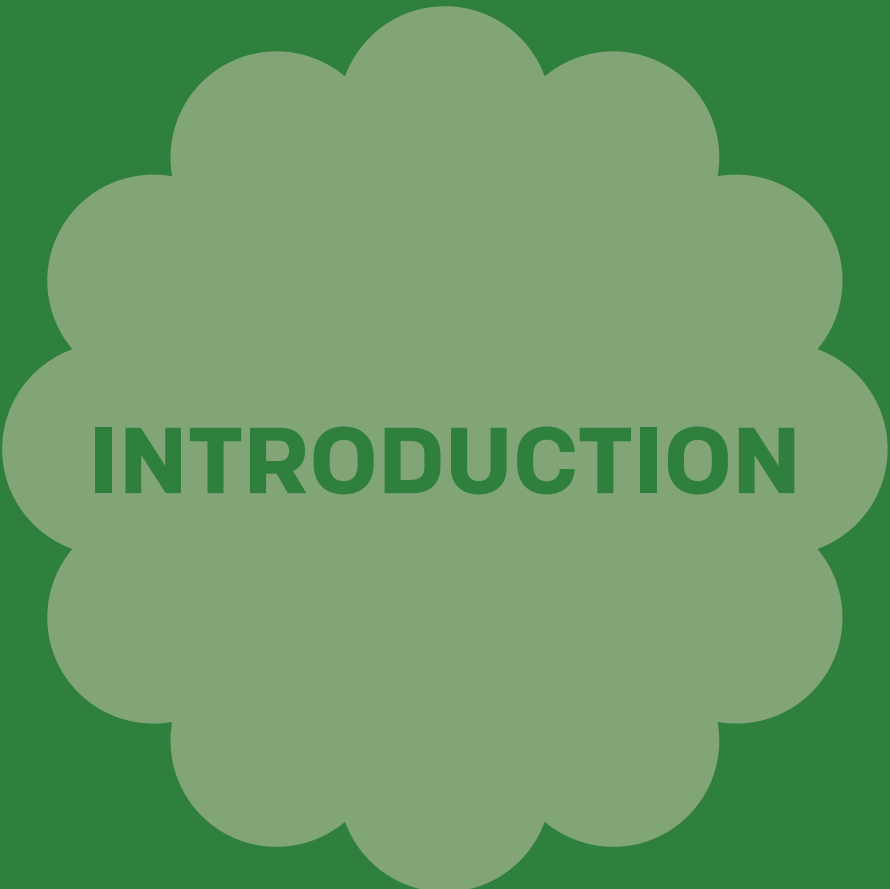


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INTRODUCTION

Mayor’s foreword

At the same time, the abundance and diversity of wildlife in Greater Manchester continues to decline, with nature under increasing pressure and less able to provide us with the benefits that are fundamental to our citizens and businesses. This plan outlines actions to not only mitigate our carbon emissions and become more resilient to the impacts of climate change, but also actions to create nature-rich, sustainably managed green and blue spaces, to create a more circular economy to reduce waste and actions to reduce poor air quality from domestic, industrial and travel emissions which will also enhance the quality of life of all residents.

It is intended that this plan will fully align with Greater Manchester's emerging Local Growth Plan, particularly by stimulating growth on the region's clean growth sectors. Fulfilling the actions in this plan will require a wide spectrum of roles, including well-skilled technical jobs, that are growing now and will provide long-term employment opportunities for residents. The plan promotes more sustainable lifestyles and business models which, if implemented carefully, will save people and companies money from their bills, improve the health and quality of life of our people and stimulate innovation and growth in the green economy. Convincing all decision makers to act now will depend on us realising these wider social and economic benefits, as well as the environmental improvements that are at the core of this plan.

Our environment is essential to all aspects of our daily life: the air we breathe, the food we eat, the water we drink and the green spaces we spend time in.



Building on a strong foundation of action

The last Environment Plan has resulted in significant action as evidenced by Greater Manchester making the Carbon Disclosure Project's (CDP) 'A List' for three consecutive years, despite a two year global Covid pandemic. The CDP score reflects the level of transparency, action and progress an organisation is taking to reduce their greenhouse gas (GHG) emissions.

A full list of our accomplishments is provided at Appendix 01. Some key achievements include:

Investing in infrastructure programmes

Over £123m invested in retrofitting nearly 10,000 homes, over £120m invested in retrofitting 225 public buildings; £26m invested in delivering 18MW of 80MW identified renewable energy capacity; over 750,000 trees planted, 100km of new cycling infrastructure developed; more than 100 zero emission buses in operation plus expansion of Metrolink and facilitated over 2000 publicly available electric vehicle (EV) charging connectors.

Creating enabling facilities

Establishing a Renew Hub and recycling shops across Greater Manchester; supporting a nature-based solution 'living lab' and Energy House 2 at University of Salford and the Hydrogen Fuel Cell Centre at Manchester Metropolitan University; supporting the plans for a (up to 200MW) hydrogen electrolyser at Trafford Energy Park.

A visual summary of our achievements since the previous Environment Plan



Energy

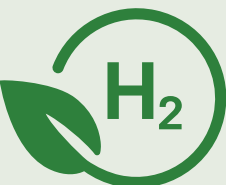
First City Region to
develop smart Local
Area Energy Plans.



£26m invested in delivering 18MW of
80MW identified renewable capacity.

£26m

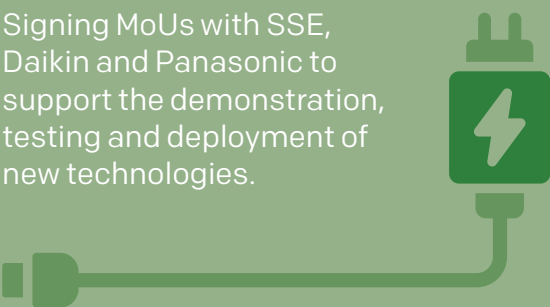
The Hydrogen Electrolyser
(at up to 200MW) at
Trafford Energy Park
will be the UK's largest
Green Hydrogen
production facility.



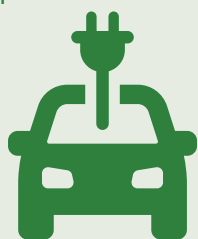
The Energy Innovation Agency
is supporting over 100 innovators
to commercialise and deploy
their technologies across Greater
Manchester to accelerate
decarbonisation.

100

Signing MoUs with SSE,
Daikin and Panasonic to
support the demonstration,
testing and deployment of
new technologies.



The Hydrogen and Fuel
Cell Centre at Manchester
Metropolitan University
is the UK's first Fuel Cell
Centre of Excellence.



Energy House 2 at the University
of Salford is the world's first
environmentally controllable
chamber where full sized terraced
houses can be constructed
and tested.



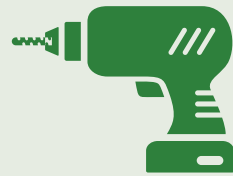
Natural environment	Statutory Local Nature Recovery Strategy has been drafted. 	
Over 570,000 trees have been planted over the last 5 years – and over 900,000 to date. 900,000		
Living Lab established to explore and engage businesses and residents on the benefits of nature-based solutions. 	Greater Manchester Natural Capital Investment Plan launched.	
Over £5.5m of funding into environmental projects via the Greater Manchester Environment Fund, including £3.4m through the Green Spaces Fund to fund 103 community-led projects that increase green space in the areas most in need.		£5.5m
Projects designed to address water quality as part of the Natural Course project. 	An Integrated Water Management Plan was launched in 2022. 	

Transport	First city region in England outside of London to take buses back under local control. 	

Buildings

Your Home Better, an independent service delivered by retrofit experts, providing advice, planning and support, to homeowners.

Launching the Local Energy Advice Demonstrator, providing in person advice on retrofit.



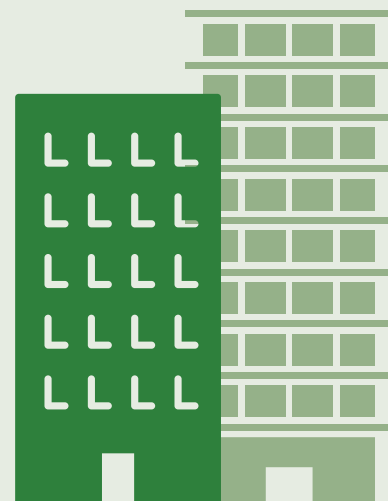
The Truly Affordable Net Zero homes taskforce was launched to deliver 30,000 net zero social homes.

30,000

Over £123m invested in retrofitting nearly 10,000 homes through programmes such as the £112m the Social Housing Decarbonisation Fund, ECO4, and Green Homes Grant.

£123m

Over £120m invested in retrofitting 225 public buildings through the Public Sector Decarbonisation Scheme.



Circular Economy including Waste

Sustainable Consumption and Production Plan launched.



Through the Recycle for Greater Manchester Community Fund 47 projects have been funded including cooking classes, repair cafes and educational workshops.

47

Renew Hub and Shops launched to build Greater Manchester's circular economy by reusing and repurposing items donated by residents.



There has been work to reduce the use of avoidable single-use plastics including the Plastic Free GM campaign, GM Refill campaign, Public Sector Plastic

What have we learnt?

Whilst most of the actions set out in the previous Environment Plan have commenced delivery and Greater Manchester’s carbon emissions continue to decrease, it is not at the scale nor pace required. Carbon emissions did decrease significantly during the Covid pandemic, bounced back and have since reduced to just below pandemic levels (See Figure 1).

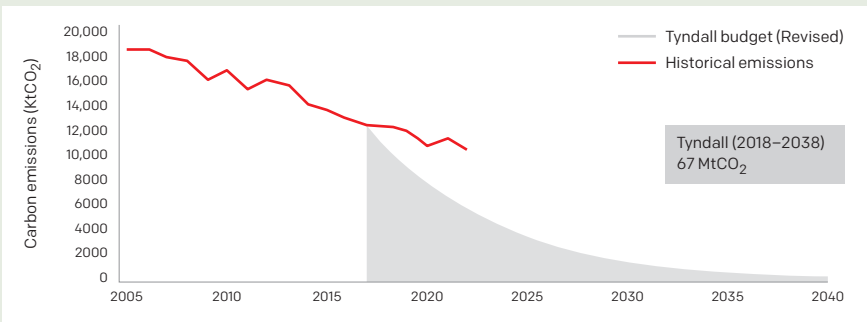


Figure 1
Graph of historical carbon emissions relative to our science based target.¹

In delivering the last Environment Plan, we have learnt that:

- Staying within our previous science based carbon budget which reflects our fair and equitable share of global carbon emissions is now unlikely, however we still need to strive towards limiting the emissions that exceed that budget.
- By going beyond national ambitions, we believe that achieving carbon neutrality by 2038 is still possible, however we will require the support of progressive national policies and funding.
- In addition to national measures, the rate of carbon emission reduction will largely be determined by the choices that Greater Manchester businesses and individuals make, increasing engagement will be essential.
- Our Mission Based Approach to delivery was largely successful in convening expertise, identifying and addressing systemic challenges, however it clearly did not deliver the scale of change needed. We need to expand this approach to allow more and varied voices to be heard.
- Having accurate, replicable local data is essential to both plan future priorities and monitor our progress.
- Establishing and scaling infrastructure change programmes takes time, capacity and significant finance – truly innovative finance mechanisms remain elusive.

Engaging with people

Achieving our Plan will not be possible without the support and engagement of the people of Greater Manchester. We know that people’s attitudes and behaviours are shaped by multiple contexts²:

- Individual:** Factors such as values, attitudes, skills, and calculations about costs and benefits
- Social:** Factors such as social norms, networks, trusted relationships, and institutions
- Material:** Factors such as infrastructures, technologies, regulations, time, and schedules

Each of these factors need to be considered when developing more effective policies and interventions, identifying options and shared solutions to deliver the actions contained in this plan.

To be successful, we need to put people at the heart of our plans and help develop the skills, knowledge and leadership that will enable them to support our pathway to 2038 and benefit from it. This will encompass everything from basic day-to-day carbon literacy of all our citizens, to the specialist skills needed to design, deliver and maintain more sustainable infrastructure and services. It could be the case that, even where interventions are technically straightforward, they still often require social and behavioural complexities to be addressed³. Greater focus will therefore be placed on engaging with the people and businesses of Greater Manchester (see Section 7) on our shared vision for the future, listening to their concerns and aspirations and giving them the support and encouragement they need on the journey towards a nature rich and carbon neutral city region.

² Southerton et al (2011)
³ Sudmant et al (2014)

2.0 The journey to a nature-rich and carbon neutral city-region

Achieving a low carbon energy system

In Greater Manchester, we want to create a ‘Manchester-Energy Model’, a low carbon energy system, that other places will aspire towards, and which will meet our target of being carbon neutral by 2038. Reaching this target remains challenging and will require accelerated and scaled up action across all aspects of society -residents, public and private sector organisations and, importantly, national government.

Such a system will be based around the three pillars of energy efficiency, energy generation and smart energy innovation:

Energy Efficiency	Energy Generation	Smart Innovation
Where our homes and buildings are improved to use as little energy as possible, using the most efficient insulation and cost-effective, low carbon appliances and heating systems.	Where our homes, businesses and transport are all powered through affordable renewable energy, built	

By setting out our systemic approach, util

Achieving a nature-rich

A sustainable transport system

</

3.0 Structure

<

Community wealth building

Community wealth building is an approach to economic development that changes the way that our economy functions, retaining more wealth and opportunity for the benefit of local people. It has been estimated that each resident could see approximately £17,000 in social benefits, £1,400 in carbon reduction benefits, and £750 in financial gains if the sixth national carbon budget is met; this would only be furthered if Greater Manchester were to outstrip these emissions reductions⁸. The Environment Plan recognises the important role community wealth building can play in contributing to green growth, and will look, where possible, to redirect wealth back into the local economy through progressive procurement of goods and services, which support the development of good social enterprises and shorter supply chains. There are also activities which can be directly delivered by communities, including increasing community energy and retrofit and making improvements to local green spaces.

Our mission and values are key to us delivering our core and devolved services for the public:

- Secure, and manage, funding and investment at Greater Manchester level for agreed activity
- Work with the 10 local authorities to drive collective activity that puts Greater Manchester at the forefront of tackling social, economic and environmental issues
- Ensure Greater Manchester is speaking with one voice – developing, leading & implementing our evidence-based strategies, building our networks and partnerships and influencing policy

Our values

As the convening body for the Environment Plan, GMCA will work with our partners, business and wider communities to ensure it is implemented in line with our mission and values. GMCA's mission 'Making Greater Manchester a better place for all' and values are intrinsic to how we intend to deliver this plan through collaboration, empowering and delivering:



Collaborating

Bringing together people and organisations from our city region and beyond, forming strong and trusting partnerships which achieve more than any of us could do alone



Empowering

Championing and supporting people and partners, ensuring everyone is able to contribute to and benefit from Greater Manchester's ambitions



Delivering

Taking positive and innovative actions with purpose

4.0

Vision, Aims & Objectives

30

Aim 1: Our energy infrastructure is smart, flexible, and fit for a low carbon future.

40

Aim 2: Our buildings are sustainable and energy efficient.

48

Aim 3: Our transport system is reliable, integrated, inclusive, affordable and enables sustainable travel.

58

Aim 4: Our natural environment is enhanced providing benefits for people, economy and nature.

68

Aim 5: Our city region transitions to a circular economy and our waste is reduced, reused, recycled or recovered.

78

Aim 6: Our city-region is better adapted and more resilient to the increasing impacts of climate change.

88

Aim 7: Our air quality enhances the health, well-being and quality of life our residents.

98

Aim 8: Our economy will grow sustainably because of the interventions we make, benefiting our residents and businesses

106

AIMS &
OBJECTIVES

4.0 Vision, Aims & Objectives

Our Vision

Greater Manchester will be a nature-rich and carbon neutral city region where all citizens have access to affordable renewable energy, warm climate resilient homes, high quality blue and green spaces, healthy and locally produced food, and a reliable, integrated, inclusive, sustainable and affordable transport system, where avoidable waste is significantly reduced.

Greater Manchester will lead the way in becoming an innovative, circular and resource efficient green economy with thriving sustainable businesses, secure and well-paid green jobs and an active local supply chain. Increased prosperity will also bring benefits for nature with increased urban greening and investment in the natural environment.

Greater Manchester’s urban environments will be cleaner and greener containing more trees and green spaces and providing environments for nature to thrive. Buildings will be energy efficient and powered by renewable energy. Rural environments will be managed for nature recovery and to protect wildlife. Across the city region air and water quality will be cleaner due to reduced emissions and pollution.

This transition will reduce inequalities across the city region and both citizens and businesses will be actively engaged in creating and maintaining a thriving biodiverse and carbon neutral city region.

Aims

To support the achievement of the vision for Greater Manchester we have set out eight key aims for the city-region. The action needed to achieve these aims is outlined further in the chapters of this plan highlighting the key objectives for the next five years for all sectors of society.

- 1

Our **energy infrastructure** is smart, flexible and fit for a low carbon future.
- 2

Our **buildings** are sustainable and energy efficient.
- 3

Our **transport** system is reliable, integrated, inclusive, affordable and enables sustainable **travel**.
- 4

Our **natural environment** is enhanced, providing benefits people, economy and nature.
- 5

Our city region transitions to a **circular economy** and our **waste** is reduced, reused, recycled or recovered.
- 6

Our city-region is better **adapted** and more **resilient** to the increasing impacts of climate change .
- 7

Our **air quality** enhances the health, well-being and quality of life of the city region.
- 8

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

Figure 5
Summary of the Aims and Objectives

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

1

1. Increase renewable energy generation and energy storage installed

2. Increase the resilience, capacity and flexibility of the electricity network and its users

3. Increase the number, generation capacity and level of operational heat networks

4. Increase installed capacity and use of low carbon hydrogen

Our buildings are sustainable and energy efficient

2

5. Increase the number of homes retrofitted

6. Increase the number of public and commercial buildings retrofitted

7. Increase the number of low carbon heating systems installed

8. Ensure all new developments are net zero carbon and sustainable

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

3

9. Establish a long-term strategy and detailed delivery plan for an integrated transport system by 2027

10. Deliver an integrated transport system to enable the GM population to switch to active/public transport

11. Support the transition to electric mobility

12. Deliver policies and programmes that make sustainable transport and travel as attractive as possible

13. Support communities and business to adopt more sustainable travel habits

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

4

14. Expand and enhance our best spaces for nature

15. Better connect the best spaces for nature by creating and restoring habitats

16. Reduce pressures on our water environment

17. Increase the amount of green and blue spaces (parks, countryside, public realm etc) that are better managed for nature

18. Increase the number of green and resilient transport routes, streets & highways

19. Increase the amount of green and resilient new infrastructure, regeneration and development

20. Increase the amount of community-led action and better connection to nature

Summary of the Aims and Objectives (continued)

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

5

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

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

6

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

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

7

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

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

8

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

Figure 6

