yr. energy;
- An increase of 0.4Mt CO_2/yr. emissions increase under business as usual activity; and
- Which represents a 3% increase in energy consumption.

However, up to 300 GWh/yr. (9%) of GM consumption of the future energy demand could be generated from local renewable energy sources, representing a CO_2 reduction of up to 2.6Mt (19%) per annum from 2014 levels. Currently, GM has 29,880 renewable electricity generation installations, with a combined capacity of 126,152 kW, which is 47.7% lower per household than the England average, based upon BEIS data[19].

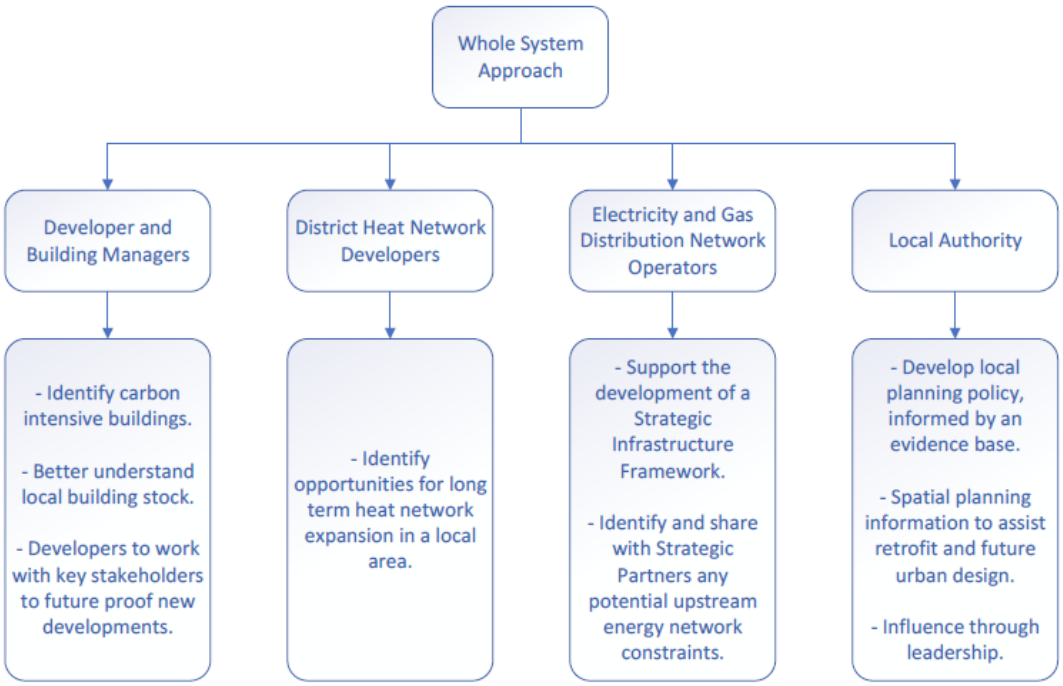
3.3. GM's Energy Potential

Recognising the scale of change needed to decarbonise the energy system, GM aspires to be the leading region in the UK to enable the transition and benefit from the innovation and green growth potential. This can be achieved through a whole system approach which identifies that no single technology will be responsible for decarbonising the current energy system. It can ensure that any changes to the current system do not have unintended consequences elsewhere, including any significant changes to the types of energy used; as well as how and when they are used.

Business-As-Usual will not be sufficient to meet the goals that have been set. For GM to continue to grow, thrive and receive socio-economic benefits (Section 7, Cost Benefits) during this transition, future energy sources must be secure, affordable and sustainable. It is recognised that the cost and efficiency of individual technologies may change over time; it is proposed that GM will undertake a review of their pathway every five years to ensure the most cost-efficient path is being followed.

[19] BEIS. 2018. Sub-regional Feed-in Tariffs Statistics. Available at: https://www.gov.uk/government/statistical-data-sets/sub-regional-feed-in-tariffs-confirmed-on-the-cfr-statistics
*This is subject to further review.

Figure 2: How GM can Influence a Whole Energy System Approach?



To meet long term carbon targets, a significant reduction in either the use of or decarbonisation of gas for heating and hot water across GM's buildings is expected to be needed and could be replaced by several lower carbon alternative energy sources. These may include: the use of electrified heating, heat provided from central locations via heat networks and the potential for hydrogen injection into the gas grid and to support more energy intensive users.

GM has seen increasing deployment of proven low carbon and renewable technologies in recent years. However, across the region, there remains a significant potential to meet future energy and heating needs, using existing known technologies and services supported by better integration to meet consumer needs:

- Heat networks (fuelled by gas in the short term);
- Solar technologies (heat and power);
- Heat pumps;
- Low carbon transport (EV and hydrogen);
- Bio fuel (from agriculture and anaerobic digestion); and
- Battery and hydrogen technologies (which could be game changers).

Other technologies (hydro and geothermal) could also support GM, however, this currently presents a lesser technical potential for the region. The need for Smart Systems and Local Energy Markets comes from the increased deployment of electric technologies and demand for energy. This presents an ever-increasing challenge for both the local Distribution Network Operator (DNO) and the Transmission Network Operator (TNO).

4. Background

4.1. National

Nationally there is a requirement to significantly accelerate the pace of decarbonisation to meet the 2023-2027 and 2028-2032 (fourth and fifth carbon budgets). One of the simpler challenges for policy is reducing emissions from electricity generation and as a result "UK greenhouse gas emissions fell 3% in 2017"[20]. Most of the reduction was from electricity generation, masking the failure to decarbonise other energy vectors, as other sectors present harder challenges for emissions reduction, with fewer aggregated sectors to aim at and the requirement for policy to drive real changes in consumer behaviour"[21].

Under the Climate Change Act (the UK's legal requirements), the two guiding objectives for the nation's approach to reducing carbon emissions are[22]:

1. To meet our domestic commitments at the lowest possible net cost to UK taxpayers, consumers and businesses; and
2. To maximise the social and economic benefits for the UK from this transition.

To meet these objectives, the UK will need to nurture low carbon technologies, processes and systems that are as cheap as possible. In the GM Spatial Energy Plan: Evidence Base Study, it was informed by the cost optimal whole system thinking to maximise the benefits as set out in the Green Summit in March 2018.

The National Grid Future Energy Scenarios report 2018[23] sets out four credible pathways for the future of energy in the UK. These are designed against a backdrop of a high pace of change, which was highlighted during 2018 when the UK had three consecutive days free of coal fired power generation and solar generation continued to set new records. However, only the Two Degrees and Community Renewables scenarios meet the 2050 decarbonisation target, in different ways.

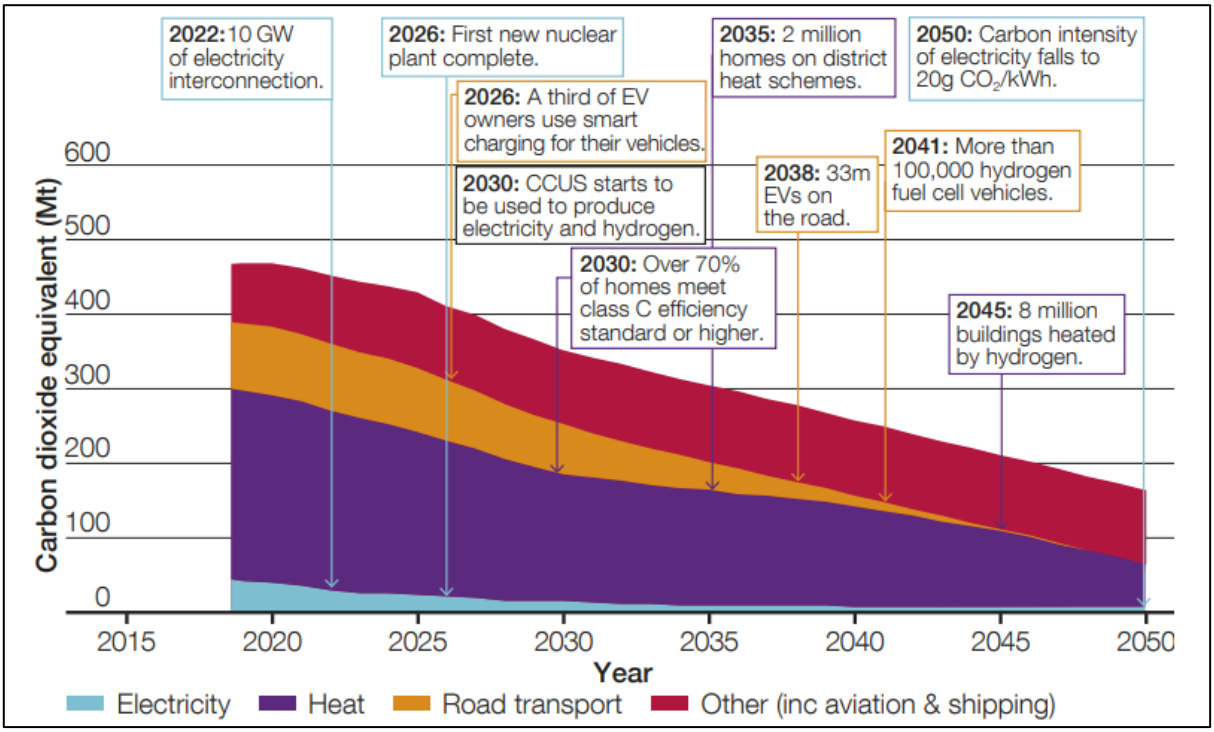
To date, modelling compiled on behalf of GM, indicates the technical potential to generate a maximum of 70% of GM's energy needs locally. This demonstrates that GM as a region will still have a reliance on national generation and energy infrastructure.

[20] Committee on Climate Change. June 2018. Reducing UK emissions. 2018 Progress Report to Parliament. Available at: https://www.theccc.org.uk/wp-content/uploads/2018/06/CCC-2018-Progress-Report-to-Parliament.pdf
[21] Committee on Climate Change. June 2018. Reducing UK emissions. 2018 Progress Report to Parliament. Available at: https://www.theccc.org.uk/wp-content/uploads/2018/06/CCC-2018-Progress-Report-to-Parliament.pdf
[22] HM Government. October 2017. The Clean Growth Strategy. Leading the way to a low carbon future. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf
[23] National Grid. July 2018. Future Energy Scenarios in five minutes. Available at: http://fes.nationalgrid.com/media/1357/fes-2018-in-5-minutes-web-version.pdf

Two Degrees Scenario

Two Degrees Scenario meets the decarbonisation target through a more centralised approach, using large scale renewables, nuclear and gas fired power stations with carbon capture storage (CCS). The transport sector is almost decarbonised with a significant transition to EV, supplemented with hydrogen and other fuel sources. For city regions it assumes higher energy efficiency of buildings, through increased thermal efficiency heating and by increasing the use of heat networks.

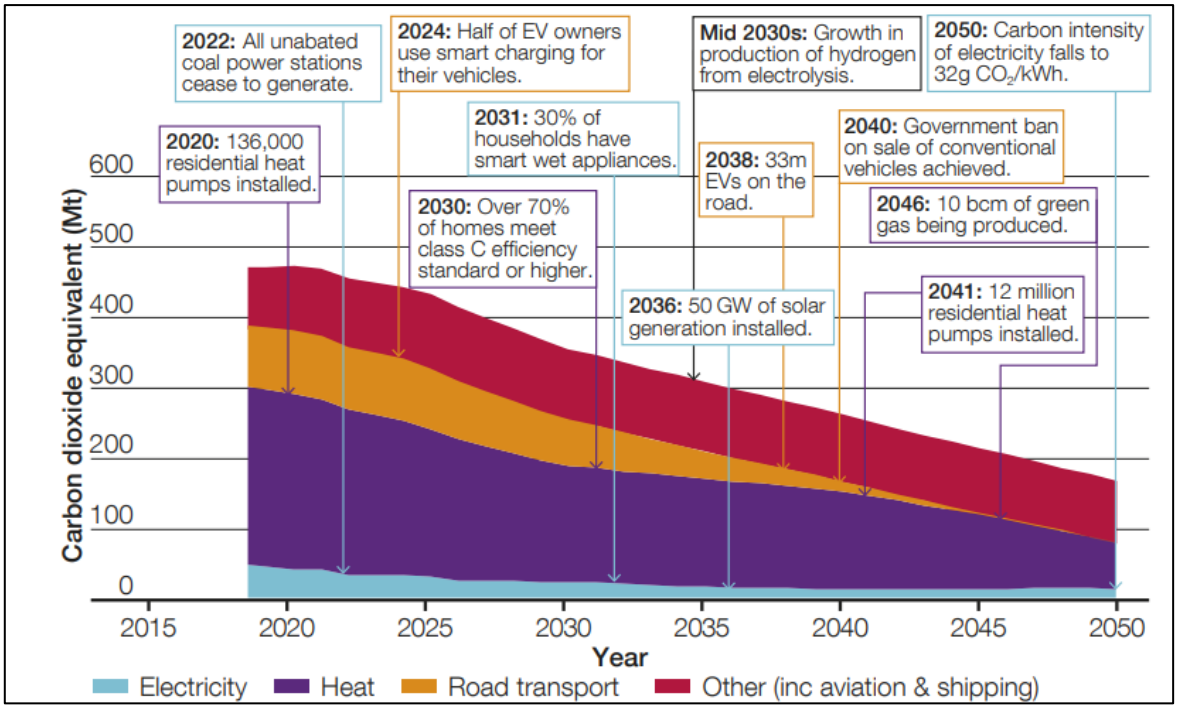
Figure 3: Future Energy Scenarios, Two Degrees Scenario.



Community Renewables Scenario

The Community Renewables Scenario takes a more decentralised approach with increased renewables, storage and smart appliances providing the reduction of carbon. Transport follows a similar trajectory to the Two Degrees Scenario, with buildings receiving increased thermal efficiency and heating being provided in the main by heat pumps, both electric and hybrid (gas).

Figure 4: Future Energy Scenarios, Community Renewables Scenario.



The joint report from Imperial College London (ICL) and OVO Energy*, a Blueprint for a Post-Carbon Society[24] discussed how smart technologies could improve household energy flexibility. This analysis indicates the potential to cut the annual cost of decarbonising Britain's housing stock by almost £7bn.

The report, released in September 2018, considered three potential low carbon trajectories for the future of the UK's energy network, each with differing amounts for flexible domestic energy factors. The most ambitious relied on 93% of the UK's energy coming from renewables, supported by flexible smart technologies, including electric heating, in-home battery storage and EVs. This approach was found to save £6.9bn across the UK energy system overall, relative to the Future Survival Scenario (one of three energy scenarios produced by Imperial College London and OVO, one of the most ambitious low carbon systems scenario for the UK) baseline with no flexibility. Assuming ambitious decarbonisation, flexibility could reduce the cost, with the report claiming (if distributed equally across all households in the UK), potential savings of £256 per household. The scenario relies on the uptake of 25 million EVs and 21 million electric heating units by 2040 – a trajectory which the report dubs "ambitious but achievable", supported by considerable deployment of flexibility at a household level.

**Note: This is an external report which highlights the opportunity to improve household energy flexibility, however requires further analysis and validation.*

[24] Imperial College London and OVO Energy. September 2018. Blueprint for a post carbon society. Available at: https://www.ovoenergy.com/binaries/content/assets/documents/pdfs/newsroom/blueprintforapostcarbonsociety-2018.pdf.

4.2. Regional

Science Based Carbon Pathway (GM)

SCATTER[25] is a city-focussed carbon pathway modelling tool which was piloted in GM. The tool, based on the Department for Energy and Climate Change (DECC) 2050 Calculator, enables regions to easily construct a Global Protocol for Community Scale (GPC) compliant greenhouse gas inventory, as well as assess the impact of four levels of ambition for 45 technology interventions to deliver a holistic approach to city-wide decarbonisation.

Feeding into this project, the Tyndall Centre for Climate Change at the University of Manchester, prepared a carbon trajectory which provided a top-down assessment of GM's overall emission reduction requirements to enable the city region to be compliant with the Paris Climate Agreement.

Of the levels of ambition calculated by SCATTER, only the fourth scenario (the most ambitious which is at the limit of current technology development and rollout, without the use of negative emissions technologies) was capable of getting close to achieving the targets required to meet the Tyndall science-based target (i.e. delivering carbon neutrality a decade ahead of the UK Government's current commitments of 80% reduction by 2050, based on the 1990 baseline).

Figure 5: Four scenarios highlighted by SCATTER

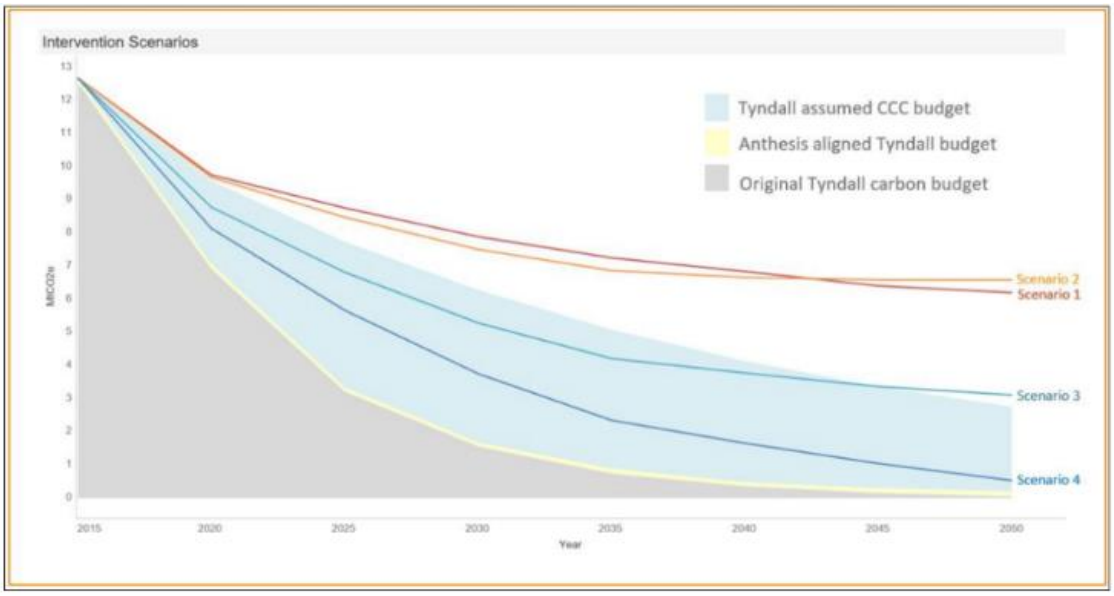


Table 1 provides a summary of the energy related interventions from SCATTER that deliver the biggest benefits to GM. An Expert Panel (comprising Electricity North West, ESC, Siemens, Arup, BEIS and the GM Low Carbon Hub) supported the tool developers (Anthesis) in reviewing the technology interventions and their associated ambition thresholds to ensure they were relevant and implementable at the modelled levels.

[25] SCATTER (Setting City Area Targets and Trajectories for Emissions Reduction). Available at: https://www.anthesisgroup.com/scatter-carbon-footprint-reduction-tool

SCATTER provides both demand (e.g. retrofit of domestic properties) and supply (e.g. the provision of solar PV) considerations and enabled the city region to evaluate the interventions it could deliver at a local level, as well as understanding the contribution provided through developments which would manifest on the national stage (e.g. grid decarbonisation). It should be noted that in addition to energy systems, SCATTER also provides interventions relating to transportation (e.g. Ultra-Low Emission Vehicles (ULEV) adoption, electrification of the rail network, modal shift etc.) and sequestration through enhanced natural capital (i.e. tree planting to align with GM's contribution to the Great Northern Forest and preservation of upland peatland).

Table 1: High level summary of the energy related interventions identified by SCATTER.*

** It should be noted, SCATTER is a city focused emissions model, built to create low carbon cities. It provides a bottom up approach of what feasible carbon pathways for GM may look like. It is an optimistic, stretched target. The table above is not an exhaustive list of the scenarios run within SCATTER for GM.*

Category	Intervention Description	Intervention threshold by 2050
Electricity Grid Decarbonisation	Increase onshore wind	~850 turbines in 2050, delivering ~5.5TWh/yr.
	Increase biomass power generation	1.1 GW installed capacity, giving 8.8 TWh/yr. by 2050.
	Increase in solar PV for electricity	16m^2 per household on 50% of all households in GM. A residual 16.8km^2 required on commercial rooftops or on ground mounted installations. 6.0 TWh/yr. (12%).
	Increase in solar panels for hot water	457 MW installed capacity by 2050, providing 4TWh/yr.; the equivalent of 6m^2 per household.
Electricity Balancing	Balancing and Storage	845 MWh storage, 1.27 MW. Electricity North West currently requires 26 MW of flexibility in GM which could be provided through storage or load management.
Transport	Passenger Transport: shift to zero emission transport	By 2035, 100% zero emissions vehicles and buses, complete railway electrification by 2025.
	Passenger Transport: choice of fuel or cell or battery powered zero emission vehicles.	100% of zero emission cars use.
Households	Shift to electrification of home heating	The proportion of domestic heating systems supplied using electricity is 80-100%.
Business	Commercial demand for heating and cooling	Space heating demand drops by 40%, hot water demand by 30% through process efficiency and upgraded fabric.

4.3. Local

Local Area Energy Planning (Bury) – Future Local Area Energy Scenarios

As part of the SSH Programme, (see Section 3), GMCA has been piloting an advanced data driven whole system approach to Local Area Energy Planning[26], initially focused on the challenge of decarbonising heat. Analysis was carried out for the Bury district using EnergyPath Networks[27] and involved the investigation of tens of thousands of different future pathways, which created more than 100 possible future local energy scenarios.

Three main scenarios were selected by a stakeholder group (of both local and partner specialists) to be demonstrated as potential pathways for the decarbonisation of Bury's energy system. The results are specific to Bury, but they illustrate the scale of change that will need to be coordinated within each district of GM to meet the challenge of decarbonisation, as well as some of the specific hurdles that will need to be addressed. The scenarios selected provide an indication of Bury's future energy system, subject to the level and action taken to reduce carbon emissions.

1. No Local Carbon Target is a business-as-usual scenario which assumes national electricity generation is decarbonised in line with current national carbon reduction targets.

This assumes that Bury provides no additional decarbonisation focus and relies purely on national policy. The scenario expects 86,000 of Bury's forecasted 92,000 homes will continue to operate gas fired boilers, with no significant changes to energy network peak demand, by 2050. A 70% reduction in in-scope carbon emissions from a 1990 baseline is illustrated within this scenario (below in figure 6).

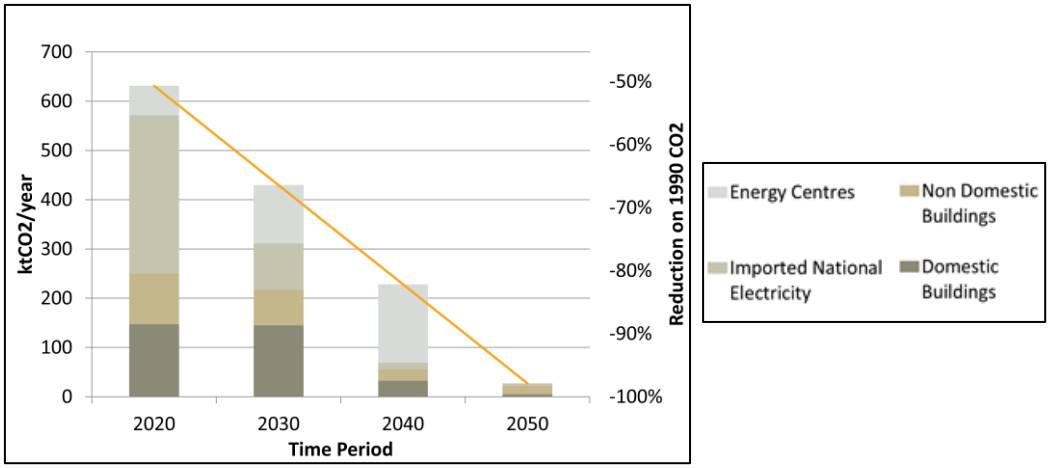
2. A 2050 Carbon Target scenario assumes Bury focuses efforts to minimise their carbon emissions by 2050, in line with Bury's commitment to the UK100 ambition[28].

This scenario illustrates a route to decarbonise the local energy system at the lowest modelled total cost, achieving `in scope'[29] carbon emissions reduction of 98% from a 1990 baseline. Most of the energy system change needed to decarbonise Bury occurs post 2035.

Under this scenario two thirds of Bury's homes are anticipated to be heated through a heat pump (air or ground source) with the remaining third heated via heat networks. The total estimated energy and system cost[30] for Bury to 2050 is 15% higher than not having a local carbon target and not achieving the UK100 ambition.

[26] Energy Systems Catapult. The project was funded by ETI and carried out by Energy Systems Catapult as part of Phase 1 of the Smart Systems and Heat programme. Available at: https://es.catapult.org.uk/projects/local-area-energy-planning/.
[27] EnergyPath is a registered trademark of Energy Technologies Institute LLP (ETI). See https://www.eti.co.uk/programmes/smart-systems-heat/energypath.
[28] UK100. 2017. For cleaner, more power communities. Available at: https://www.uk100.org/
[29] In scope emissions include those associated with: Domestic, Industrial and Commercial electricity, gas & other fuels and large industrial installations. Out of scope relate to emissions associated with: Agriculture and Transportation.
[30] Discounted to 2015 using HM Treasury Green Book Methodology.

Figure 6: A 2050 Carbon Target

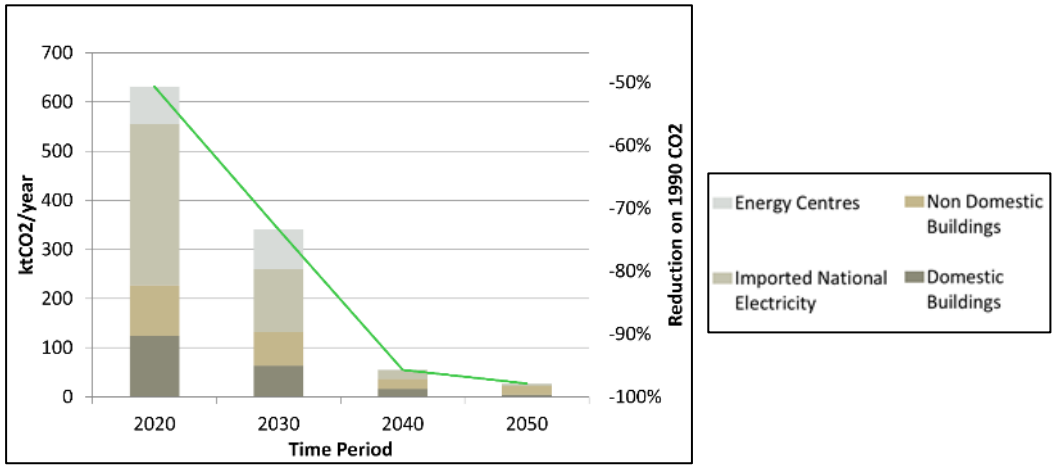


3. A 2040 Carbon Target scenario is based on Bury attempting to minimise the district's carbon emissions by 2040, a decade earlier than the previous scenario and current national targets.

Almost half of Bury's homes would utilise a low carbon heating system by 2035 with two thirds heated by heat pumps and the final third by heat networks by 2050.

This scenario achieves a 96% reduction by 2040 and a 98% reduction by 2050 from a 1990 baseline, minimising carbon by 2040 at a total estimated discounted energy and system cost 11% higher than achieving the previous 2050 carbon target.

Figure 7: A 2040 Carbon Target

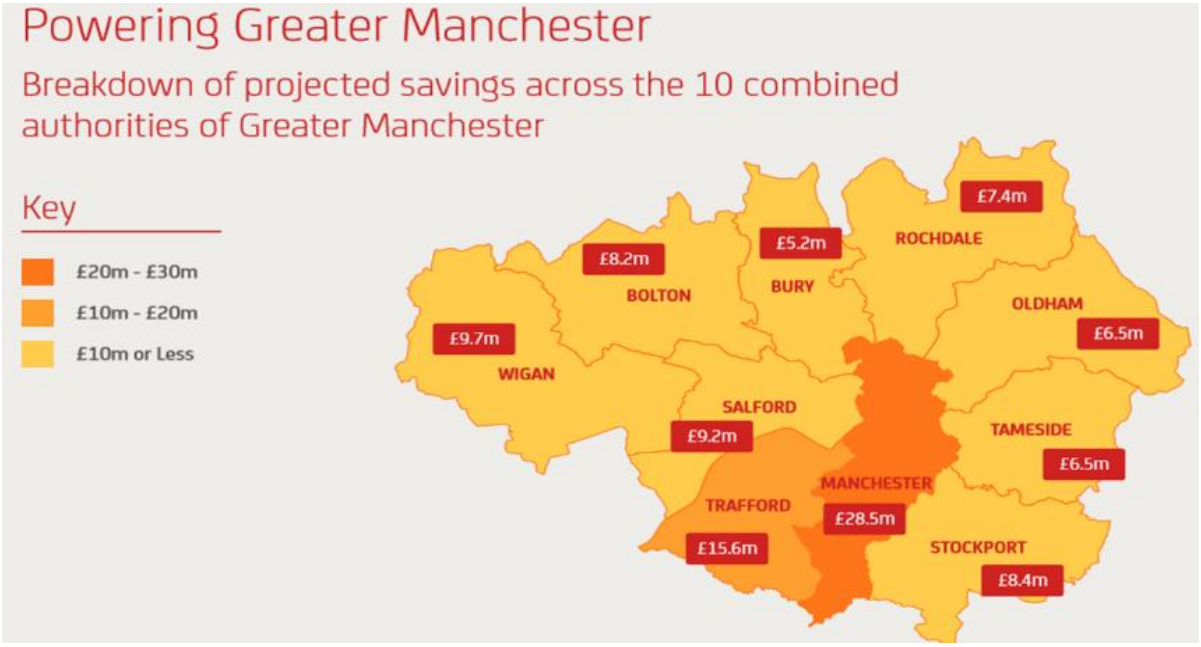


Nationally, every energy consumer will be responsible for the increased cost for decarbonised energy generation, e.g. new power stations and / or generation. An increase in the use of local generation could help to mitigate this cost increase and ultimately increase the level of inward investment, keeping money in the local economy.

An investment of this scale would come with several social, economic and health benefits, outlined in Section 7. These include both direct and wider indirect benefits. Cost reduction and cost avoidance related to self-generation, improved efficiency and comfort levels, local air quality, through to carbon reduction.

The Powering the Future GM Report provided by Centrica Business Solutions indicated potential savings from distributed energy solutions across all non-domestic electricity consumption in GM to be £105.2m[31]. This figure is based upon the reduction of 15% on bills, which Centrica have found to be achievable from sites with distributed energy solutions installed. The report goes on to state the three sectors of Industrial, NHS Greater Manchester and Hospitality / Leisure alone would then add £746m to the gross value added (GVA) of GM, supporting up to 10,500 jobs.

Figure 8: Powering Greater Manchester



The creation of new employment opportunities and upskilling of the existing workforce, would feed into the estimated 48,000 new opportunities across the north from low carbon interventions, as identified in the recent IPPR report[32]. The first mover advantage would enable GM to maximise the opportunities of achieving these benefits for the local economy, communities and districts.

[31] Centrica Business Solutions. 2018. Distributed Energy Powering Greater Manchester's Economic Future. Available at: https://www.centrica.com/sites/default/files/dep/cbs_powering_greater_manchester_a5_leaflet_4pp.pdf
[32] Institute for Public Policy Research. 2018. Risk or Reward? Securing a just transition in the north of England. Interim Report. Available at: https://www.ippr.org/files/2018-10/1539965019_energy-skills-october18.pdf

5. Proposed Regional Approach

GM is already playing a leading role in the low carbon transition, setting stretched targets in 2012, and more recently laying out even greater ambitions at the GM Green Summit in March 2018. Having become a combined authority in 2011, with increased devolved powers, GM is one of only 3 regions in the UK to be chosen to write a Local Industrial Strategy.

Alongside energy in households and businesses, GM also requires a mobility transition, which is reflected in this plan (delivery detail can be found in the 2040 Transport Strategy and Delivery Plan). Energy in transport currently accounts for 41% of all energy consumed by end users (including transport fuel)[33]. The majority of this is consumed by road transport using petroleum (29%)[34].

Electrification of transport delivers a large reduction in total energy consumption. Using a 2017 electricity grid emissions factor, a battery electric car is estimated to emit 73gCO2e/km (a reduction of 66% relative to standard petrol). Emissions are expected to fall to near zero over the period to 2050 as the electricity grid decarbonises in line with Government projections[35]. However, electrification also brings challenges. As energy demand shifts to the electricity grid, generation requirements increase. National Grid estimates that by 2050, EVs in the Community Renewables scenario creates an annual demand of 89TWh, Two Degrees scenario 88TWh, 66TWh in Steady Progression scenario and 65TWh in Consumer Evolution scenario[36].

There are also challenges in delivering infrastructure at a local level. An estimated 60% of households could have access to a domestic charge point (off-highway drive/garage)[37]. The remainder need a different and innovative solution to enable full electrification to come to fruition.

EVs are a key part of the region's future smart and flexible energy system, augmenting the use of storage in homes and potentially providing power back to the grid. GM will need to ensure the electricity system now and in the future is ready and that the region maximises the opportunities that electric vehicles present, in terms of vehicle-to-grid, flexibility services and demand-side response.

The role of the GMCA and the 10 Local Authorities is in galvanising and empowering local, regional and national actors, providing the strategic direction required as GM moves towards a local decentralised smart energy system, which will be critical to success.

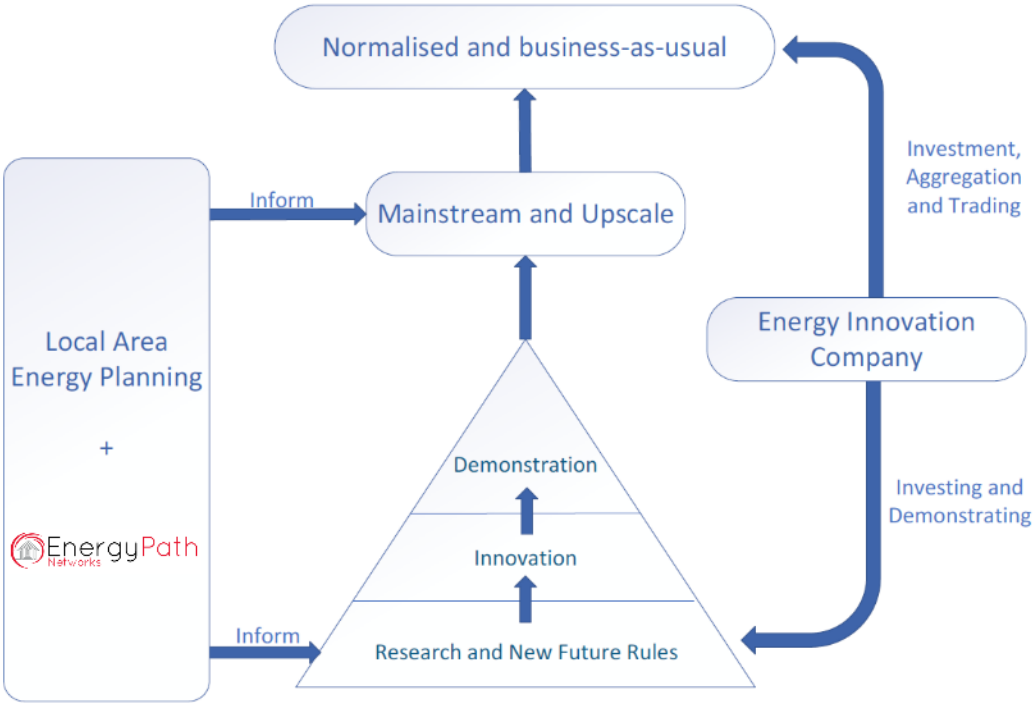
To this end, it is proposed GM takes a `place-based' systemic approach, becoming an Energy Transition Region* utilising their estates, assets, academia and research facilities to progress

[33] Department for Transport. 2016. Energy consumption by transport mode and source of energy, United Kingdom: 2000 to 2016. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/661673/env0102.ods
[34] Department for Transport. 2016. Energy consumption by transport mode and source of energy, United Kingdom: 2000 to 2016. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/661673/env0102.ods
[35] Department for Transport. 2018. Transport Energy Model Report. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739462/transport-energy-model.pdf
[36] National Grid. July 2018. Future Energy Scenarios in five minutes. Available at: http://fes.nationalgrid.com/media/1357/fes-2018-in-5-minutes-web-version.pdf
[37] Energy Systems Catapult. 2018. Preparing UK Electricity Networks for Electric Vehicles. Available at: https://es.catapult.org.uk/wp-content/uploads/2018/07/Preparing-UK-Electricity-Networks-for-Electric-Vehicles-FINAL.pdf

innovation, through smart technologies and services, integration and optimisation within a clearly defined innovation zone and explores the development of an Energy Innovation Company to support and normalise decarbonisation activity.

**Note: Energy Transition Region is a GM vision, which builds upon the innovation zone concept. It is not related to ESC's Energy Transition Town concept. Both are independent of one another and address differing elements and approaches to decarbonisation. In the future, these concepts could support one another, but is not currently planned.*

Figure 9: Proposed GM Approach



5.1. Focus

Over the next five years, GM will need to significantly accelerate the rate and scale of deployment of new energy generation (predominantly PV, heat pumps and district heating) and energy conservation technology. GM will also need to take a firm hand to lead in the deployment of smart systems (storage, energy management and aggregation) and energy efficiency measures to reduce energy consumption and shift or reduce peak demand. Energy security is a significant issue, and GM will need to buffer itself against both price and availability impacts that will arise from any shortfall in generation emerging during the Whole System Smart Energy Plans five-year period, 2019-2024.

Smart Systems

Smart energy systems, combined with more effective markets and regulatory conditions, could provide the ability to empower both consumers and suppliers in GM to manage energy supply and demand more cost effectively and support a low carbon transition.

The shift to low carbon and decentralised energy provides an opportunity for innovative business models, services, governance and funding solutions to support an energy system change. Smart systems could enable a local energy market, capable of peer to peer trading, using Internet of Things

aggregator platforms, to be established within GM. This will result in the end user / consumer being empowered with data and control.

Deployment of new low carbon energy networks and buildings technologies in combination with smart systems would enable Local Authorities and communities to be active participants in the delivery of GM's future energy system. New and future public sector led developments across GM provide the opportunity to act as a catalyst for how low carbon energy infrastructure is developed, integrated and commissioned.

A public sector led approach which utilises publicly funded and owned generation, storage, heating and charging assets, with a suitable governance structure, may form the basis of a publicly owned 'Energy Social Enterprise' or 'Public ESCO' model / Energy Innovation Company.

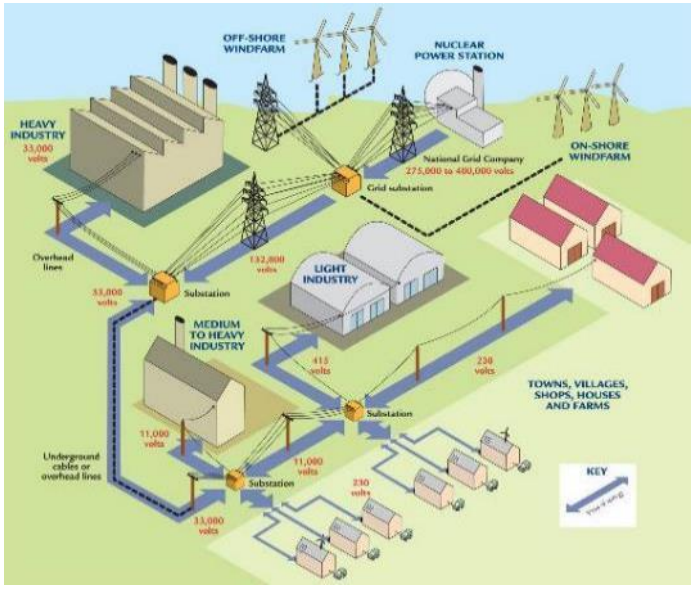


Figure 10: Smart System
© Greater Manchester Combined Authority, 2018

Innovation

Lessons learnt from projects are infrequently transferred to the next and often fail to be scaled up to make a material impact within the city and beyond. In addition, projects which operate in silos frequently find that their results are hampered by factors in other parts of the system which are not being addressed, which is why a whole system approach is suitable. The public sector's traditional role, as a commissioner of projects or services, restricts and often prevents innovative private sector-led solutions from being developed and exploited at scale.

To overcome lessons learnt to date, this Whole System Smart Energy Plan proposes the utilisation of GM's research facilities and assets, alongside geographical demonstrators as part of an Innovation Zone. Under the concept of Energy Transition Region, the Innovation Zone approach will create innovative, scalable and complimentary demonstration projects. This will build on existing activity in GM across the following three areas:

- Technology Innovation – support for development and testing of new technologies
- Integration Innovation – blending different technologies and smart processes in demonstration facilities at the building or community scale
- Delivery Innovation – testing commercial business models for roll out, marketing, engagement etc., and overcoming non-technological (societal, political etc.) barriers.

1. Laboratory Testing of Technology (Test New Ideas)

Using and building on GM's existing capabilities to develop, test and innovate low carbon products which can then be piloted at scale in a physical demonstrator. The University of Salford's Energy

House[38] and proposed Energy House 2.0, is a prime example of the ability to test products in a physical environment under laboratory conditions. Work undertaken by the Manchester Metropolitan University (Hydrogen Partnership) and University of Manchester (Manchester Energy) in energy forecasting and grid balancing should also feed into demonstration activity.

2. Pilot Scale Testing of Technology (Building and Community Demonstrator Scale)

Technological innovation can be combined with the innovative integration of products, with each other and the grid, to blend and test different types of technology within demonstration scale pilots. GM already has a developing district heating programme, a pre-existing base of domestic homes retrofitted for energy efficiency, others fitted with smart technology through the NEDO Smart Communities Project (NEDO) which could be further utilised and expanded to provide data on air source heat pumps and / or home energy management systems.

Demonstrators could also include emerging commercial market offers around PV and storage, which include retrofit and Home Energy Management Systems units, and potential expansion of existing capital projects (such as heat networks, heat pumps and energy storage) depending on timescales, funding and feasibility. Wider stakeholders, (such as the electricity network operator) could also support this area and already have plans for network-wide IT to support demand side response.

Project Example:

Homes as Energy Systems (HAES) commenced in October 2018 funded by GM ERDF. This built upon the findings of the NEDO project, which completed in March 2017, by exploring other forms of energy storage as part of a service offering and the impact that energy demand reduction can play in supporting smart grids and energy network service provisions.

The project involves technology integration and delivery innovation, blending different technologies and smart processes at a City Region scale demonstration project. It tests marketing, householder and supply chain engagement and the overcoming of non-technological (principally societal and political) barriers.

As a live 'demonstrator' involving over 700 households across GM, HAES will incorporate other energy storage technologies into an aggregated 'virtual energy store' to exploit the revenue streams from multiple grid balancing and energy network services whilst reducing energy bills for residents and supporting decarbonisation of domestic heat production. No other project is looking to holistically model both energy efficiency demand reduction works with energy network related services, coupled with modelling, to justify further investment in these technologies and innovation in smart energy and heat systems.

HAES will directly challenge the wider market failure, namely that organisations with a vested interest in delivery of one technology, component or network service remain blinkered to the wider opportunities for carbon reduction, fuel poverty alleviation and energy network transformation, which prevents development and deployment of truly 'smart' energy networks.

[38] University of Salford. 2018. Energy House. Available at: https://www.salford.ac.uk/built-environment/laboratories-and-studios/energy-house

3. Delivery Models and Control (Pre-commercialisation)

GM currently has the expertise to test different business models at scale to determine which are the most appropriate for the market. For example, GM has a history of delivering large domestic projects (such as the NEDO Smart Communities Project) which required customer roll-out, marketing, engagement, contracted delivery and installation of retrofit measures in the private and social housing sectors. The potential for establishing project specific Special Purpose Vehicle (SPV) and / or Energy Service Companies (ESCOs) could provide a bespoke delivery route for market testing of new designed business models.

Outlined below are the technologies with the highest technical potential to contribute to a new, low carbon energy system in GM. The figures below are an outcome of the ETI GM Spatial Energy Plan, a pragmatic view taking into account practical and technical constraints associated with each technology.

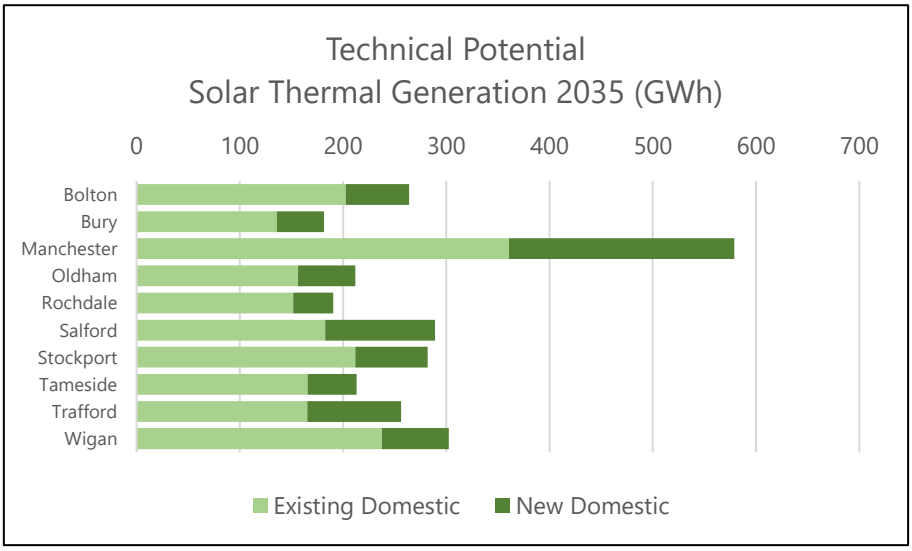
Generation and Storage:

Up to 1,030 GWh/yr. (9 %) of existing electricity consumption could technically be generated by renewable energy sources within GM, delivering annual CO_2 reductions of 2.6 million tonnes (19 %) from 2014 levels.

Solar PV has the potential to provide 834 GWh/yr. This is 7.3 % of current GM electricity consumption. In 2014 PV provided around 50 GWh of renewable energy.

Solar thermal has the technical potential to provide 2,770 GWh/yr. This is 13 % of current gas demand.

Figure 11: Technical Potential of Solar Thermal Generation 2035.



Biofuel is an extremely versatile energy source that can be used to support a range of energy demands and the scale of use could have a significant effect on the cost of meeting carbon targets

in the UK. Examples include from conversion to liquid fuel for vehicles, to hydrogen for vehicles or power generation and bio-gas to replace natural gas. Biofuel in GM is estimated to have the technical potential to provide 1,173 GWh/yr. of heat (excluding transport). This is 5% of current gas demand.

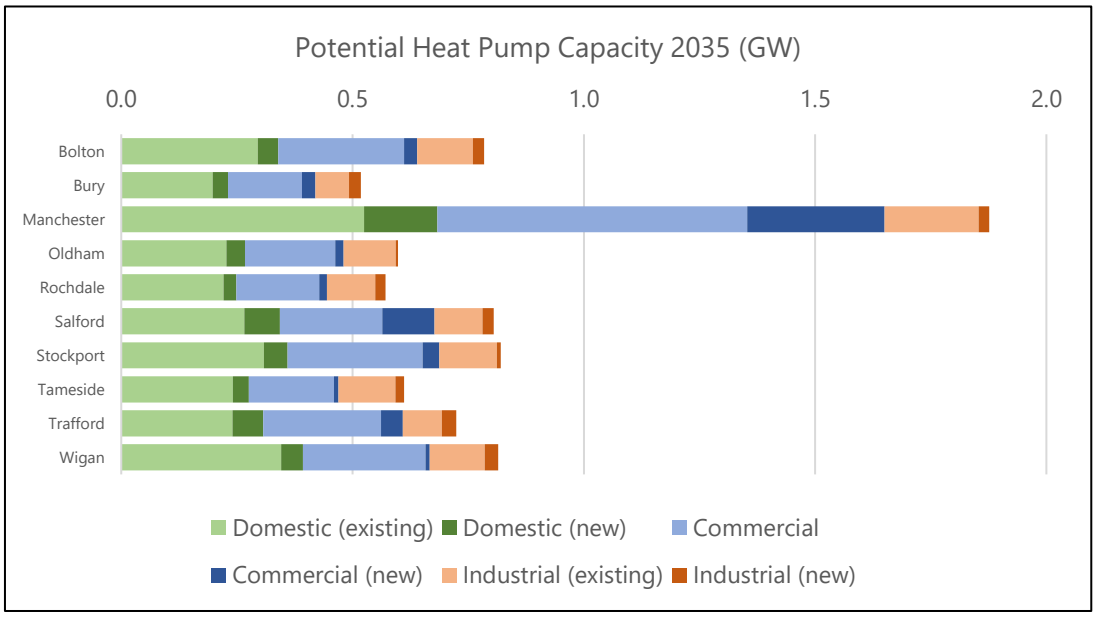
Storage provided through batteries or other technologies will become increasingly important in allowing generators to store their output and sell it at periods of higher demand on the network.

DSOs will also contract for flexibility services from storage providers to overcome peak load demand times through grid balancing services. This could prevent the need to reinforce the network at a significant additional cost to both the network provider and ultimately consumer.

Decarbonisation of Heat:

Up to 68% of existing gas demand could technically be replaced with renewable heat from heat pumps, solar thermal and bioenergy within the GM region.

Figure 12: Potential Heat Pump Capacity 2035 (GW)



Ground Source and Air Source Heat Pumps have the technical potential to contribute to 12,400 TWh/yr.: (50 %) of current GM domestic and non-domestic heat consumption. Heat pumps could play a significant role in the decarbonisation of existing homes, particularly in the less built up areas, however they are currently more expensive to buy and run than conventional gas boilers. To meet

the targets outlined by the Committee on Climate Change in the 2030 scenarios, 2 million heat pumps would be required nationally[39]. 550 homes in GM have been fitted with Air Source Heat Pumps in Wigan, Bury and Manchester as part of the NEDO project. Equally, in dense urban and high-rise areas, shared loop Ground Source Heat Pumps have the potential to decarbonise these areas too.

District Heating has the technical potential to expand significantly in GM, utilising a range of low carbon and renewable technologies. Urban areas are most likely to move towards heat networks and GM has previously identified feasible opportunities for approximately 35 individual District Heating Networks with technical potential to reduce GM carbon emissions by 413 $ktCO_2$ (3 %). This shift across GM would be equivalent to up to 330,000 homes connected to District Heating by 2050.

Hydrogen could potentially be considered as a direct replacement for natural gas, connecting consumers to the gas network and fuelling boilers and appliances. This could potentially be less disruptive for consumers, however, the cost of hydrogen as a replacement fuel is not clear.[40] There are questions to be resolved about how the hydrogen could be sustainably produced and technical issues with introducing more than 20% hydrogen into the gas grid. The HYNET[41] and HY4HEAT[42] programmes are currently exploring how hydrogen can support localities through replacement of natural gas. GM should aim to consider the role of hydrogen in the development of local energy plans for support GM's 2038 carbon neutrality ambition.

Low Carbon Transport – Vehicle Electrification:

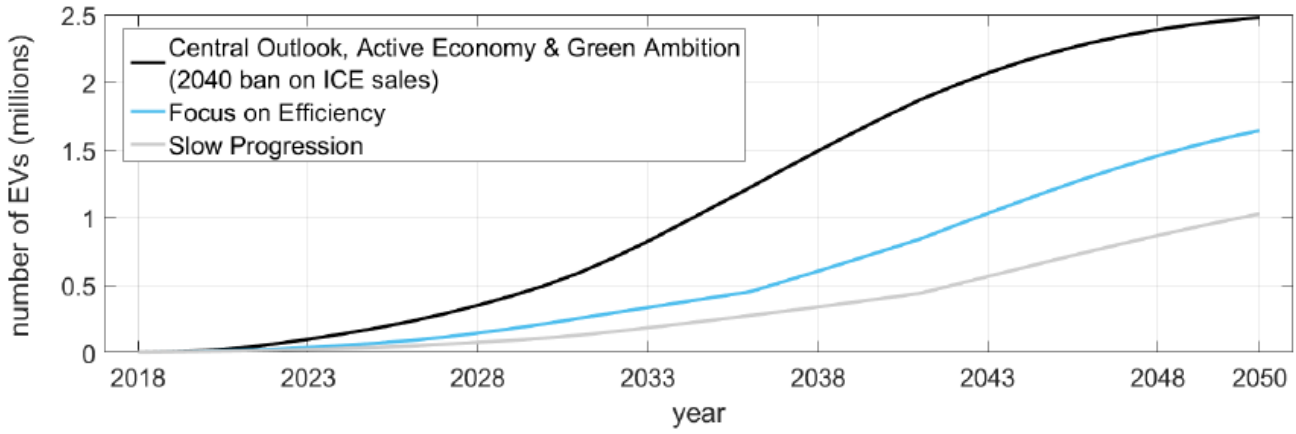
Ultra-low emission vehicles are currently a small proportion of the vehicle fleet: at approx. 150,000 vehicles nationally (approx. 2000 in GM) they make up less than 1% of the market in the UK. However, potential for growth is enormous: between 2011 and 2017 the ULEV fleet grew by 750%. This presents significant challenges and opportunities for GM in terms of energy management and emissions reduction. Growth in GM is contingent on a fit for purpose infrastructure network, adequate vehicle supplies, a strong consumer base and the right market conditions.

The GM EV procurement process has already been initiated and is designed to bring a supplier for a regional contract to attract public and private investment, supporting a technical refresh of existing stock and expansion of network with new charging infrastructure to meet continually growing demands.

[39] Committee on Climate Change. June 2018. Reducing UK emissions. 2018 Progress Report to Parliament. Available at: https://www.theccc.org.uk/wp-content/uploads/2018/06/CCC-2018-Progress-Report-to-Parliament.pdf
[40] National Infrastructure Assessment. 2018. Congestion, Capacity, Carbon: Priorities for National Infrastructure. Available at: https://www.nic.org.uk/wp-content/uploads/Congestion-Capacity-Carbon_-Priorities-for-national-infrastructure.pdf
[41] Cadent Gas. 2018. HYNET Programme. Available at: https://hynet.co.uk/
[42] Demonstrating Hydrogen for Heat. 2018. HY4HEAT Programme. Available at: https://www.hy4heat.info/

Figure 13 shows three different Electricity North West scenarios for the growth in electric vehicle volumes in the north west of England.

Figure 13: Electricity North West view of Future Volumes of e-vehicles



Hydrogen vehicles are promoted by some as a credible alternative to EVs, as well as existing petrol and diesel technologies. However, with current trends in manufacturing and falling capital costs, EVs will likely take the lead for low emission vehicles in the short to medium term,[43] with hydrogen possibly being an alternative for HGVs.

Diversity and Flexibility:

The ability for multiple energy streams to provide flexibility and resilience to the GM region's networks will need to be increased. This will be particularly important as the electricity network is likely to become more constrained as increased electrification of heating, combined with EV charging places considerable demands on the grid at peak times.

New service models, able to provide cost effective low carbon energy solutions, whole house and energy system approaches will need to be developed, demonstrated and adopted to support the integration of heating, generation and storage into buildings and communities.

This may provide the required diversity and flexibility to defer and, ideally, avoid grid reinforcement works as peak electricity demand increases, along with providing greater control, comfort, value and convenience for residents and businesses.

[43] National Infrastructure Assessment. 2018. Congestion, Capacity, Carbon: Priorities for National Infrastructure. Available at: https://www.nic.org.uk/wp-content/uploads/Congestion-Capacity-Carbon_-Priorities-for-national-infrastructure.pdf

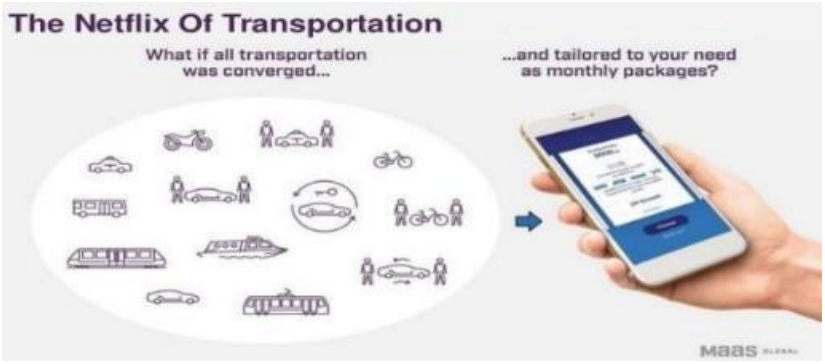
Services:

Flexibility Services – Local network operators may become increasingly involved in the provision of network capacity and this will, in part, be achieved by establishing local markets where providers of services can sell this flexibility. The DSO will create this market and buy flexibility services to manage the distribution network, which may be provided from storage, generation or demand management.

Energy as a service is an innovative future service which could focus on selling the experiences people value that use of energy affords, instead of the commodity inputs which are less relatable. A possible concept is based around the 'warm hour', which has been developed as part of the Smart Systems and Heat programme. The potential for new services people can relate more closely to the experiences they value is likely to open a range of interdependent commercial opportunities, policy options and regulatory needs[44].

Mobility as a service is an innovative mobility concept supported by new technologies. In GM, it is being explored through an app which brings together all the different ways people travel, with the potential to make all journeys simpler, quicker, cheaper and the transport network more efficient.

Figure 14: Mobility as a service
©Transport for Greater Manchester. 2018.



Research completed to date demonstrates the region has significant technical potential for further deployment of low carbon technologies in support of GM's carbon ambitions. This technical potential represents the opportunity for energy generation within the limitations of existing technology performance, local resource availability and identified constraints, as set out in the GM Spatial Energy Plan.

[44] Energy Technologies Institute. 2017. An ETI insights Report Domestic Energy Services. Available at: https://d2umxnkyjne36n.cloudfront.net/insightReports/FINAL-Domestic-Heat-Energy-Services.pdf?mtime=20180208174843

5.2. Emerging Opportunities

Smart Grid (Energy Network)

Electricity North West Limited (ENWL) will develop a Distribution 'System' Operator (DSO) model to facilitate the optimisation of both generation and electricity usage across the region.

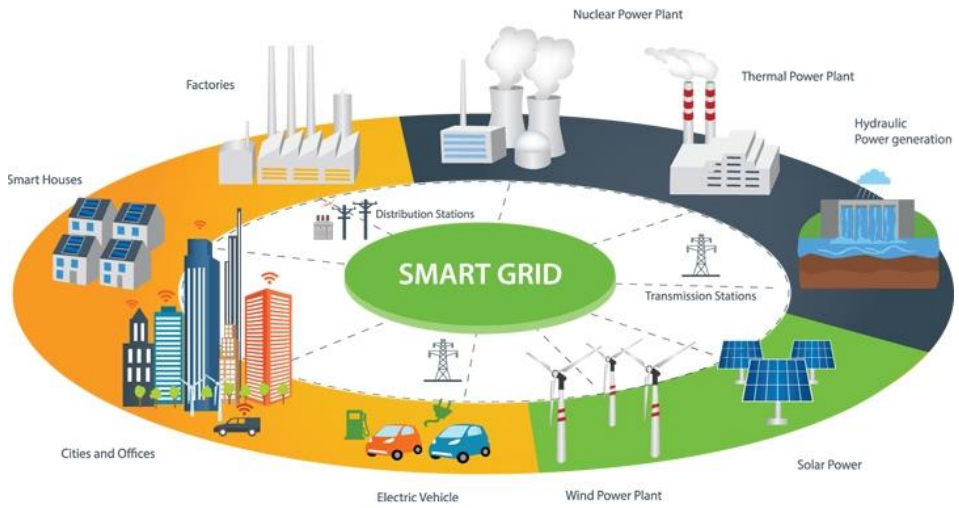
The electricity distribution network for the GM area is owned and operated by ENWL. As with all UK distribution networks, it was designed and built as a passive network with electricity flowing down from large power stations, through the transmission and distribution networks to customers' meters.

The growth in locally generated electricity, together with the introduction of low carbon technologies such as battery storage, EVs and heat pumps means this model is no longer appropriate.

The traditional DNO model will be replaced by a smarter, more flexible DSO. The understanding of the roles and responsibilities of the DSO is still being developed and ENWL are working with local stakeholders and national bodies to understand the technical and regulatory challenges the industry faces in transitioning to this new model.

The product of this transition will result in a Smart Grid which will help optimise both the generation and usage of electricity in the region and facilitate the local trading of electricity.

Figure 15: Smart Grid



Energy Transition Region

It is proposed GM explores and develops the Energy Transition Region concept, governance and structures required, through its existing Low Carbon Hub provision and wider partnerships, to facilitate:

- The provision of innovative and digitally enabled smart energy systems and energy services, leading to smart grids for GM residents, which can only be achieved through initial testing and demonstration. This will challenge and disrupt the established market, accelerating the deployment of new generation, heating, transport and storage measures and services; and

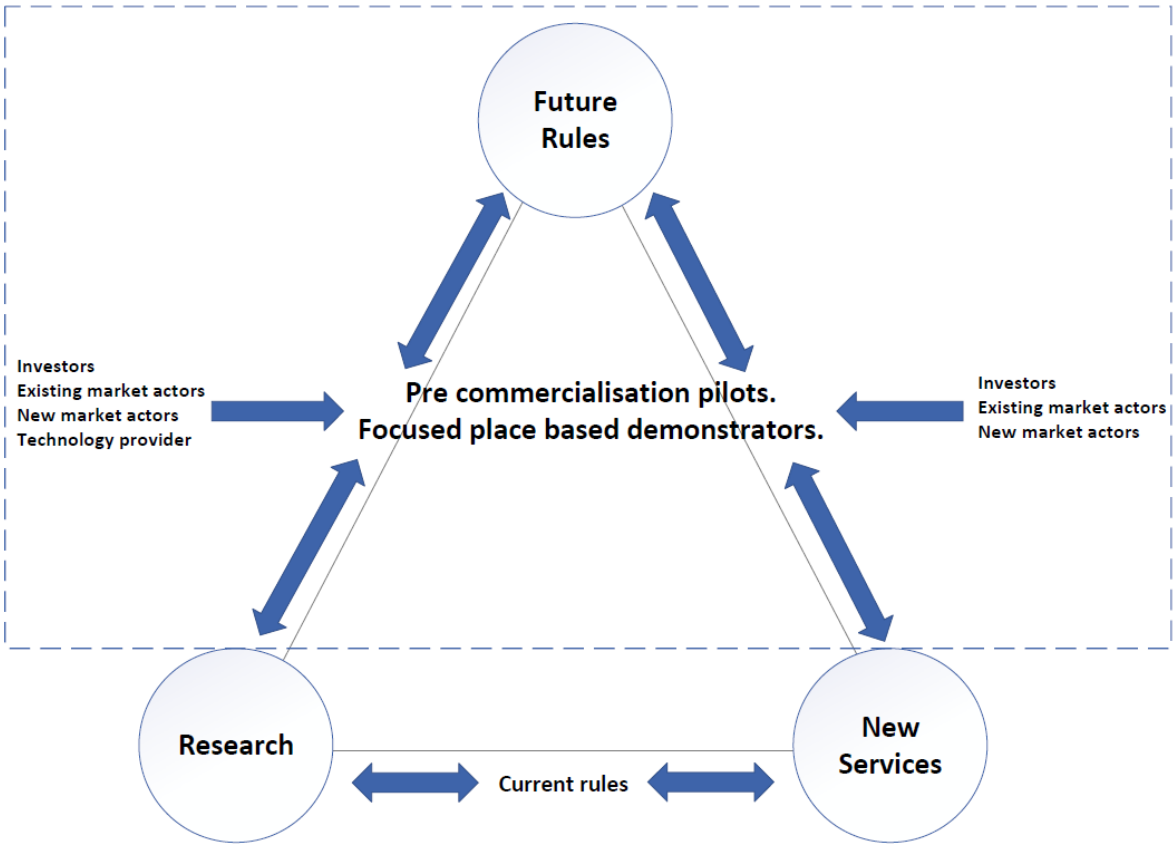
- The optimisation of local assets to provide demand side response and potentially open other ancillary markets, which could form the key stone of future Energy Innovation Companies. This will involve improving how GM connects generation, networks and consumers to enable demand management and to realise the benefits of storage and flexibility.

The Energy Transition Region concept could be developed and established using a governance structure, which includes members of the GM Low Carbon Hub, Oxford Road Corridor Partnership, University of Salford and the utilities companies (ENWL, Cadent and United Utilities).

This governance approach would not only bring together public-sector academia and utilities, but also have the potential to embrace business, industrial, commercial and social landlords, enabling all sectors of GM to participate and benefit.

By enabling these partnerships to occur, innovation, research and knowledge can be accelerated through to commercialisation and normalisation, providing a compelling case to Government and the relevant regulator (Ofgem), to enable policy and regulatory reform to be trialled and tested, as and when required, in a safe and controlled environment.

Figure 16: Energy Transition Region



As an example, the EnergyPath Network modelling carried out for Bury supports the view that a radical shift is required towards the electrification of heat to meet accelerated carbon reduction targets and deliver wider benefits including employment, health and energy security.

This Smart Energy Plan seeks to achieve such a shift in how the GM region heat buildings, through the creation and delivery of fully connected and smart buildings (public, private and commercial). Digitalisation is key to enable connectivity remotely and the shift can occur through a digitalised, aggregated local energy system, which requires collaboration, partnership, policy development and potentially new market structures, enabled by the changes of elements of regulation. Some of these changes cannot be controlled by GM.

GM as an 'Energy Transition Region' could offer a large scale geographically defined area (expansion on the Ofgem sandpit approach) for the development, demonstration and deployment of, for example, emerging connected homes / business technology or innovative energy tariffs within 'living demonstrators'. The current approach taken by Ofgem is to support discrete micro and small-scale research projects (which are not interconnected and / or whole system approaches), as opposed to larger scale real life living demonstrators.

This would be available to multiple parties, with appropriate rules, enabling platforms and governance. The 'living demonstrators' would test live solutions in real consumer homes / businesses (as opposed to in research environments) and be provided with the appropriate consumer protection. How the region generates, consumes, trades and transmits energy is changing: trialling innovative solutions (technology or service led) to meet these changes may also require new market structures to be developed and tested.

There may be multiple individual projects within the Energy Transition Region, offering 'living demonstrators' to tackle different energy system challenges. These could involve multiple organisations, enabling industry from across the region to adopt innovative approaches. Projects will be complementary to one another and provide challenge to the current thinking, while being supportive of the overall GM low carbon aspirations. The individual projects may require some form of derogation from energy regulations to trial innovative products and services that require changes from the current energy market structure: this would be reviewed on a case by case basis.

The Energy Transition Region concept could also explore how differing solutions would interact with each other across the energy network. A combination of living demonstrators and simulation / test lab capabilities (Energy House, HV test facilities at Salford University and University of Manchester) creates a very powerful environment. This enables companies to explore the end-to-end integration opportunities of how technologies integrate with the energy systems and / or how service models are received by the consumer through to provider. This approach would provide the detail required to influence energy regulation, local and national policy. GM will benefit from this type of activity occurring by becoming the UK leader, transforming GM into a greener, cleaner, climate resilient city region, creating and growing jobs, improving the health and quality of life for millions of people and protecting the green spaces and environment for future generations.

Local Area Energy Planning

It is suggested GM expands from its piloting of whole system Local Area Energy Planning (LAEP) using EnergyPath Networks undertaken in Bury in partnership with ENWL, Cadent and ESC and more widely across GM using the Energy System Modelling Environment (ESME). This will aim to ensure GM is able to cost effectively deliver its decarbonisation ambitions and is able to consider the impacts of different options and choices in the context of a changing national energy system.

It is GM's intent to take a whole systems approach, utilising the Energy Transition Region and future energy programmes, supported by LAEP, informed by EnergyPath Networks modelling, as piloted in Bury (see Section 4). GM will explore how this can be further extended to encompass all 10 districts of GM and provide more robust data driven energy system modelling to inform future projects in the four priority areas:

- Generation and storage;
- Decarbonised heat;
- Low carbon transport; and
- Flexibility and diversity.

This will support GM's ambition to accelerate decarbonisation of the local energy system. Further exploration with external partners (potentially ESC) is required to implement an emerging framework approach to LAEP, supporting the scaling up of this new whole systems approach to LAEP across the region. This framework approach will address issues associated with data quality, local capacity and engagement with key stakeholders in the energy system. Figure 17 sets out the opportunities to GM arising from taking a new approach to LAEP. Figure 18 shows ESC's framework for LAEP.

Figure 17: Energy Transition Region

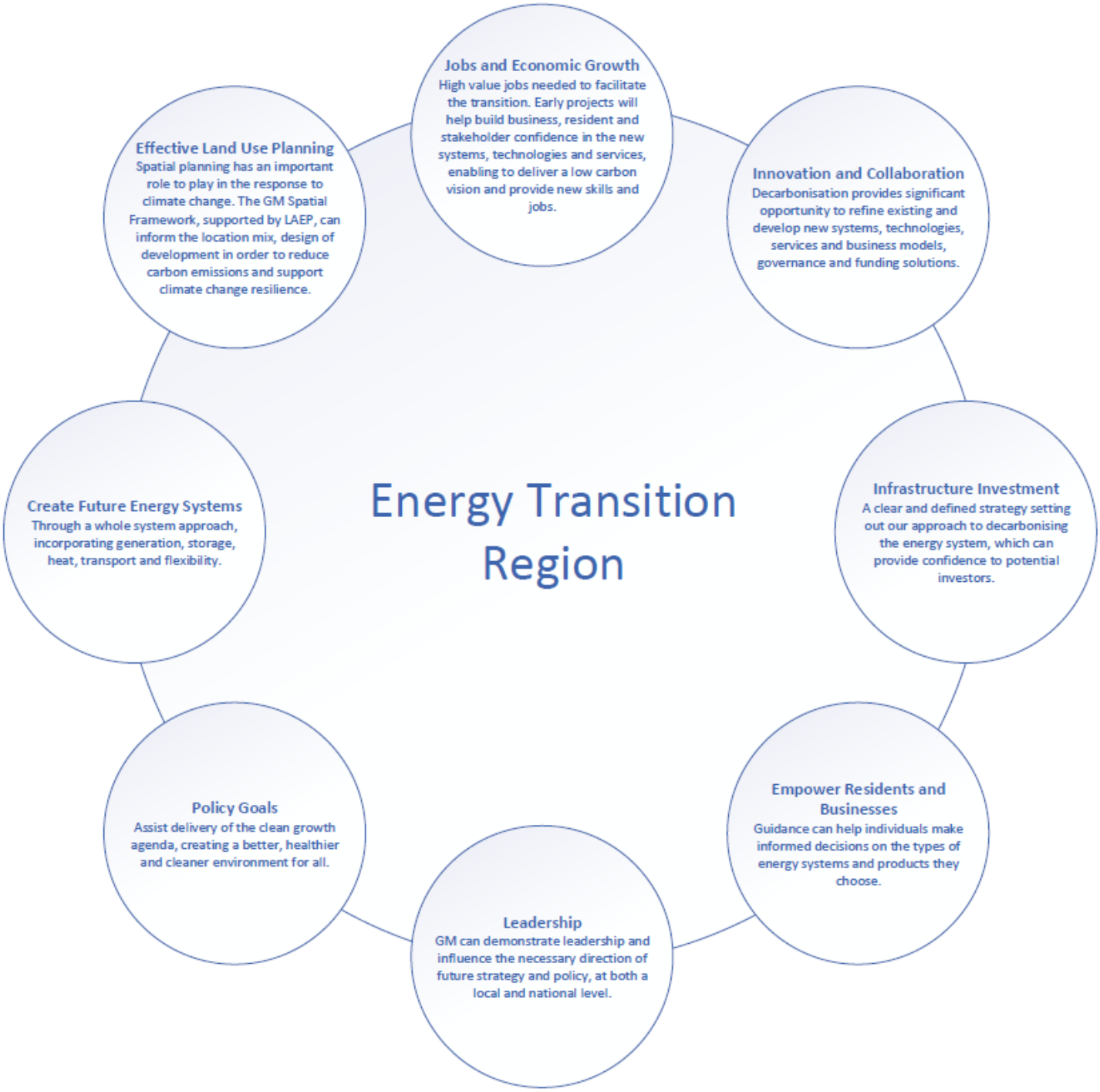
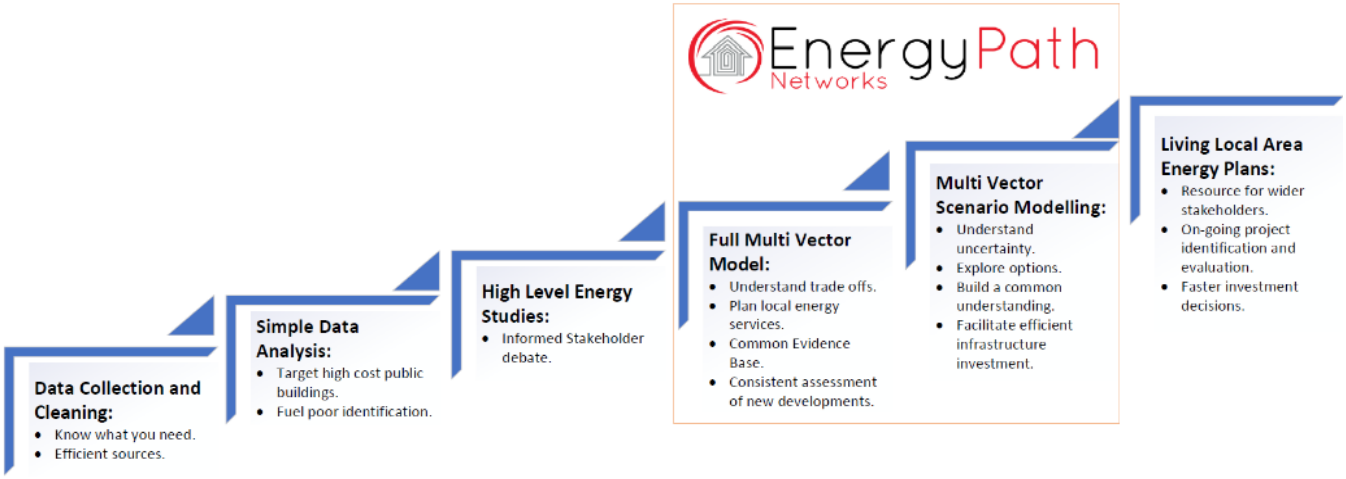
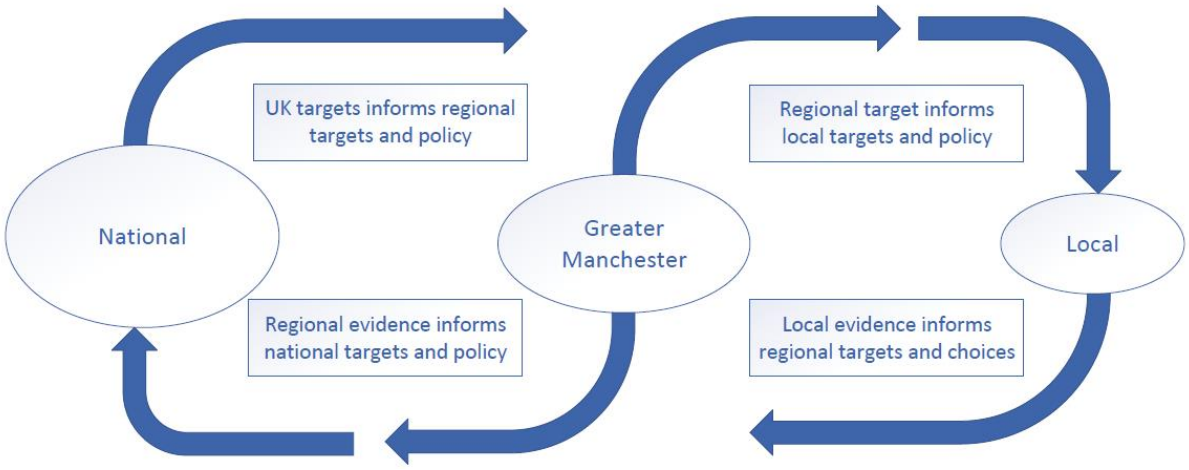


Figure 18: Energy Systems Catapult framework for LAEP



This emerging framework approach provides a method by which the planning and design of the future energy system of GM and related decision making can be considered at a regional and local level. It creates an effective feedback loop to inform national energy strategy and a mechanism by which the costs and benefits of different local energy system designs can be evaluated and plans for change can be defined. Within the framework local people and communities can be engaged and ultimately informed network choices and investment decisions can be made for a low carbon future.

Figure 19: Feedback Loop



The ambition of GM, coupled with this whole systems LAEP approach, will be connected effectively with other spatial, development and environment planning activities across the region, including integration with the GM infrastructure map, to support carbon reduction ambitions.

Energy Efficiency in Homes

It is proposed that GM explores options and mechanisms to support and increase the affordability of retrofitting the regions existing homes, to make them smart and energy efficient, leading to the creation of potentially 55,000 jobs by 2040.

A stronger, informed policy approach to both new build standards and importantly, retrofitting of existing building stock, is needed to drive innovation.

The scale of GM's proposed new developments and GM's Spatial Framework, will provide a significant opportunity to drive higher standards in the new build market with future proofing for the transition to low carbon energy supply. Planning positively for this change will avoid stranded assets in a rapidly changing transition. GM's Infrastructure Framework 2040[45] has the aim of insuring GM's infrastructure does not become a barrier to economic growth and impact on the environment.

There are currently few drivers for the improvement of existing homes up to or beyond current building regulations. As set out in the Clean Growth Strategy, the Government has identified an ambition to reduce the expense and challenge of retrofit solutions in all homes[46], therefore, it is proposed that GM considers implementing robust retrofitting policies within the planning system, which could encourage decarbonisation of existing homes by homeowners applying for planning permissions.

Skills and Supply Chain

As increased national and local standards begin to drive innovation, it will also be crucial to stimulate skills and training in this sector to enable roll out of retrofit measures and new infrastructure at the scale required. Presently a shortage of suitably skilled contactors and labour force means this sector is being held back from progressing at a rate that is comparable to other European countries.

[45] The Greater Manchester Infrastructure Framework 2040. (2018). Not Published.
[46] HM Government. October 2017. Clean Growth Strategy. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf

The Greater Manchester Low Carbon Environment Goods and Services (LCEGS) Sector Deep Dive Report[47] identifies relevant assets for the LCEGS sector in GM. Sector assets have been identified based on their role in supporting jobs and / or GVA growth for GM now and in the future. These include business clusters, industrial assets and research institutions. These were incorporated into GM's Sustainable Urban Development Strategy[48] and seen as a key strategic asset for the city region. For example, the University of Salford's Energy House serves as a construction innovation hub for companies to shape research and develop construction skills for the region. By providing a whole house laboratory, the Energy House permits robust testing of construction materials and performance of equipment and appliances. Support for the development of higher level skills, developed in concert with industry, will provide regional competitive advantage for GM in these areas.

[47] Greater Manchester Combined Authority. September 2016. Low Carbon and Environmental Goods and Services: Deep Dive 06 Report. Available at: http://www.neweconomymanchester.com/media/1758/06-lcegs-deep-dive-report-final.pdf

[48] Greater Manchester Combined Authority. 2014. Sustainable Urban Development Strategy. Available at: https://www.greatermanchester-ca.gov.uk/downloads/file/305/greater_manchester_sustainable_urban_development_plan

6. GM Energy Innovation Company

GM will explore the establishment of the necessary capacity and policy framework to accelerate the implementation of energy generation, distribution, storage, trading and smart systems schemes across GM.

The energy system fundamentally underpins GM's economy. For some households, businesses and communities, it is also one of their largest costs / risks. The electrification of heat and transport, to meet carbon and air quality targets, will put unprecedented stress on the electricity grid. The energy system must therefore rapidly undergo a "4D transition" of decarbonisation, digitisation, decentralisation, and democratisation, led largely by DNOs (or DSOs) and Energy Supply Companies. Much of the UK's carbon reduction to date has been through decarbonisation of the electricity network (coal to gas and renewables) however, it is recognised that GM can technically support up to 70% of the city region's energy demand locally. On this basis, local decarbonisation provides the opportunity to make an increased contribution to both local and national targets. If GM wants to achieve their carbon neutral targets by 2038, a local decarbonisation approach will be key to ensuring GM remains in control of how as a region these carbon neutral aspirations are achieved if complete national decarbonisation does not occur.

GMCA has made a commitment[49] to investigate the development of a GM Energy Innovation Company. The scope and role of such an enterprise is now being devised with specific reference to how it could support the accelerated decarbonisation of GM's infrastructure and overcome the anticipated problems. Feasibility work, carried out by GMCA in 2016, on a 'traditional' model for a municipal GM Energy Company concluded that the level of upfront investment and competition in the current marketplace was too high to justify this approach. Additionally, a 'white label' Energy Company approach was thought to offer insufficient control over energy tariffs and strategic direction to deliver GM's aspirations (e.g. around tackling fuel poverty) and therefore carried significant financial and reputational risk.

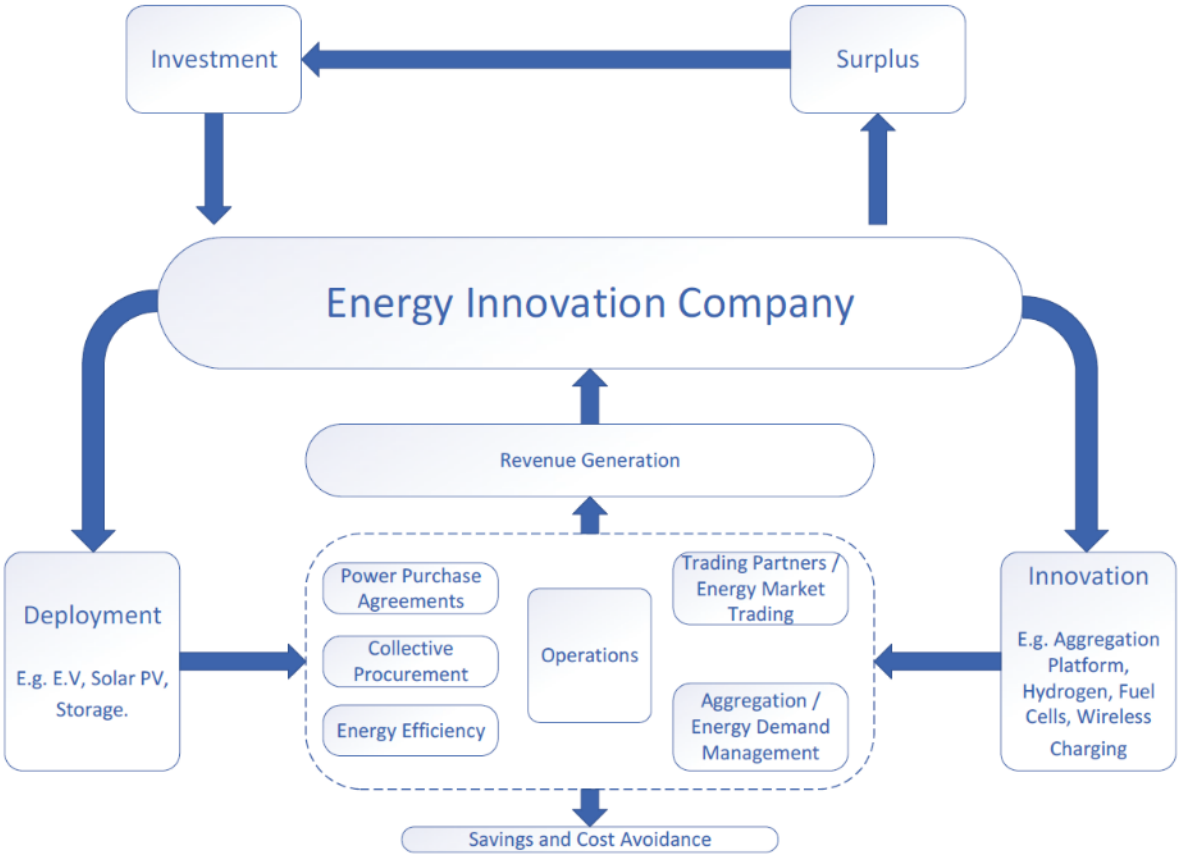
An option for establishing a GM Energy Innovation Company may combine the use of available funding streams to build the essential elements of an organisation which could develop, deliver and manage energy generation, energy efficiency and smart distribution projects (Figure 20). This would need to be explored by the region to establish the most viable and feasible option to meet local place-based need.

The optimisation of local assets to provide demand side response and potentially open other ancillary markets could form the key stone of a future Energy Innovation Company. A local Energy Innovation Company could potentially generate income for the 10 districts in GM and help GM's energy system to decarbonise and become smarter. In addition, it may increase the viability of local energy generation schemes and, eventually, potentially reduce the risk of energy price volatility to

[49] Mayoral Green Summit Event. March 2018. Manchester.

consumers via a contractual partnership with an existing Ofgem-licensed energy supply company, to supply energy trading and customer services.

Figure 20: Alternative Local and Industrial Approach



Resource

It is proposed GM reviews and explores options to remove known barriers to delivery and accelerated uptake.

It is currently understood that the GM Local Authorities consider the following to be barriers to progress and achieving scale: access to advice and technical support; opportunities for adopting new technologies; capacity to develop projects and bid for funding; and encouraging existing staff to adopt new ways of working.

An example could be the exploration of a new `Smart Energy' Project Delivery Unit which would seek to provide relevant technical and project management expertise, alongside other specialism and/ or capacity. Its main tasks will include supporting the development of smart energy, energy efficiency, and low carbon mobility (i.e. electric vehicle infrastructure and EV-to-Grid capability) and smart grid (including storage applications) related projects. This could form part of either the Energy Transition Region concept, Energy Innovation Company, both or simply a standalone resource.

7. Benefits

Policy and commercial insights analysis accompanying the EnergyPath Networks analysis considered the economic impact results from the scenarios modelled in Bury. Although the analysis is specific to Bury, similar socio-economic benefits could be expected for other districts across GM as they pursue decarbonisation in line with this Smart Energy Plan. Evidence on benefits of decarbonisation and the low carbon transition have been explored further with the UK Smart Systems and Flexibility Plan[50], Clean Growth Strategy[51], CCC Reports[52] and Options, Choices and Actions Report[53].

The energy transition costs illustrated for Bury would partly be offset by several socio-economic benefits, including:

Direct Benefits:

- Cost reduction and / or avoidance related to reduced energy usage;
- Improved efficiency and comfort levels; and
- Improved air quality and carbon reduction.

Wider Benefits:

- Employment opportunities;
- Increased energy security; and
- Improvement in health.

Methodology

The work in Bury considered these benefits using a methodology based on the HM Treasury Green Book[54]. The Green Book contains an appraisal guidance, background analysis and calculations toolkit[55], which was last updated in March 2017.

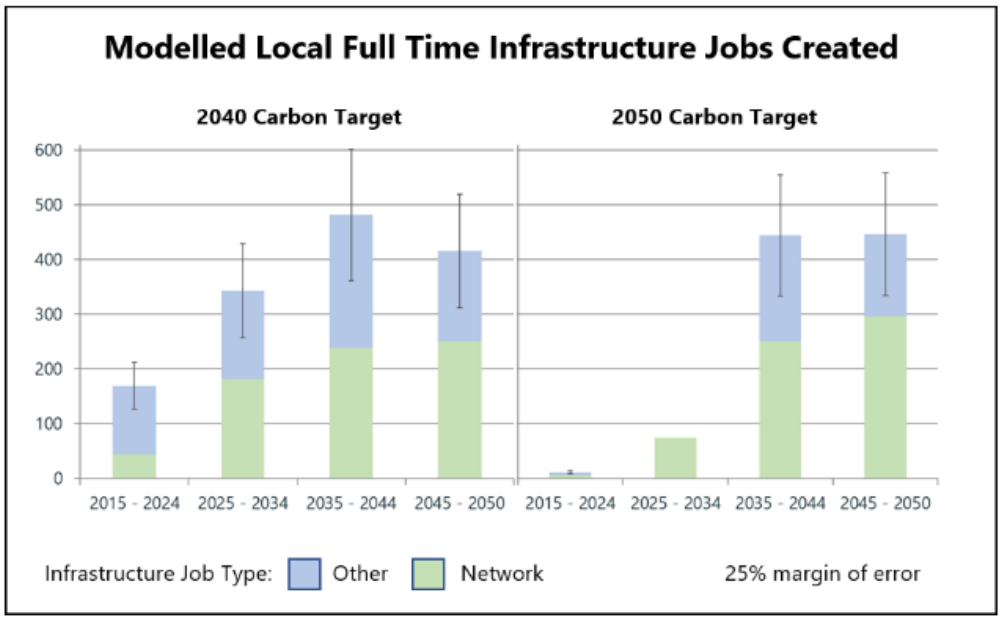
Validation of the outputs was carried out using assumptions and methodology from the Greater Manchester Cost Benefit Analysis, Low Carbon and Energy Efficiency Tool, with only minor differences in outputs. Examples of the benefits identified are given below.

[50] UK Government. 2017. Upgrading our Energy System: Smart Systems and Flexibility Plan. Available at: https://www.gov.uk/government/publications/upgrading-our-energy-system-smart-systems-and-flexibility-plan
[51] UK Government. 2017. Clean Growth Strategy. Available at: https://www.gov.uk/government/publications/clean-growth-strategy
[52] Committee on Climate Change. June 2018. Reducing UK emissions. 2018 Progress Report to Parliament. Available at: https://www.theccc.org.uk/wp-content/uploads/2018/06/CCC-2018-Progress-Report-to-Parliament.pdf
[53] ETI. 2017. Options, Choices and Actions. Available at: https://www.eti.co.uk/library/options-choices-actions-uk-scenarios-for-a-low-carbon-energy-system
[54] HM Treasury. April 2013. The Green Book: Appraisal and Evaluation in Central Government. April 2013. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf
[55] HM Treasury. April 2013. The Green Book Supplementary Guidance: Valuation of Energy use and Greenhouse gas emissions for appraisal. Available at: https://www.gov.uk/goverment/publications/valuation-of-energy-use-and-greenhouse-gas-emmisons-for-appraisal

Employment Benefits

The investment to decarbonise Bury will generate jobs to plan and innovate the local energy system and to produce and install the new infrastructure necessary. Figure 21 shows the modelled number of infrastructure jobs creased, with up to 490 in the period of 2035 to 2044.

Figure 21: Number of full time jobs within the time-period for both Bury carbon target scenarios



These jobs are additional to those expected under a scenario without a local carbon target. Network infrastructure jobs are those associated with reinforcing and installing new networks and jobs in the other infrastructure category represent domestic work (insulation, heating system replacement etc) and energy centre construction / maintenance.

The estimation of local infrastructure jobs created is based on standard treasury assumptions:

- 18 FTE per £m of investment., calculated from extra material spend; and
- 17.3% 'leakage' accounted for (jobs created outside the local authority) – the average government figure for sub-regional capital projects.

Jobs created associated with planning and innovation are not quantified but can be expected to be additional to those above. Innovation jobs created in Bury are likely to be higher if Bury was to take the lead and act ahead of other local areas.

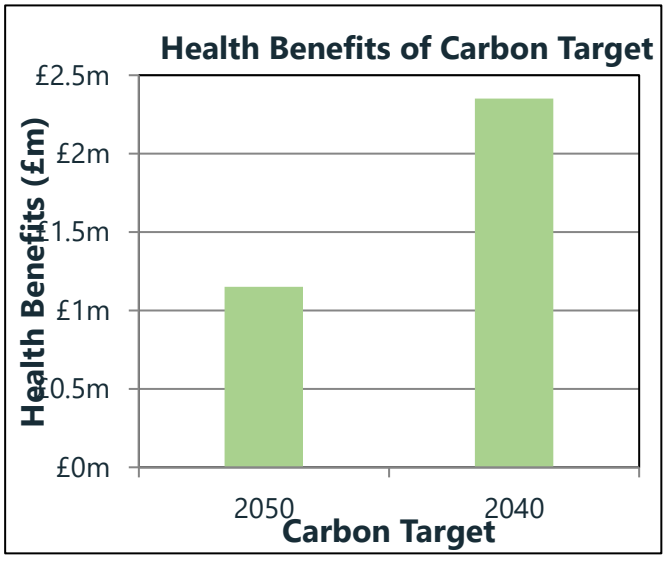
Health Benefits

The health benefits of the two carbon reduction scenarios were evaluated by converting projected energy savings into Quality Adjusted Life Years (QALYs[56]). The value placed on each QALY was £30,000 as per the UK Green Treasury book. Table 2[57] outlines the health benefits which different energy efficiency measures can provide when implemented.

Table 2: Health Benefits from across both the 2040 and 2050 carbon Bury EPN by individual energy measure.

Measure		Low	Medium	High
Loft Insulation	Duration of Benefits	42 years	47 years	50 years
	Present Value / Measure	£703	£885	£1,025
	QALY / Measure	0.034	0.045	0.053
Cavity Wall Insulation	Duration of Benefits	42 years	47 years	50 years
	Present Value / Measure	£758	£969	£1,139
	QALY / Measure	0.037	0.049	0.060
Solid Wall Insulation	Duration of Benefits	36 years	41 years	50 years
	Present Value / Measure	£592	£742	£1,195
	QALY / Measure	0.027	0.036	0.063
Replacement Boiler	Duration of Benefits	12 years	17 years	18 years
	Present Value / Measure	£127	£224	£246
	QALY / Measure	0.005	0.009	0.010
Central Heating	Duration of Benefits	12 years	17 years	18 years
	Present Value / Measure	£172	£303	£332
	QALY / Measure	0.006	0.012	0.013

Figure 22: Health Benefits from the 2040 and 2050 carbon Bury EPN carbon scenarios and by individual energy measure



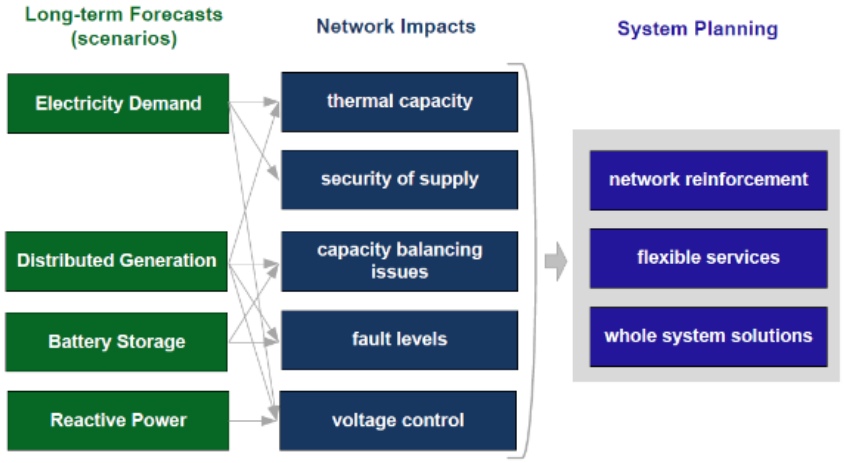
[56] A Quality Adjusted Life Year attempts to put a value on a year of good health. A value of £30,000 per QALY has been used as per the UK Treasury Green Book.
[57] Department of Energy and Climate Change. 2013. Fuel Poverty: a Framework for Future Action. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/211180/FuelPovFramework.pdf

8. Road Map to the Future

GM aims to become a carbon neutral city region. Developing an energy system which is smart and fit for the future, low carbon and economically, environmentally and socially sustainable is challenging, but not unsurmountable.

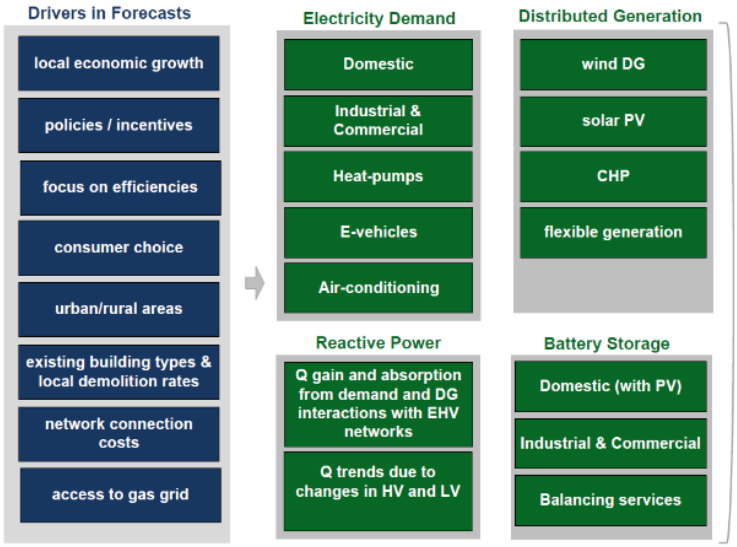
Electricity's North West Ltd (ENWL) Distribution Future Energy Scenarios (which covers a geographical footprint slightly larger than GMs boundaries) use a range of long term forecasts for demand, generation and storage, together with scenarios for network impacts to develop the scenarios used in long term system planning. These scenarios inform GM's view of the requirements for reinforcement, flexible services and other services in the region. The process is outlined below:

Figure 23 – Forecasting used in Network Planning



There are several variables which influence and act as drivers for forecasts, which in turn impact on electricity demand, reactive power, distributed generation and storage. These are described below.

Figure 24 – What drives forecasts?



ENWL's Distribution Future Energy Scenarios utilises five scenarios based on a Green Future versus Prosperity axis (Figure 25) and takes a baseline form present day through to 2050. The peak Megavolt Amps (MVA) forecast (Figure 26) illustrates how demand will grow in the north west of England over the next five years, for the different scenarios.

Figure 25 – 2018 forecasts – rationale of scenarios

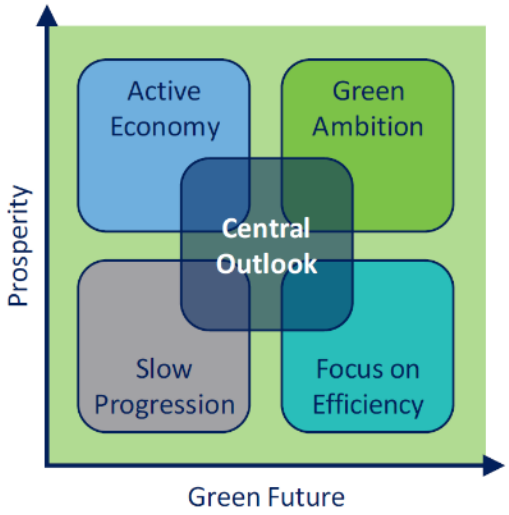
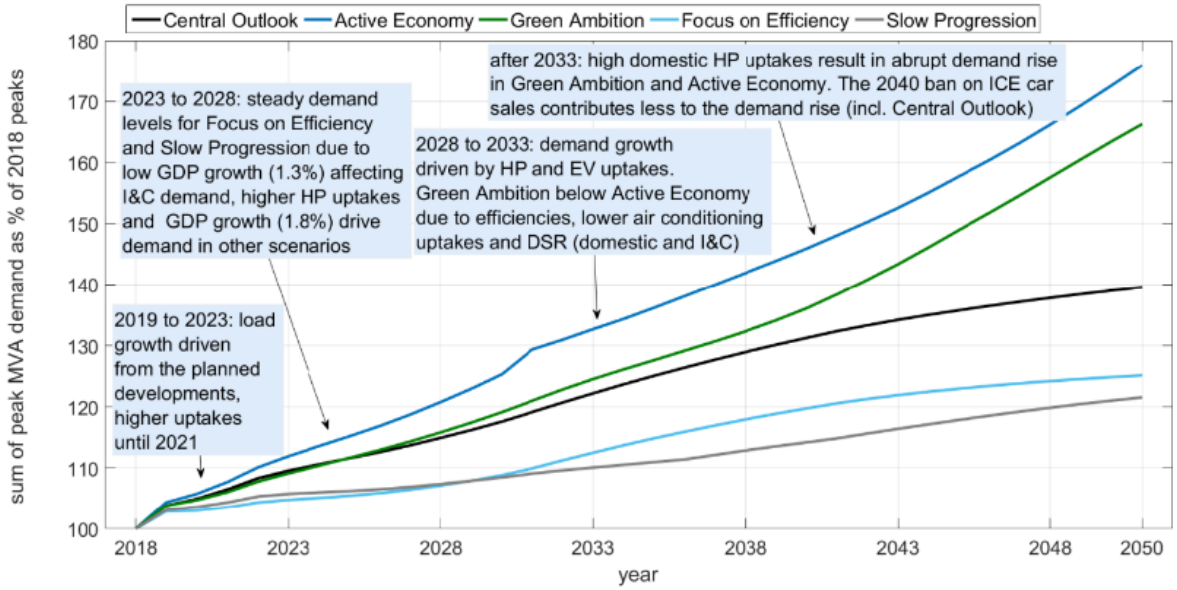


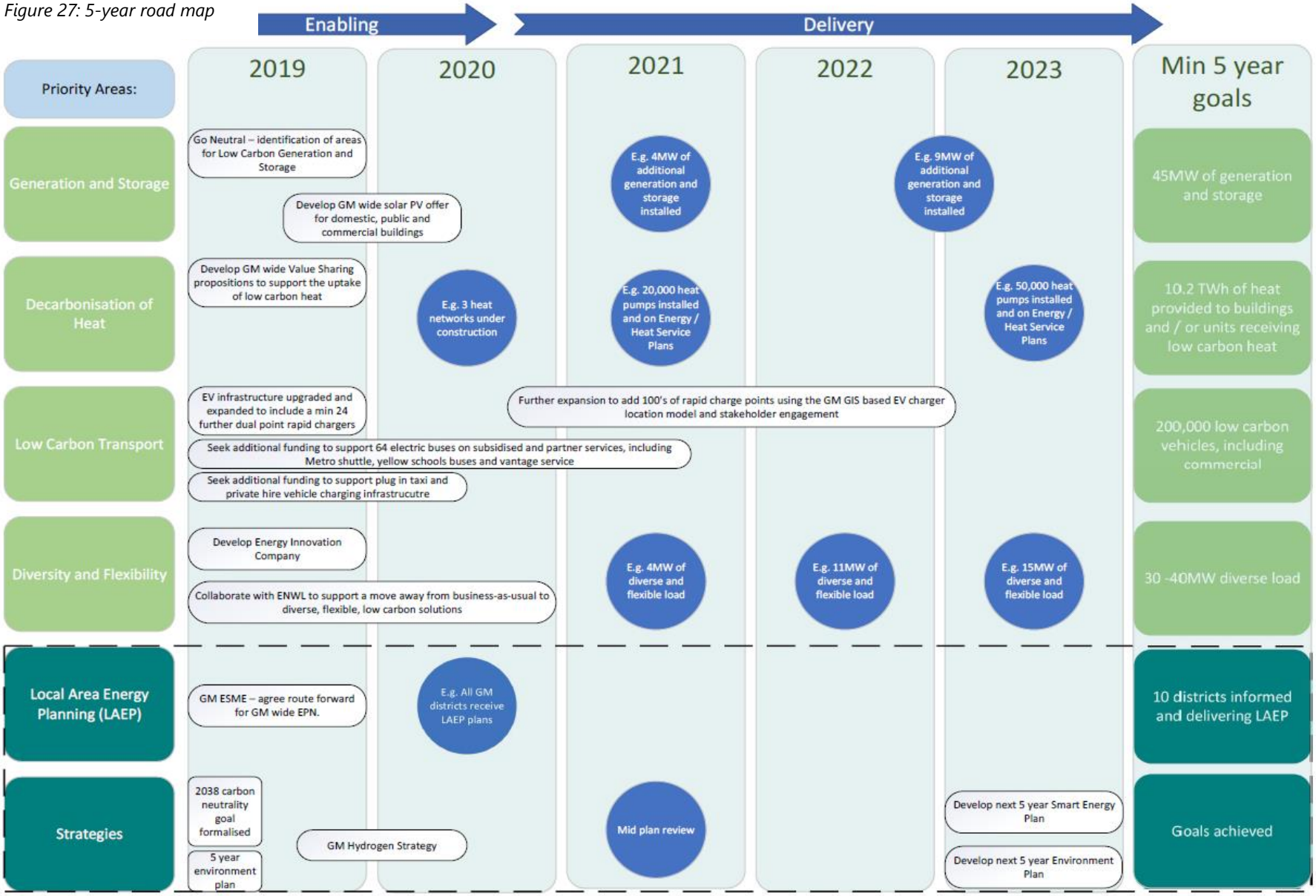
Figure 26: Peak MVA Forecast



A step change to how the GM region approaches energy efficiency, energy and more broadly decentralised delivery is required to facilitate GM's decarbonisation ambition.

The 5-year road map (Figure 27) provides the strong foundations and assets to stimulate change and growth for the future. This will be supported through enabling actions, demonstrators and delivery focused programmes as set out in the annex. The 5 -year goals are informed by current ESME modelling, which may change if GM decide to combine with SCATTER to provide a range.

Figure 27: 5-year road map



9. Acronyms

ANM	Active Network Monitoring
ASHP	Air Source Heat Pump
BEIS	Department for Business, Energy and Industrial Strategy
BMS	Building Management System
CCS	Carbon Capture Storage
CHP	Combined Heat and Power
DECC	Department for Energy and Climate Change
DEFRA	Department for the Environment, Food and Rural Affairs
DHW	Domestic Hot Water
DNO	Distribution Network Operator
DSO	Distribution System Operator
DSR	Demand Side Response
EES	Electrical Energy Storage
ENWL	Electricity North West Limited
EPN	EnergyPath Network
ESCOs	Energy Service Companies
ESC	Energy Systems Catapult
ESME	Energy System Modelling Environment
ETI	Energy Technologies Institute
EVs	Electric Vehicles
FCH	Fuel Cells and Hydrogen
GM	Greater Manchester
GMCA	Greater Manchester Combined Authority
GPC	Global Protocol for Community Scale
GSHP	Ground Source Heat Pump
GVA	Gross Value Added
GW	Gigawatt
HEMS	Home Energy Management System
HS2	High Speed Rail 2
ICL	Imperial College London
JAQU	Joint Air Quality Unit
kWh	Kilowatt Hour
LAEP	Local Area Energy Plan
LCEGS	Low Carbon Environment Goods
LEM	Local Energy Markets
MW	Megawatt
MWh	Megawatt Hour
MVA	Megavolt Amp
NEDO	NEDO Smart Community Demonstration
NMS	Network Management System
NPPF	National Planning Policy Framework
QALYs	Quality Adjusted Life Years
SCATTER	Setting City Area Targets and Trajectories for Emissions Reduction
Solar PV	Solar Photovoltaic
SPV	Special Purpose Vehicle
SSH	Smart Systems and Heat
TfGM	Transport for Greater Manchester
TNO	Transmission Network Operator
TWh	Terawatt Hour
TWh/yr.	Terawatt Hour per year
ULEV	Ultra-Low Emission Vehicles

Energy Systems Catapult supports innovators in unleashing opportunities from the transition to a clean, intelligent energy system.

Energy Systems Catapult
7th Floor, Cannon House
18 Priory Queensway
Birmingham
B4 6BS

es.catapult.org.uk
info@es.catapult.org.uk
+44 (0)121 203 3700

HOUSING, PLANNING & ENVIRONMENT

OVERVIEW & SCRUTINY COMMITTEE

Date:	11th April 2019
Subject:	GMS Implementation Plan Progress Update
Officer report:	Anne Morgan, Steve Fyfe & Mark Atherton

PURPOSE OF REPORT:

To provide Scrutiny Members with an interim update on progress against agreed GMS Implementation Plan actions to support the development of Scrutiny Committee work programming.

RECOMMENDATIONS:

Members are asked to:

- Review the progress made to date against the GMS implementation plan housing actions;
- Agree that the full draft of the Implementation Plan be presented to a future Housing, Planning & Environment Scrutiny Committee meeting

CONTACT OFFICERS:

Anne Morgan, Head of Planning Strategy, GMCA
anne.morgan@greatermanchester-ca.gov.uk

Steve Fyfe, Head of Housing Strategy, GMCA
Steve.fyfe@greatermanchester-ca.gov.uk

Mark Atherton, Assistant Director, GMCA
Mark.atherton@greatermanchester-ca.gov.uk

1. BACKGROUND

1.1. The 2017 Greater Manchester Strategy (GMS) sets out a commitment to develop an Implementation Plan to detail the specific actions and activities underway to deliver GM's strategic vision and ambitions. The GMS Implementation Plan is updated on a six monthly basis, with an assessment of progress against the agreed delivery milestones for the last six months, and development of new delivery milestones for the coming six months.

1.2. A full update of the Implementation Plan was due in April, however the review and update of the Plan has been delayed due to the finalising of the Local Industrial Strategy and unknown impacts and outcomes relating to Brexit. Work is now underway to begin the update, which will be presented as a draft to the May GMCA meeting.

1.3. In order to support Housing, Planning & Environment Scrutiny Committee in work programming a working version of the performance against the last six months milestones are provided at Appendix A **(TO FOLLOW).**

1.4. Wider work and engagement within the GM system to develop the delivery milestones for the coming six and twelve months will be undertaken over the coming weeks, to develop a full draft update of the GMS Implementation Plan.

2. DRAFT MILESTONE PROGRESS

2.1 An Officer assessment has been undertaken to provide an interim update on progress against the actions which fall under the remit of Housing, Planning & Environment Scrutiny. An initial RAG rating has also been provided based on Officer's assessment of our current collective ability to achieve the GMS 2020 ambition statements set out in the Implementation Plan.

2.2 Actions for consideration by Scrutiny members are:

Priority 4, action4.9 - Support growth in the regional centre, town centres and strategic employment sites

Priority 6 – Safe, decent and affordable housing

Priority 7 – A green city-region and a high quality culture and leisure offer for all

2.3 It should be noted the milestone updates are draft Officer updates. These may therefore be subject to change following further development and consultation on the draft Implementation Plan.

3. RECOMMENDATIONS

3.1 Recommendations appear at the front of this report.

Item 8

WORK PROGRAMME 2018/19

HOUSING, PLANNING & ENVIRONMENT OVERVIEW AND SCRUTINY COMMITTEE

The table below sets out the Committee's work programme for this municipal year. Members are invited to further develop, review, and agree topics which they would like to consider. Items considered last year are appended at the back of this report. The work programme will be reviewed and if necessary updated following each meeting to ensure that the Committee's work programme remains current.

The Committee has agreed the following standing agenda items:

- work programme
- an update on the GMSF if there is no substantive item on the agenda

In addition the Committee will be circulated with the GMCA's register of key decisions and the GMCA's monthly decision notice.

The work programme has been updated and, to assist members, the proposed items have been incorporated into the work programme for the Committee to review, and, confirmed subject to any changes.

The following items will be brought to the Committee once specific dates can be confirmed:

- **GM Congestion Deal**
- **Rail Station Devolution Update**

NB: This Committee will be reconstituted following elections and the subsequent GMCA meeting taking place in May 2019. It is suggested that the new HPE OS Committee will want to agree its work programme for 2019-20 at the meeting on 13th June 2019.

MEETING DATE	TOPIC	CONTACT OFFICER	REASON FOR SUBMISSION TO SCRUTINY COMMITTEE
11.4.19	GMS six monthly update on Performance and Implementation Plan	Simon Nokes/John Holden GMCA	To provide a performance update on six monthly actions and review the proposed actions for the next 6 months.
	GM Housing Strategy	Mayor Paul Dennett	To scrutinise the GM Housing Strategy prior to decision by the GMCA
	The Smart Energy Plan	Mark Atherton GMCA	To scrutinise the Consultants Report for Smart Energy Plan and supporting appendix for GM

	Northern Powerhouse Rail and HS2: TfGM Update On Transport For The North Issues	Simon Warburton, TfGM	Item for information only:
13.6.19	2019/20 work programme	Julie Connor GMCA	To allow the newly formed members of this Committee to review and agree the items for the 2019-2020 work programme
11.7.19			
Items considered at previous meetings			
5.6.18	Update work on town centres	Andy Burnham, GM Mayor	To provide an update following consideration of the Town Centre Challenge on 15 January 2018.
	Waste Strategy presentation	Sarah Mellor, GMCA	Rescheduled from March 2018 in light of government's announcement on the 25 year environmental strategy.
	Housing Package	Mayor Paul Dennett Portfolio Leader & Steve Rumbelow Lead Chief Exec for Housing & Planning	To allow members to comment on the delivery plan for the proposed GM Housing Package
	Introduction of a Zonal Fare Structure on Metrolink	Stephen Rhodes, Customer Director, Transport for Greater Manchester	Update on zonal fare structure on Metrolink network considered and agreed by the GMCA on 25 May 2018.
12.7.18	Cycling and Walking Update	Steve Warrener Director of Finance and Corporate Services, TfGM	Update on the strategic developments on walking and cycling and the Transforming Cities Fund.
	Green Summit Springboard Report	Cllr Alex Ganotis Portfolio Lead for Green City Region, Environment	Committee agreed this would report would be for information due to the number of items on the agenda.

		and Green Spaces & Mark Atherton GMCA	
	Northern & Network Rail	Dave Brown (Northern) and Martin Frobisher (Network)	To understand the performance of Northern and how this is impacting on individuals and businesses in Greater Manchester.
	GMSF	Anne Morgan, Head of Planning Strategy, GMCA	A report on the plans for public consultation.
	Introduction of a Zonal Fare Structure on the Metrolink Network	Stephen Rhodes, Customer Director, Transport for Greater Manchester	A report to be considered following public consultation and prior to the GMCA in July 2018.
16.8.18	Clean Air Plan	Simon Warburton and Megan Black, TfGM	To continue engaging the committee on this work as agreed at February.
	Transport planning in the context of the GMSF	Mia Crowther, and Nicola Kane TfGM	To provide the Committee with assurance that there is coordination between work on the GMSF and transport planning
13.9.18	Natural Capital and Urban Pioneer	Mark Atherton Assistant Director of Environment, GMCA Alex Ganotis?	A closer look at GM's natural assets, this could also feed into the GMSF work see https://www.greatermanchester-ca.gov.uk/info/20005/green_city_region/120/urban_pioneer
	GM Congestion Deal	Bob Morris	A key decision going to the GMCA in September This item was deferred
	Plastic free GM	David Taylor Executive Director, Waste & Resources	A campaign that the Mayor supports and the Committee were interested in the plastic recycling challenge when they looked at waste previously
11.10.18	Housing Vision Strategy	Steve Fyfe	To consider and provide comment on a draft vision to achieve safe, decent affordable housing within GM prior to submission for approval to the GMCA in October 2018
	Homelessness update	Mike Wright	To provide an update on progress with the Committee's recommendations endorsed by the GMCA in March 2018

	Waste Procurement technical solutions	David Taylor, Executive Director, Waste & Resources	To ensure that the proposed solutions to the waste services put forward by potential bidders will deliver what GM needs
15.11.18	GMS six monthly update on Performance & Implementation Plan	Simon Nokes/John Holden	To provide an update on six monthly actions and to review the next iteration of the implementation plan with associated actions
	Bus Reform Update	Michael Renshaw	To provide a further update at the request of the Committee
	Draft Waste and Resources draft Strategy	David Taylor, Executive Director, Waste & Resources	To consider an early draft of the Strategy's key priorities.
	Draft Natural Capital Investment Plan	Mark Atherton, GMCA	Requested by the Committee at the September meeting.
13.12.18 - Cancelled	City centre housing developments and use of property funds surpluses	Mayor Paul Dennett	To obtain agreement of investing further GM Housing Investment Loan Fund into City Centre housing developments. Approve £350k of GMHILF surpluses be used as revenue to develop affordable housing propositions and priorities as identified in the GM Housing Strategy (went to GMCA in December 2018)
	TfGM's Capital Programme	Steve Warrener	To provide the Committee with an oversight of TfGM's Capital Programme
10.1.19	Walking & Cycling Update/ Streets for All	Chris Boardman/ TfGM	Further update on the strategic developments on walking and cycling and the Transforming Cities Fund, in particular focusing on progress to date.
	Transport Capital Programme (reissued from 13th December 2018 meeting)	Steve Warrener, TfGM	To provide the Committee with an oversight of TfGM's Capital Programme
	Clean Air Plan Update	Simon Warburton, TfGM	To provide the committee with oversight on progress with the Clean Air plan
	Future of Greater Manchester	Andy Burnham, GM Mayor	Item for information only:

	Stockport Mayoral Development Corporation	Andy Burnham, GM Mayor	Item for information only:
14.2.19	GMSF	Anne Morgan, Head of Planning Strategy, GMCA	Possibly including Smart Energy Plan, Housing Vision, draft Infrastructure Framework, Natural Capital Investment Plan
	Transport 2040 Delivery Plan	Simon Warburton, TfGM	
	Infrastructure Framework 2040		**Item for information only:**
	Final Draft GM Natural Capital Investment Plan	Report of Councillor Alex Ganotis	**Item for information only:**
	Housing Vision	Mayor Paul Dennett	**Item for information only:**
14.3.19	Future Innovation in Transport	**Speakers confirmed as**: Clare Cornes, Glenn Lyons, Rafael Cuesta	External speakers to provide an external perspective on potential opportunities.
	Green Summit – 5 Year Environment Plan	Mark Atherton GMCA	To provide an update on the Green Summit.

Items Considered in 2017-18 by the Committee

Work in April 2018	• Green summit • Greater Manchester bus services update • Greater Manchester Strategy (GMS) implementation plan and performance dashboard • Draft response to the National Policy Planning Framework (NPPF)
13.3.18	• Greater Manchester Spatial Framework (GMSF) land supply • Homelessness
15.2.18	• Timetable for preparation for the revised GMSF • The air quality plan • Performance management framework for GMS
15.1.19	• Update work on town centres • Inclusive design of Greater Manchester's transport infrastructure
13.12.17	• Greater Manchester as a carbon neutral city region • Congestion • National infrastructure Assessment Consultation
16.11.17	• Transport strategy update • Greater Manchester housing affordability
18.10.17	• GMS implementation plan • Bus services in Greater Manchester

Housing, Planning & Environment Overview & Scrutiny Committee

GMCA GREATER MANCHESTER COMBINED AUTHORITY

Date: 11th April 2019

Subject: Update on Transport for the North issues

Report of: Transport Strategy Director, TfGM

PURPOSE OF REPORT

To provide an update on issues realting to Transport for the North, including Northern Powerhouse Rail and HS2, the Strategic Plan, and work on the Major Roads Network.

RECOMMENDATIONS

Members are requested to note the contents of the report.

CONTACT OFFICERS

Simon Warburton, TfGM	0161 244 1427	simon.warburton@tfgm.com
Liz Goldsby, TfGM	0161 244 0857	liz.goldsby@tfgm.com
John Cookson, TfGM	0161 244 1931	john.cookson@tfgm.com

BACKGROUND PAPERS

The following is a list of the background papers on which this report is based in accordance with the requirements of Section 100D (1) of the Local Government Act 1972. It does not include documents, which would disclose exempt or confidential information as identified by that Act.

The above papers and documents may be inspected during normal office hours at GMCA, Churchgate House, 56 Oxford Street, Manchester M1 6EU.

1. Introduction and Background

1.1 This paper provides an update on GM's position with regard to policy and scheme development being carried out with and by Transport for the North. The paper has sections on:

- Northern Powerhouse Rail and HS2
- The TFN Strategic Transport Plan
- The Major Roads Network

2. NPR/HS2

2.1 HS2 and Northern Powerhouse Rail are core, transformational infrastructure components in the growth strategy for Greater Manchester and the wider agenda for economic rebalancing in the UK. GMCA has been a strong supporter of the HS2 programme, whilst retaining a clear position on the need to ensure that it is delivered in a manner that fully compliments the city region's place-making, local employment and sustainable growth objectives.

2.2 GMCA considers HS2 as vital in increasing the capacity and connectivity of Britain's rail network and believes Manchester Piccadilly and Manchester Airport are the optimal locations for new HS2 stations, supplemented by a Hub location at the existing Wigan North Western station to the north of the conurbation. In addition, Northern Powerhouse Rail (NPR) aims to significantly improve capacity, frequency, speed and services between the North's six main cities and Manchester Airport.

2.3 GMCA has proactively responded to the opportunity for growth presented by HS2 and NPR. These transformational schemes are central to the Greater Manchester Strategy aspirations and the Greater Manchester Transport Strategy 2040. The latter recognises HS2's potential to be a strategic economic 'game-changer' that will:

- Uplift productivity through enhanced labour market and business-to-business connectivity;
- Increase network capacity; and
- Improve international connections through the HS2 station at Manchester Airport.

2.4 The Strategy highlights the ability of HS2 to stimulate regeneration in areas adjacent to HS2 stations, spark a renaissance in engineering skills development and provide a major stimulus for a domestic supply chain, with up to 30,000 jobs being directly created by the project at its peak.

2.5 The draft Greater Manchester Spatial Framework, currently being consulted on, sets out ambitious plans for the city-regions growth. This recognises the strategic importance and economic value of the enhanced journey times and connectivity provided by HS2 and NPR. It demonstrates the strong focus on distributing development in the core of the

conurbation and maximising the opportunity at Manchester Piccadilly and Manchester Airport.

2.6 In March 2018 GMCA, Manchester City Council and Trafford Council published a comprehensive growth strategy for the stations at Manchester Airport and Piccadilly, which sets out how HS2 can have maximum impact through station planning; wider connectivity; full support for adjacent regeneration; and local skills and supply chain benefits.

2.7 The Growth Strategy has been developed around "4 pillars" to provide a framework for understanding how the economic growth potential can be harnessed:

- Station Design and Infrastructure
- Wider Connectivity
- Regeneration around the station
- People, Skills and Employability

2.8 At Manchester Piccadilly the growth strategy is integrated with the updated Strategic Regeneration Framework (SRF) for the Piccadilly area, which was approved by the Manchester City Council Executive in June 2018. The vision for Manchester Piccadilly within the SRF is to deliver a major new district for Manchester, extending the city centre, with a world class transport hub at its heart.

2.9 At Manchester Airport, the growth strategy is integrated with the Greater Manchester Enterprise Zone (EZ). This is an area driven by the economic activity generated by the Manchester Airport, Airport City and the proposed MediPark which builds on the significant planned growth of Manchester Airport.

2.10 On 11 October 2018, the Secretary of State for Transport announced the launch of two HS2 consultations for the section of the route from Crewe to Manchester and West Midlands to Leeds (Phase 2b). The consultations are on the Working Draft Environmental Statement (WDES) and the Working Draft Equality Impact Assessment Report.

2.11 The working draft documents were not statutory consultations but were intended to inform the finalised design and Environmental Statement for the HS2 Hybrid Bill.

2.12 The consultation closed on the 21st December 2018. Responses were submitted by Manchester City Council, Wigan Council, Trafford Council and by TfGM on behalf of GMCA.

2.13 There will be a Statutory Consultation on the final Environmental Statement when the Hybrid Bill is deposited.

2.14 The Hybrid Bill for HS2 Phase 2B is due to be deposited in summer 2020. Royal Assent is currently anticipated in 2023. Phase 2B is expected to be operational in 2033.

2.15 TfN are developing the proposals and business case for NPR. The HS2 Phase 2B Hybrid Bill will include NPR 'touchpoints'.

2.16 GM Partners are continuing to work closely with DfT, HS2 and TfN to develop the proposals for HS2 and NPR in Greater Manchester.

3. TfN Strategic Transport Plan

3.1 TfN's Strategic Transport Plan (STP) sets out the need for investment in transport across the North of England and identifies the priority areas for improved connectivity. The draft STP was originally published for consultation in January 2018; following consultation, the revised STP was published in January 2019.

3.2 TfGM, along with other transport authorities across the North of England, is a partner organisation of TfN, and has provided considerable input to the process of developing the STP, both internally as a member of the steering group and in terms of formal responses to consultation. Other GM bodies (such as Manchester City Council) have also provided detailed responses to consultation.

3.3 The STP sets out priorities for planned investment. TfGM has provided considerable input to this process and is supportive of the priorities identified.

3.4 It is recognised that the STP is a starting point, and there is considerable further work to do in making the case for the investment set out. In particular, there will be a need for:

- Further work to be done on prioritisation. This may be politically difficult, as there will be a process of picking 'winners' (and therefore, also, 'losers') but it is a necessary stage in moving towards a strong and detailed case for investement.
- Further work to be done in detailing and making the case for individual interventions identified. (It should be noted that many identified interventions are currently rather high-level.)
- Regular reviews of the investment tables, to ensure that they continue to reflect current circumstances and priorities.

3.5 TfN recognises the issues above, and is starting a programme of work to address these next steps. TfGM is active in framing the questions which will be addressed in the next stage of this work. In particular, TfGM is raising the following issues:

3.6 <u>Prioritisation of the areas of greatest concentration of trips:</u> When looking at which interventions to prioritise, it will be important to recognise the importance of Manchester and other core cities, both in terms of economic weight and in numbers of trips generated. The STP stresses the need to connect to new strategic development sites: it is important to recognise and to stress that the most important location in terms of overall economic impact in the North for new homes and jobs over the next 20 years will be the Greater Manchester Regional Centre.

3.7 <u>Balance between road and rail:</u> Given the importance of sustainable urban growth solutions and the unique growth potential that the city regions offer to the North as a whole, TfGM has emphasised the need for a significant weighting to be given to rail based investments. This goes beyond HS2 and NPR; even with these investments in place, most

journeys will still be on the 'classic' rail network, and where there remain substantial opportunities to significantly improve journey times, frequencies and resilience, particularly in urban areas.

4. Recommendations

4.1 Recommendations are set out on the front page of this report.

Simon Warburton

Transport Strategy Director, TfGM