Manchester City Council
Report for Information

Report to: Environment, Climate Change and Neighbourhoods Scrutiny Committee – 20 July 2023

Subject: Local Area Energy Plan – Progress Update

Report of: Strategic Director (Development)

Summary

GMCA is the first city region in the country to compile and complete Local Area Energy Plans (LAEP) from street to network level. LAEPs have been produced at both the regional level and also for each of the 10 districts. The GM and Manchester LAEP were adopted in September 2022. This report provides Members with an overview of the Manchester LAEP and how this will be used to meet our target to be a zero carbon city by 2038.

Recommendations

The Environment, Climate Change and Neighbourhoods Scrutiny Committee is recommended to consider and comment on the information in the report.

Wards Affected: All

Environmental Impact Assessment - the impact of the issues addressed in this report on achieving the zero-carbon target for the city
LAEP aims to accelerate the deployment of low carbon measures in the city. The issues set out in this report, and the development of workstreams to address them are key to driving a reduction in emissions and becoming a zero carbon city.

Equality, Diversity and Inclusion - the impact of the issues addressed in this report in meeting our Public Sector Equality Duty and broader equality commitments
The issues regarding retrofit and decarbonisation of energy as set out in this report, could lead to multiple benefits, including but not limited to: • lower energy bills and greater energy efficiency, and therefore reduced fuel poverty • improved health and wellbeing due to better thermal comfort during very cold and very hot periods of the year and better indoor air quality

Manchester Strategy outcomes	Summary of how this report aligns to the OMS/Contribution to the Strategy
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	The delivery of the retrofit and decarbonisation of energy ambitions as set out in the LAEP will provide long term employment opportunities to Manchester businesses and residents
A highly skilled city: world class and home grown talent sustaining the city's economic success	Demand for highly skilled retrofit labour will provide opportunities for training and upskilling both new and existing operators
A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	The delivery of the retrofit and decarbonisation of energy ambitions to the city's housing stock will ensure healthier, more comfortable homes for Manchester residents and result in improved health and wellbeing for the city's residents
A liveable and low carbon city: a destination of choice to live, visit, work	The delivery of the retrofit and decarbonisation of energy ambitions will address the transition of Manchester's existing housing stock to zero carbon, and ensure the available housing meets the needs of the city's residents and visitors
A connected city: world class infrastructure and connectivity to drive growth	Investing in the provision of more opportunities to charge electric vehicles (EVs) will contribute to creating a greener and more attractive city utilising modern technologies.

Full details are in the body of the report, along with any implications for:

- Equal Opportunities Policy
- Risk Management
- Legal Considerations

Contact Officers:

Name: Becca Heron
Position: Strategic Director Development
Telephone: 0161 234 3030
E-mail: rebecca.heron@manchester.gov.uk

Name: James Tate
Position: Interim Head of Infrastructure and Environment
E-mail: james.tate@manchester.gov.uk

Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

Greater Manchester Local Area Energy Planning: Overview and Insight
Local Area Energy Plan – Manchester
Manchester Climate Change Framework 2020-25
Manchester Electric Vehicle Charging Strategy

1.0 Introduction

1.1 Greater Manchester (GM) has a target to be a zero carbon city region by 2038, twelve years ahead of UK Government's 2050 target. In 2020, the Manchester Climate Change Partnership developed a high-level strategy for the city to focus action that would help deliver on its climate change ambitions. The Manchester Climate Change Framework 2020-2025[1] has been recently updated and was the subject of a report to the September 2022 meeting of this Scrutiny Committee.

1.2 The Framework used a science-based targets approach to set a zero carbon date of 2038 and a carbon budget of 15m tCO2 for the period 2018-2100 for the city.

1.3 The Climate Change Framework 2020-25 sets out that buildings are responsible for 68% of the city's direct emissions and ground transport for 32%. The framework sets out the scale of action needed to reduce direct emissions from buildings and transport by 50%, and the scale of increase in renewable energy generation needed to support this.

1.4 The GM Local Area Energy Plan (LAEP), adopted in September 2022, sets out the current position and an energy roadmap towards that decarbonised future and describes a range of near-term, low regret, priority zones and opportunity areas for different technologies to address challenges presented by current energy type and usage. The term 'low regret' is used to describe measures that have a high confidence of succeeding based on current information and available technology.

1.5 The Manchester LAEP provides an important tool for identifying and prioritising action to take on the areas identified in the Framework to help the city remain within its carbon budget. This divides the city into 8 priority areas of approximately equal population. The Manchester LAEP can be downloaded using the following link:

https://gmgreencity.com/wp-content/uploads/2022/08/Manchester-LAEP-Final.pdf

2.0 Background

2.1 In 2018, the Government invested in a new Prospering from the Energy Revolution Challenge fund via UK Research and Innovation (UKRI) to develop future smart energy systems and prove their use at scale.

2.2 The energy revolution challenge brought together businesses, research, and public sector to develop and demonstrate new approaches to provide cleaner, cheaper, and more resilient energy. This included providing energy in ways that consumers want, by linking low-carbon power, heating and transport

[1] Manchester Climate Change Framework 2020-25 | Manchester Climate Change

systems with energy storage and advanced IT to create intelligent, local energy systems and services.

2.3 The Government invested in fast-tracking three practical local energy systems demonstrators and a number of whole system design studies. The design studies' objective was to create a pipeline of investable projects for the future. The energy whole system approach looks at developing a portfolio of options for clean energy in all its various uses (electricity, heating and transport), and by fitting them together in the best combinations to deliver value for business and consumers.[2]

2.4 The £5.9m GM proposal was one of the successful design studies, which included the production of the Local Area Energy Plans (LAEPS). GMCA worked with Energy Systems Catapult (ESC) to develop LAEPs for each of the 10 districts and a GM LAEP summarising the overall position.

2.5 The LAEP considers two future energy scenarios for Manchester and identifies a number of activities and technologies that can help meet the city's zero carbon target:

- the primary scenario which makes use of proven measures; and
- the secondary, alternative future local energy scenario, which assumes the potential for hydrogen heating and energy becoming readily available

2.6 As well as setting out the scale of work required and identifying priority areas, both the GM LAEP and Manchester LAEP set out the estimated total costs of the measures with a modelled investment required of c£65bn GM wide, with the proportion within Manchester being c£13bn. It is noted that around 70% of this expenditure would be classed as business as usual and would be spent anyway on new equipment and upgrades. The majority of the costs relate to private sector properties, both residential and non-domestic, where the council has limited direct control.

2.7 The National Infrastructure Assessment is produced every five years by the National Infrastructure Commission. The second one is due to be published in the autumn of 2023. Each Assessment analyses the UK's long term economic infrastructure needs, outlining a strategic vision over the next thirty years and setting out recommendations for how identified needs should be met.

2.8 In relation to net zero and energy, recommendations are likely to focus on achievable and affordable actions to speed up the transition to low carbon heat and to find ways to motivate consumers to make the necessary changes. To do this the Commission has considered how the electricity network could facilitate higher demand, what role hydrogen may take in providing heat and electricity, and the role of carbon capture and storage networks. It is likely that if transition is to happen at scale then government support to consumers will be required, such as the Boiler Upgrade Scheme. Once published the work of the Assessment will help in developing future LAEP actions and directions.

[2] A whole energy systems approach can help deliver the Clean… | The ETI

3.0 Opportunities and Challenges

3.1 The LAEP aims to define the extent of the transformation needed (including a focus on identifying first steps to progress action), and to provide a robust evidence base and plan to help engage businesses and residents in accelerating towards the carbon neutral goal and Manchester's net zero ambition. The LAEP sets out a number of focus areas and these are described below:

3.2 **Fabric Retrofit** – Improving insulation and heating efficiency will ensure that buildings will lose less energy and reduce energy demand. Around a third of homes (around 100,000) across the city will need some level of fabric retrofit, and the case for this is likely to have increased with recent energy price rises. Fabric retrofit and solar PV are low regret measures (seen as having a high confidence of succeeding based on current information and available technology) to progress in the short term.

3.3 MCC has already started to undertake retrofit works to both its domestic and non-domestic building stock as funding becomes available. A number of schemes have been utilised to ensure that energy efficiency improvements are being made to the city's housing stock including:

- Social Housing Decarbonisation Fund
- Your Home Better Scheme
- Home Energy Loan Plan
- Home Upgrade Plan

3.4 **Heating systems and networks** – To move towards decarbonised heating systems three heating options are explored for buildings: electric heating (primarily heat pumps), hydrogen to replace natural gas, and district heat networks. For hydrogen to play a significant heat decarbonisation role, certainty would be required that hydrogen will be available to supply Manchester in a timeframe that supports the delivery of the GM carbon budget. Alternatively, it is estimated that heat pumps could potentially serve most dwellings (over 180,000) and 95% of non-domestic buildings. In those areas where there is a higher density of buildings district heat networks could supply a large share of buildings, potentially serving 32,000 homes.

3.5 A net result of transitioning to low carbon will be an increase in electricity demand across all the city and all scenarios by 2038. Understanding this impact in a whole systems approach is critical to how we model our transition. Also, as much of the existing gas network could be suitable for repurposing to hydrogen, understanding and identifying where the initial priority areas for hydrogen are likely to be within the region is also key along with an understanding of deployment timescales.

3.6 District Heat Networks have the potential to supply a significant proportion of buildings in and can be considered low regret. There may also be opportunities to consider expanding and even joining up heat networks across

district boundaries. A number of the council's buildings within the city centre are currently connected to the Civic Quarter Heat Network and although this is currently gas-powered alternative fuel sources, such as hydrogen, are being considered.

3.7 **Local Energy Generation and Storage** - There is significant potential for local renewable energy generation within the city mainly through the deployment of rooftop solar photo voltaic (PV) panels. There is a potential capacity to generate approximately 680MW_p domestic and 523MW_p non-domestic through this means by 2038, potentially yielding 901GWh of energy annually. It is more beneficial to deploy generation as early as possible, while the national electricity mix is more carbon intensive. Deploying such high quantities of generation will, however, be very challenging and may present challenges to the electricity network as well as requiring considerable coordination. To reduce emissions in line with the GM carbon budget, in Manchester local energy generation could increase significantly, consisting predominantly of the installation of solar PV on much of the available roof space but the installation of micro-turbines should also be considered.

3.8 **Transport and EV charging** - The transition to electric vehicles (EVs) will require significant supporting infrastructure and a separate Manchester EV Charging Strategy was adopted in December 2022. It is recognised that all areas of the region will require an extensive shift away from liquid fuels to electric vehicles for personal cars by 2038. Across the city all homes with off-street parking are expected to have EV charging facilities installed by 2038 (around 72,000), with publicly available charging hubs offering a potential solution for charging for those homes that have no off-street parking. Uptake of electric vehicles in Manchester is forecast to increase from c2,000 EVs today to over 150,000 by 2038 and this will continue to drive a demand for EV chargers to be installed across all areas, along with multiple public charging stations (or hubs). By the end of December 2022 this amounted to 1,848 EVs in Manchester.

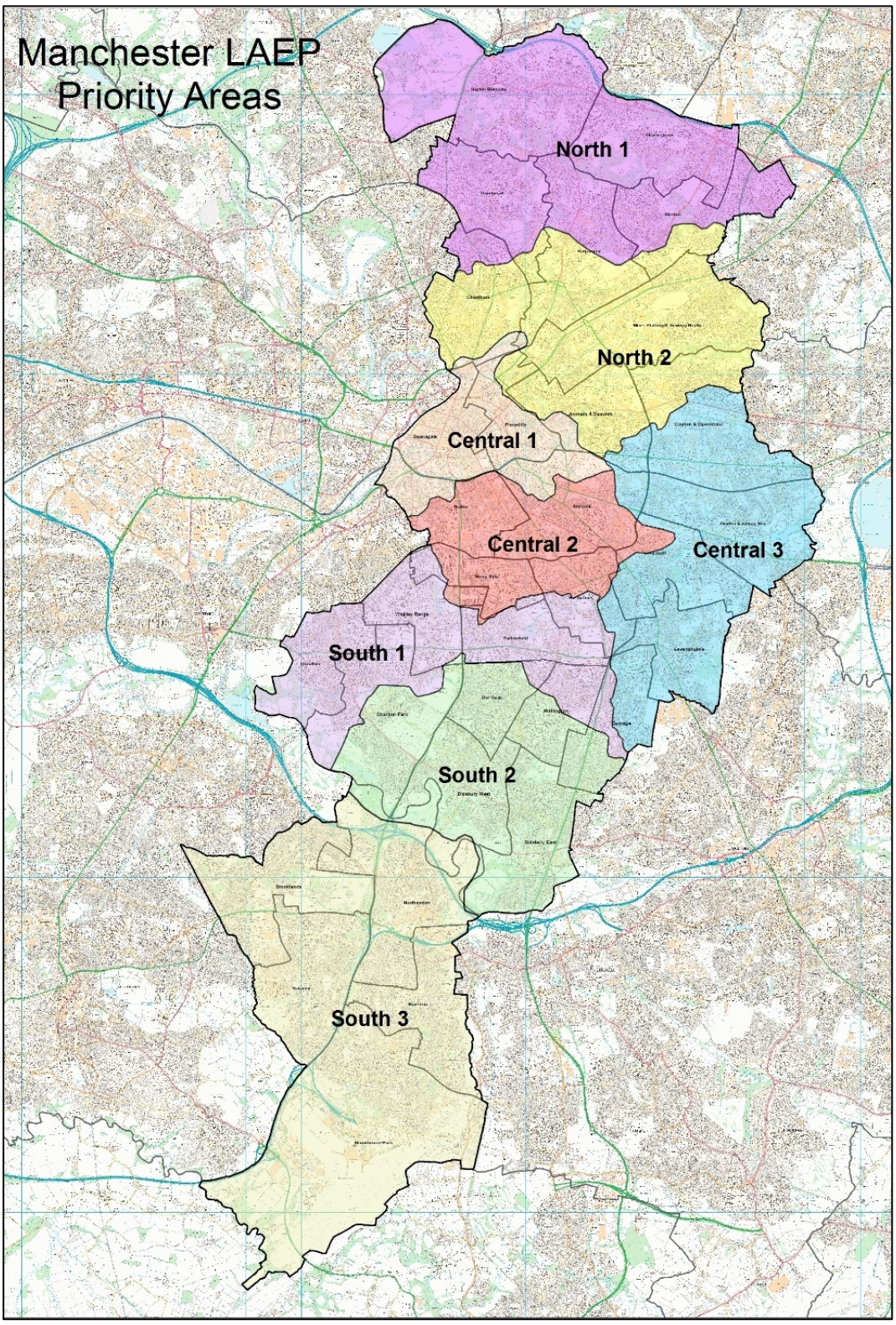
3.9 Of the MCC council vehicle fleet 23% are currently EVs and as vehicles come to the end of their lease periods, further EVs are sought to replace them. Currently 27 of the Biffa fleet of refuse lorries are electric and there are plans to transition the remainder of the refuse fleet to electric in the next 12-18 months. The council currently operate a fleet of 12E-cargobikes and 3 trailers predominantly used by Parks and Bereavement Services.

3.10 As part of the Clean Air Guidance Note, Best Practice Recommendations are considered in the assessment of planning applications and conditions for the installation of EV points are applied to planning approvals in relevant circumstances.

Priority Areas

3.11 The LAEP divides the city into 8 Priority Areas (based on 33-11kV substation boundaries) for the purposes of modelling and to understand what is needed for decarbonisation at a more local level. These areas are shown on Map 1

below. These areas and first steps/opportunities were defined in the LAEP produced by GMCA and ESC.



The table below indicates potential activities in each of the Priority Areas in terms of 'First Steps' and 'Long Term Deployment Areas'.

Table 1: Priority Area Actions

Priority Area	First Steps	Long term deployment
North 1	Retrofit priority area Solar PV priority area	Heat pump prevalent area Hydrogen for heat opportunity area
North 2		Hydrogen for heat opportunity area District heat prevalent zone Non-domestic opportunity area
Central 1	District heat priority area EV charging hub priority area Solar PV priority area Non-domestic priority area	Hydrogen for heat opportunity area
Central 2	Heat pump priority area	Hydrogen for heat opportunity area
Central 3	Retrofit priority area	Heat pump prevalent area Hydrogen for heat opportunity area Non-domestic opportunity area
South 1	Heat pump priority area	Hydrogen for heat opportunity area
South 2		Heat pump prevalent area Hydrogen for heat opportunity area Flexibility & storage opportunity area
South 3	Home EV charging priority area Heat pump priority area	Hydrogen for heat opportunity area

Challenges

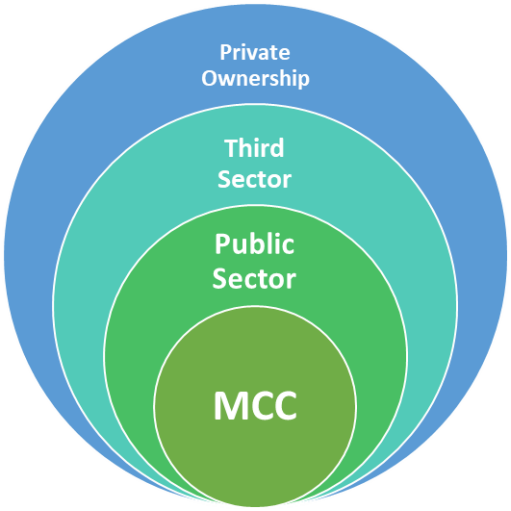
3.12 A number of barriers have been identified which will need to be overcome if the LAEP is to be delivered and its benefits realised. These include:

- Clearly set out roles and responsibilities
- Finance sources and length of pay back periods
- Levels of stakeholder and co-operation required as an ad hoc approach may not provide all the opportunities
- Speed of deployment of proposed interventions
- Skill shortages in the 'green skills' sector
- Supply chain issues in providing the necessary equipment
- Grid capacity and the need for improved and new infrastructure

4.0 MCC Sphere of Influence

4.1 The council's main role in taking the LAEP forward is that of facilitator and enabler rather than as a main delivery agent. Although the council has control over its own estate and through its own powers it will need to work with other stakeholders (such as Electricity North West (ENWL), Cadent, GMCA, etc) to ensure that the LAEP is delivered. Figure 1 below indicates that the council has decreasing influence the further we move from the centre of its own activities and powers.

Figure 1. Sphere of influence



4.2 The main areas of MCC influence is in the areas of building retrofit to the MCC estate (both domestic and non-domestic), the transition of the council's vehicle fleet to EVs, expansion of the public EV charging network on council owned land, planning policy in terms of requirements for new developments (energy efficiency and EV provision) and in the development of Strategic Regeneration Frameworks and working in a co-ordinated way with ENWL to ensure that the necessary grid upgrades occur in a timely manner.

5.0 Progress to date

5.1 Two posts have been created (Principal Policy Officer and Policy Officer) to lead on the progress of the LAEP. Recruitment has taken place and these posts have been filled as of March 2023.

5.2 Initial work has involved the following:

- contacts have been made in relevant departments across the council to understand the work already being undertaken in these areas where the council has direct control
- contacts have been made with relevant external organisations, e.g the GMCA, Climate Change Agency, ENWL

- ENWL have set up regular meetings to discuss future work programmes to assist in identifying potential grid improvement works and staff are acting as liaison for this
- identifying and collecting information in order to establish a baseline data source to monitor progress of the LAEP (further information can be found in Appendix 1)
- the formulation of an Action Plan which can be further developed going forward (Appendix 2)
- following the adoption of the EV Charging Strategy work is progressing towards the procurement of an EV charge point operator to extend the city's public charging network within council owned car parks.
- commencement of a review of Local Plan polices in relation to the requirement for new build developments

Electric Vehicle Charging

5.3 Following the adoption of the Electric Vehicle (EV) Charging Strategy in December last year progress is being made towards procuring a charge point operator (CPO) to install, manage, and operate public chargepoints in off-street locations at council owned car parks and facilities. The initial phase of this procurement is expected to provide in the region of 150-200 chargers with installation expected to take place over a 24 month period commencing early next year however the details of the tender specification and any subsequent rollout programme are still to be finalised. A soft market testing exercise has recently taken place and was completed at the end of May. Over 20 responses were received from CPOs and the analysis of these will be used to finalise the tender documents.

5.4 Additional funding is available to the council to assist in the expansion of the public charging network. Funding that had been put aside by Transport for Greater Manchester (TfGM) for this purpose from the City Region Sustainable Transport Settlement (CRSTS) has now been released by GMCA to the districts as the delivery mechanism of programmes going forward has now changed. For MCC this allocation amounts to £1,108,160 towards capital investment. Funds will be released to the council in line with the agreed CRSTS drawdown process where it can be shown that it helps deliver charging in underserved or otherwise uncommercial areas as part of a commercial deal with a CPO partner.

5.5 The Local Electric Vehicle Infrastructure (LEVI) grant is a government funding stream coordinated by the Officer of Zero Emission Vehicles and is split into two elements, capability and capital funding. In April 2023, GM were advised on its allocation for 23/24 and 24/25. Funding has been made available across both funding streams, Capability (resource) and Capital for the region.

- £1.44m for Capability (primarily for recruitment, internal transfer or additional time spent by existing staff, but there would be consideration of a limited amount of consultancy)
- £16.2m for Capital (primarily for residents without off-street parking, but consideration areas such as park and ride).

5.6 The MCC allocation from the Capability fund amounts to £54,600 over the two financial years and will part fund the Policy Officer LAEP post in relation to the resource spent on EV related work. OZEV state that the LEVI Capital fund will be administered “using a flexible approach. Projects must demonstrate that they primarily focus on low powered chargepoints to benefit residents without off-street parking. But other chargepoints and users will be considered.” The final allocations are yet to be agreed but the indicative LEVI Capital allocation for MCC is £2,245,216.

6.0 Next Steps

6.1 In the next few months officers within the Infrastructure and Environment Team will take forward work in relation to the procurement of a charge point operator and a further report in relation to EV charging will be considered at the September meeting of the Environment, Climate Change and Neighborhoods Scrutiny Committee.

6.2 Officers will also provide assistance with the update to the energy policies contained within the Draft Local Plan which is due to be published for consultation later this year.

6.3 Subject to funding, an Infrastructure Delivery Plan will be commissioned to focus the delivery actions to be taken.

7.0 Recommendations

7.1 The Environment, Climate Change and Neighbourhoods Scrutiny Committee is recommended to consider and comment on the information in the report.

8.0 Appendices

8.1 Appendix 1 – LEAP Monitoring Report

8.2 Appendix 2 – LEAP Action Plan