

MANCHESTER: A CERTAIN FUTURE

Annual Report 2014



Key facts

-  In 2012 Manchester's population was **511,000**
-  Manchester has **32** electoral wards
-  There are **181** schools in Manchester (**170** local authority)
-  There are **16,900** businesses in Manchester
-  Manchester covers an area of **11,564** hectares
-  In 2012 there were **220,150** households in Manchester
-  Manchester's energy consumption in 2011 was **9,130** GWh
-  **73%** of journeys to the city are by public transport or bike
-  Manchester recycled **36%** of its household waste in 2012/13
-  **58%** of the city's surface area is green infrastructure

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MACF Steering Group Chair's introduction

Over the past two decades the scientific community has gathered a growing body of irrefutable evidence that climate change is occurring on a global scale, brought about by the increased concentration of greenhouse gases in the atmosphere as a result of human behaviour.

The international community has recognised the significance of this evidence by adopting a series of treaties and accords aimed at reducing global carbon emissions. The 1992 Rio Earth Summit saw the agreement of the first international treaty on climate change. Since 1995, the international community has met every year to ensure its commitments are being met. And while national governments continue to work together, progress has been difficult and only partial agreements have been reached. This has led growing numbers of scientists, commentators and the concerned public at large to suggest that international agreements are not developing at the rate and depth needed if global climate change is to be properly addressed.

This was the backdrop to the original MACF document in 2009, ahead of enthusiasm about a new international agreement being struck. However, while this – and other Conferences of the Parties since – have not been able to reach the level of agreement needed, there has been growing consensus about the critical importance of, and potential for, action by cities. To date, 5,293 European cities, home to over 185 million residents, have made voluntary commitments to take action on climate change; the C40 network of global

megacities continues to make exciting leaps towards sustainable urban development; and in the UK the English Core Cities Group recently made its latest proposition to the Government on how they can work together to support local and national climate change goals.

This is not to say that international and national agreements and policies are not important – they have the ability to drive the action that we need to see around the world and to reduce the carbon generated by national energy systems. But while this work edges slowly forward, the cities with the understanding of the issues and the ability for action cannot stand by and wait.

Manchester: A Certain Future is the city's recognition and understanding of climate change. It's a commitment to make a collective effort to respond in the only way Manchester knows – with passion, commitment, and in a way that enables everyone to participate. Working to drive and enable this collective response is the MACF Steering Group, sitting at the heart of a growing city-wide network of action on climate change.

Now, for the first time since it was established in 2010, the MACF Steering Group is publishing an Annual Report.



Gavin Elliot, Chair of MACF Steering Group
Image courtesy of Andy Haslam

This details the work it has been carrying out during the last year and, perhaps more significantly, reports on the progress the city is making against the MACF 2013 Update.

The publication of this report comes at an interesting time for the city, the UK and the global community. This year has seen the publication of the final part of the IPCC's fourth Assessment Report on climate change – the report effectively concluding that climate change is real, is happening, and is irreversible. Manchester, like other cities across the world, must adapt to the changing climate. Through the actions of governments, cities and individuals around the world the effects of climate change could be transformed – if we act now.

The timing of this report is also pertinent as the UK Government has adjusted its energy policy to promote fracking and disincentivise onshore renewable technologies. At the same time it's promising to 'do everything it takes' to address the issue of flooding in

the areas of the country recently affected, something that many climate scientists, including the Met Office chief scientist, are attributing to modifications in weather patterns caused by man-made greenhouse gas emissions.

Against this backdrop Manchester remains committed to action on climate change. This report provides – for the first time – a description of progress on these commitments and what more the city needs to do. Part 1 describes the activities of the MACF Steering Group during 2013, including some significant changes to better enable it to drive and support climate activity across the city. Part 2 is a full review of the city's progress against MACF, objective-by-objective, theme-by-theme. And finally Part 3 looks to 2014 and the actions that the Steering Group and the city as a whole will need to deliver in the coming 12 months to ensure we are on target to achieve our 2020 goals.

Part 1 **MACF Steering Group activity in 2013: a year of change**

The MACF Steering Group was established in 2010 to champion MACF and to help ensure that every pupil, student, resident, employee and organisation could play their part in its delivery. Its first three years have focussed on trying to raise the profile of MACF and climate change issues in the city, and providing the platform from which city-wide activities could flourish and grow. The Steering Group has faced some challenges with these aims during its early years – funding, competition for air space during a global financial crisis and adequately resourcing itself as a voluntary group. But it has also made some progress – organising three annual conferences, bespoke events on topics including public and commercial building retrofit, and starting to build a city-wide awareness of the need for collective action on climate change.

In 2013, Steve Connor stepped down from his role as Chair of the MACF Steering Group, a post that he had held since the Group was first established. He was replaced by Gavin Elliott, Chair of Manchester design studio, BDP. In the nine months since Gavin's appointment, the Steering Group has conducted a thorough review of all aspects of its activities to identify any issues that need to be addressed in order to fully meet its aims.

This review has led to a number of key organisational changes for the Steering Group:

1. The redefinition of the roles and responsibilities of the MACF Steering Group and the wider MACF network of stakeholders.

The 'Chair's Review' sought to create greater clarity regarding the roles and responsibilities of the MACF Steering Group, the wider MACF Network, and Manchester City Council executive and elected members. The diagram opposite shows how these organisations interact.

2. The reorganisation of the MACF Steering Group including the introduction of new targets and monitoring groups.

The MACF Steering Group has been reorganised with new target and monitoring roles introduced to specifically focus on activity around, and progress towards, delivering key outputs of the plan. These new 'monitoring' groups sit alongside the existing 'thematic' groups to ensure that every aspect of the plan receives proper attention, and to ensure that activity with the thematic groups is designed to achieve specific measurable objectives.

3. The appointment of new members to the MACF Steering Group to fulfil these new roles.

New members have been recruited onto the Steering Group to supplement the existing membership, and bring specific expertise to their individual roles.

Chair: Gavin Elliott

Thematic Groups:

- **Buildings:** Vacant
- **Energy:** Damian Burton
- **Transport:** Eleanor Roaf (new member)
- **Sustainable Consumption and Production:** Gudrun Cartwright
- **Green and Blue Infrastructure:** Steve Merridew

Monitoring Groups:

- **41% CO₂:** Ali Abbas (new member)
- **Low Carbon Culture:** Dave Coleman
- **Adaptation:** Dr Jeremy Carter (new member)
- **Low Carbon Economy:** Helen Seagrave

Support Groups:

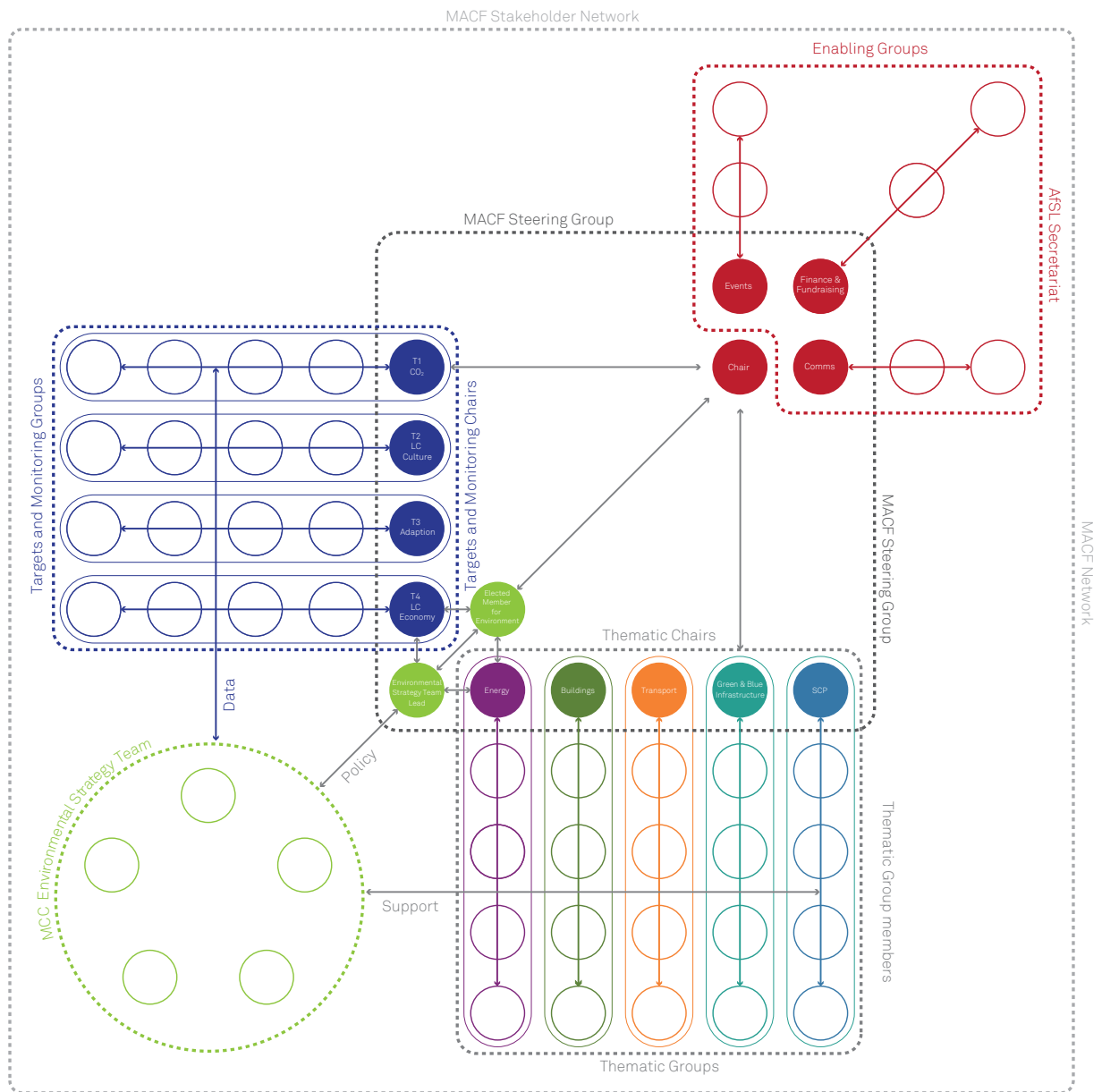
- **Communications:** Holly Bonfield
- **Events:** Vicki Ramsden (new member)
- **Governance:** Nigel Rose

Manchester City Council:

- **Elected Member for the Environment:** Councillor Kate Chappell
- **Environmental Strategy Manager:** Jonathan Sadler

4. The reorganisation of the MACF Events Calendar including the new Annual General Meeting (AGM).

The MACF calendar has been reorganised to include more events throughout the year, rather than a single annual event (the conference). The new events calendar commits MACF to organise four events per year. Two formal events led by MACF, including the (new) Annual General Meeting where members of MACF Steering Group present the activities of the organisation to a public audience. There will also be two informal 'outreach' events where MACF engages with local communities and groups around the city to find out what's happening 'on the ground', how we might support those groups, and how their work might be developed to support our overall objectives.



5. The publication of first MACF Annual Report.

The MACF Steering Group recognises that success will ultimately be measured on the basis of whether the MACF plan was delivered, and whether the overall objective to reduce carbon emissions within the city by 41% by 2020 was achieved. So, while it's easy to celebrate all the good things going on in the city around the low carbon agenda, it is also important to make an objective assessment regarding the progress we are actually making against the plan.

To that end, and for the first time, we are publishing an MACF Annual Report to collate as much information as possible regarding the progress we believe is being made against individual sections of the plan and, where possible, provide data to create a more robust evidence base against which to monitor future progress.

6. Exploration of new funding models to enable MACF to employ a number of full-time staff.

MACF is currently a voluntary organisation and therefore its ability to make a significant contribution to what is a hugely complex problem (i.e. the development of a re-imagined 'low carbon' Manchester) is limited by its human and financial resources. In recognition of this fact we are exploring new organisational and funding models, which would enable the MACF Steering Group to recruit and employ staff, increase our capacity to do more, and communicate better. This is still work in progress...

Part 2 The city's action on climate change in 2013: progress against MACF plan

The original MACF Plan was written in 2009 and updated in 2013. From 2013 MACF contains three headline objectives and a fourth (on low carbon economy), which is currently being considered in further detail:

- **One:** Reduce the city's CO₂ emissions by 41% by 2020 (from 2005 levels)
- **Two:** Culture change – embed 'low carbon thinking' in the lifestyles and operations of the city
- **Three:** Prepare for and actively adapt to a rapidly changing climate
- **Four:** Make a rapid transition to a low carbon economy

It also provided an extensive set of actions, which would need to be implemented in order to achieve the headline objectives. These actions are organised within five thematic groupings:

-  **Buildings**
-  **Energy**
-  **Transport**
-  **Sustainable Consumption and Production**
-  **Green and Blue Infrastructure**

This section of the report provides a review of progress against the objectives, and the actions for 2013-15, which were set out in the MACF 2013 Update. This helps to build up a picture of our progress, highlighting areas where particular progress is being made, as well as areas where more action is needed.



Meeting our objectives

We have a good and growing understanding of the effects that climate change will have on Manchester. These effects will be complex and far-reaching, create opportunities and challenges, and require every aspect of the city to adapt itself over time to become a vibrant green centre for low carbon living and working.

This means that MACF needs to have relevance to everyone in the city, not just those who are interested in, or working specifically on, the issue of climate change. And, as well as relevance, the city's response needs to be comprehensive, forming part of a regional, national and international network of action.

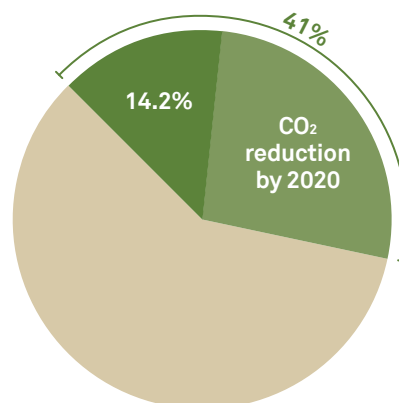
This is why MACF sets out four headline objectives. They reflect that action on climate change is not just for the sake of action but, more fundamentally, it is about ensuring Manchester's communities and businesses can continue to thrive in the years to 2020 and beyond.

1 Reducing the city's CO₂ emissions by 41% by 2020 (from 2005 levels)

Manchester is responsible for 18% of Greater Manchester's CO₂ emissions and 0.6% of UK emissions.

Manchester's annual CO₂ emissions have fallen from 3.25 million tonnes in 2005 to an estimated 2.79 million tonnes in 2013 – a reduction of 14.2%.¹

Estimated reduction in Manchester's direct carbon emissions from 2005 to 2013



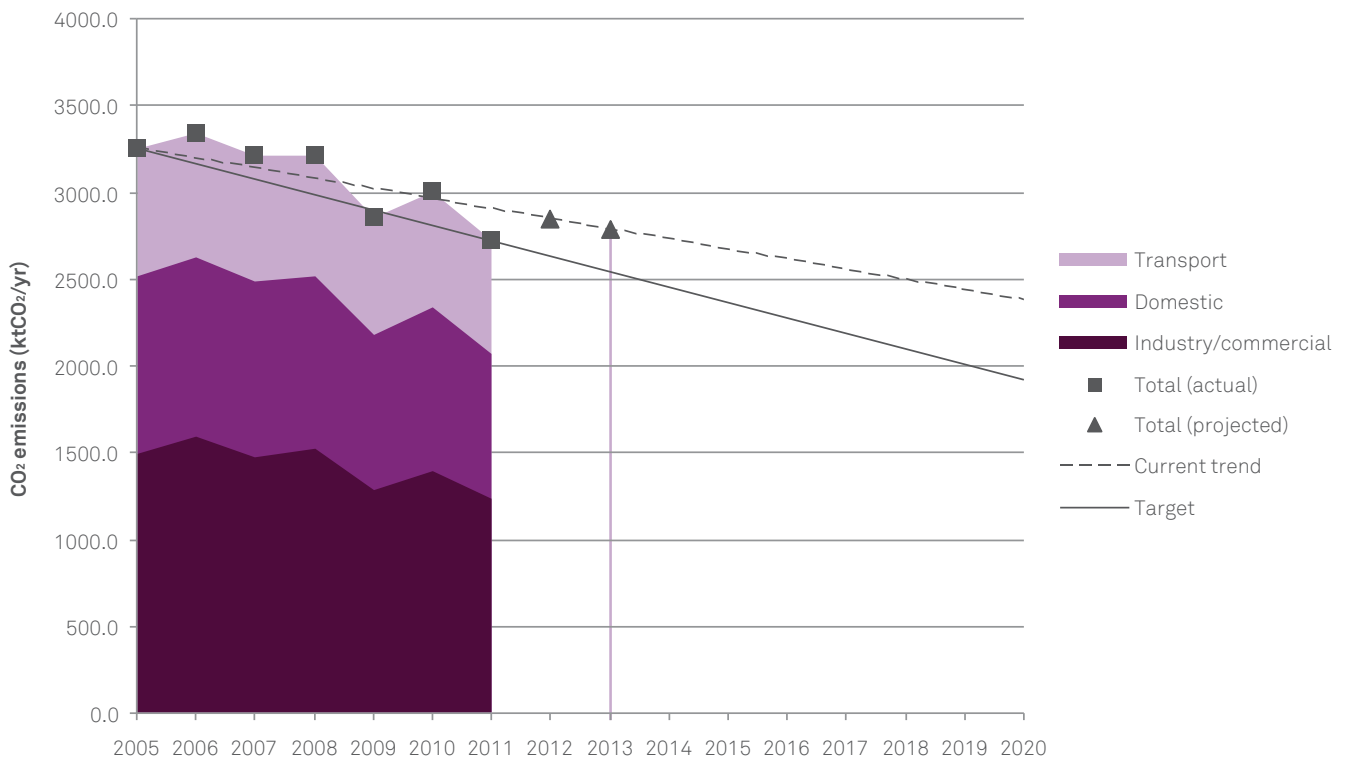
¹ Local authority level CO₂ data is only currently available up until 2011, national data has been used to extrapolate Manchester's emissions for 2012 and 2013.

Although we had been on track in 2011 to meet our target of a 41% reduction by 2020, a switch from gas to coal increased the emissions from the electricity we consumed in 2012, highlighting the impact of national energy policy and the need for cities to influence it. This also shows the importance of energy efficiency and decarbonisation and

the need to move away from fossil fuels to low carbon sources of energy.

If power sector emissions continue to fall at the same general rate as they have since 2005, and we continue to consume the same amount of energy without making further reductions, we will only achieve a 27% reduction by 2020.

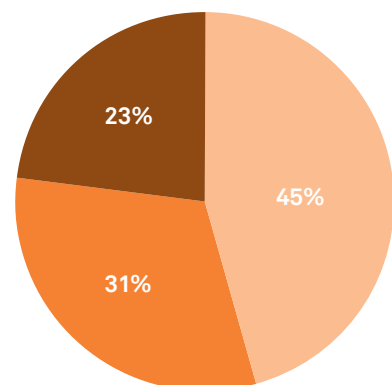
Manchester's direct total CO₂ emissions by sector



Our direct emissions arise from industrial and commercial, domestic and transport activities. Progress being made to reduce these emissions can be seen in the Buildings, Energy and Transport sections of this report.

Manchester's direct emissions by section in 2013 (estimated)

- Business** (1,264 kt CO₂)
- Domestic** (857 kt CO₂)
- Transport** (648 kt CO₂)



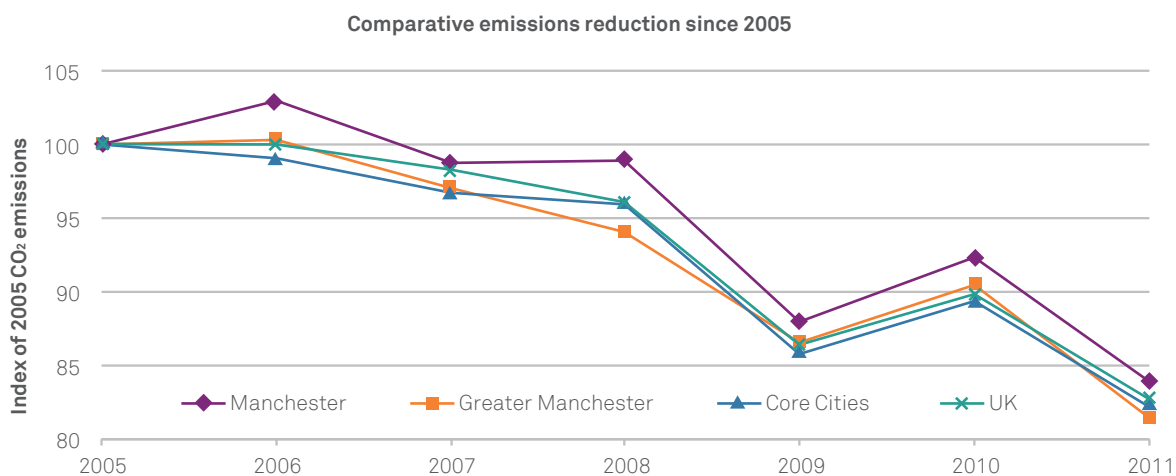
We've also compared our progress against Greater Manchester, the Core Cities and the UK as a whole. Manchester's emissions did increase in 2006 and 2008, but, since MACF was launched in 2009, our emission trends have returned to closely follow those of our comparators.

Comparing progress

In 2011, the last year for which we have data broken down to local authority level, our emissions fell by 9.1% compared to a national reduction of 7.9%. We don't expect to see a linear reduction to 2020 – progressions will be non-linear as activities are gradually scaled-up and new projects continue to be identified and delivered over time.

Our newly-formed CO₂ Monitoring Group will continue to report on progress towards our 2020 target, and will work towards a better understanding of why our emissions are changing, what effect MACF is having, and where best to target our actions in future.

Absolute CO₂ emissions for Manchester, Greater Manchester, Core Cities and UK to 2011, indexed to 2005



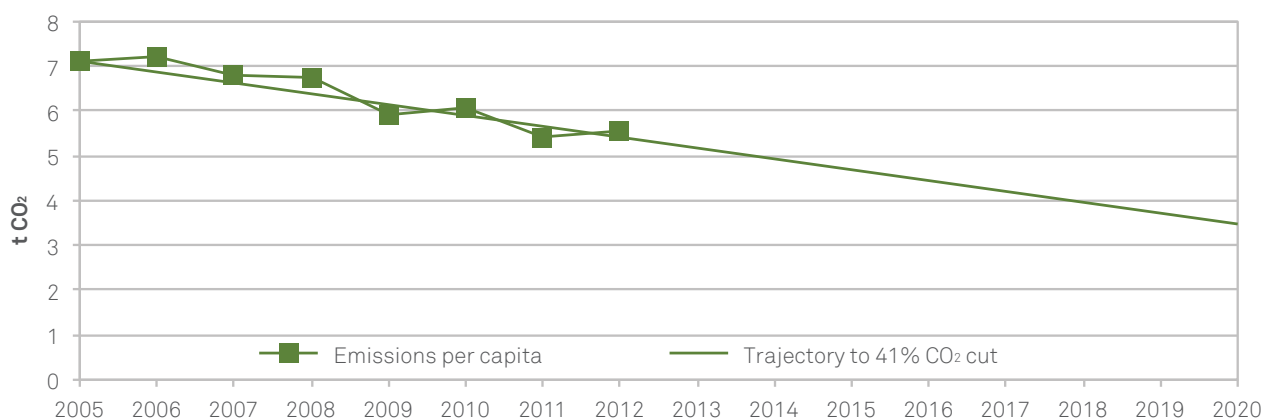
“The approach of having a publicly available standard for a simple piece of climate change learning, being rolled out simultaneously with workplace, community and educational audiences is award-winning, remains unique worldwide, and is another Manchester first.”

2 Culture change - embedding ‘low carbon thinking’ in the lifestyles and operations of the city

Part of the original plan, this headline aim was included as it was clear that it would be very hard to deliver our 2020 emissions reduction targets (much less the further reductions we know will be necessary between 2020 and 2050) without changing the way we collectively think about carbon, energy and emissions.

It is difficult to measure something as intangible as a ‘change in culture’. However, we have started to analyse progress by looking at Manchester’s carbon emissions per capita. Over the period from 2005 to 2012, Manchester’s population grew by 10%, yet electricity consumption remained fairly constant and gas consumption fell by a quarter. This decoupling of energy consumption from population growth is welcome, and is reflected in the steady downward trend in emissions per capita.

Manchester’s carbon emissions per capita



Formed at the end of 2013, the Low Carbon Culture Monitoring Group is undertaking two broad initiatives.

- Engage with the largest organisations in the city – private, public and third sector – to raise awareness of a low carbon culture and its implications; and develop frameworks to both stimulate and measure the action that is taking place within the city's largest organisations.
- Work with the city's universities to discover the best methods to assess and, if possible, measure cultural change, in order to develop a better framework to report against in the next annual report.

One of the proxy measurements of a low carbon culture is the number of our citizens who are Carbon Literate – that is those who have undergone carbon literacy training and been certified. The Carbon Literacy Project was launched in 2012 as a direct response to the culture change aim of MACF. It already has over one thousand learners certified and a number of large organisations now committed to large-scale roll-out. There is still a way to go but the project is in its early stages and is beginning to rapidly expand and reach more people through a multiplier effect of certified learners influencing their wider communities, organisations and networks.

84%

of Manchester businesses are actively trying to improve their energy efficiency

(Source: Manchester Business Survey 2013)

There are now over 
1000
Carbon Literate citizens in Manchester

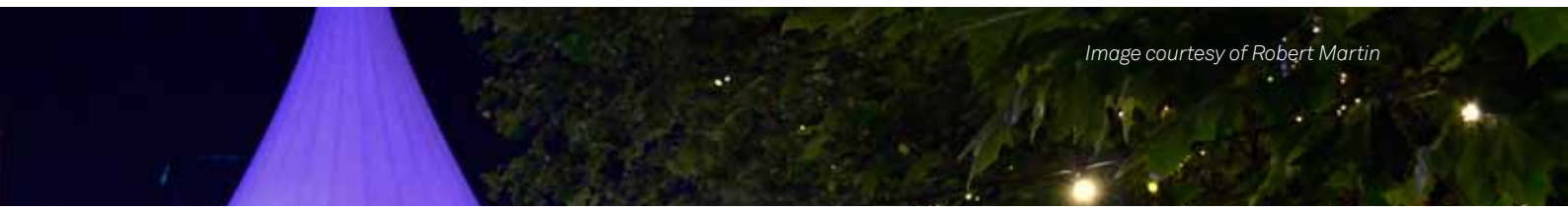


Image courtesy of Robert Martin

MANCHESTER INTERNATIONAL FESTIVAL (MIF)

Manchester International Festival (MIF) was the first festival to be independently certified as meeting the sustainable events standard, BS8901, as well as being a recipient of A Greener Festival award in 2009. Its core sustainable principles include benefitting the local economy, engaging local communities and minimising its environmental impact. It sets itself green targets and has achieved some commendable

outputs including only 1% of waste being sent to landfill from Festival Square due to stringent recycling and compostable tableware, three electric and hybrid cars used to transport artists and staff around the city, and the Biospheric Project attracted 2,375 visitors for talks, tours and workshops about urban farming.





CARBON LITERACY FOR REGISTERED PROVIDERS (CL4RPS)

Rather than working piecemeal with individual registered housing providers, the CL4RPs Project is a collaborative initiative with a core group of 20 of the largest Registered Providers across Manchester and Greater Manchester. Now independently funded and chaired, this group is developing a suite of Carbon Literacy training materials to address staff, tenant

and stakeholder audiences. With tens of thousands making up the staff audience, hundreds of thousands of tenants and the ability to cascade into suppliers, subcontractors and Green Deal delivery partners, this initiative is developing into one of the largest low carbon culture change projects the city has ever seen.

Eco-Schools and Green Flags in Manchester

There are other good examples of progress against this objective in all sectors including businesses, communities and schools, and

we need to scale these up. Currently 88% of schools are Eco-Schools in Manchester, with 15 Green Flags between them.

2009/10



136 Eco Schools



5 Green Flags

2013/14



147 Eco Schools



15 Green Flags



Pupils at St Augustine's CE Primary School, Monsall

“Our city, like others across the world, must develop adaptation responses to build resilience to climate change.”

3 Prepare for, and actively adapt to, a rapidly changing climate

Over recent years it has become increasingly clear that the climate is changing and that human activity is the key driver of this process. With global greenhouse gas emissions continuing to rise at unprecedented rates, projections point towards major shifts in the climate over the coming decades. Recent reports from the Intergovernmental Panel on Climate Change (IPCC), which reflect the global scientific consensus, reinforce these aspects of our challenging climate future.

Manchester’s residents, businesses, infrastructures and natural environment will be impacted – the prognosis for the coming decades highlights rising temperatures across the year, with drier summers and wetter winters. The science also suggests that extreme events, such as intense downpours and heatwaves, will become more frequent.

Our city, like others across the world, must develop adaptation responses to build resilience to climate change. Some cities are already taking steps towards building climate adaptation and resilience into their activities and forward plans, recognising that doing so can offer additional benefits such as improved health and wellbeing, economic competitiveness and enhanced

biodiversity. These adaptation responses include capacity building activities such as developing plans and strategies, undertaking research, expanding urban green cover, laying permeable paving and increasing local food production.

The 2013 MACF Update noted that the focus on adaptation within MACF will increase and, as such, the plan will be monitored against the adaptation objective of the Greater Manchester Climate Change Strategy. This states that by 2020 ‘we will be prepared for and actively adapting to a rapidly changing climate’. This objective is supported by two indicators:

- **The number and quality of resilience plans and adaptation strategies:**
These are an essential element of a planned adaptation response. They can demonstrate recognition that climate change is set to impact on them and that they have taken steps to understand how they can mobilise a response.
- **The extent, quality and productivity of green spaces and tree cover:**
This links to a particular adaptation response – green infrastructure – which is a central theme of MACF.

² The EcoCities project website includes detailed information on climate change impacts and adaptation in Manchester – www.adaptingmanchester.co.uk



STEVENSON SQUARE

In 2013 Red Rose Forest, in partnership with CityCo and business partners, funded innovative Green Infrastructure improvements in the Northern Quarter's Stevenson Square. Twelve new trees were planted using tree pits that soak away excess rainwater along with a new green roof and community artworks, which have helped to revitalise the area. The new trees and

green roof will support adaptation goals by providing cooling, shading, and absorbing water during heavy rainfall events. They also provide a complementary backdrop to the changing face of Stevenson Square, strengthen the sense of business community and are a catalyst for other projects in the area.



4 Making a rapid transition to a low carbon economy

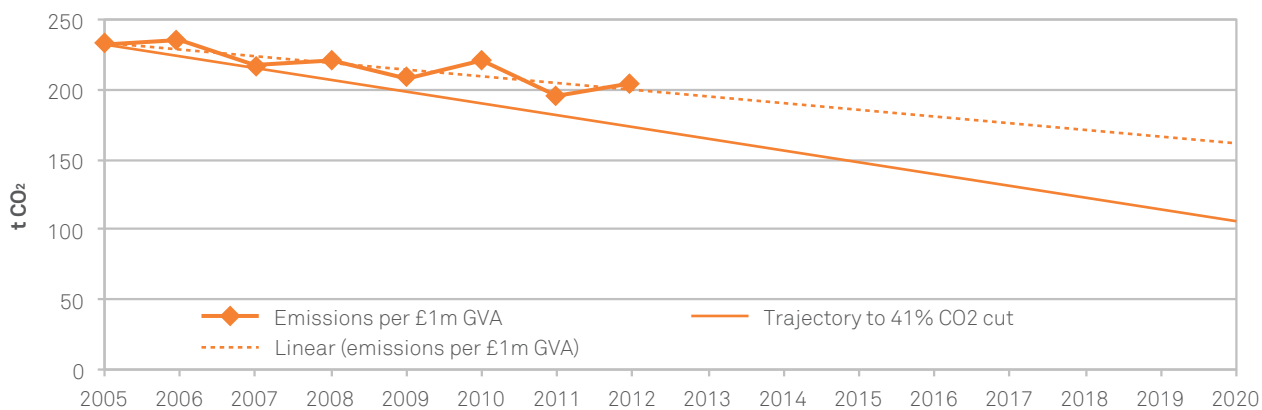
Manchester – like other cities – is committed to continuing to grow its economy over the coming years, making sure that there are sustainable businesses providing jobs for residents from within the city and beyond. The key challenge for Manchester is to make sure that this growth in the economy and population can happen at the same time as achieving our climate change targets. 'Decoupling' economic growth from CO₂ emissions is at the heart of the global – and local – to making the transition to a low carbon economy.

Based on current projections of the size of the economy 2020, this means we'll have to reduce direct emissions per unit Gross Value Added (GVA) by an estimated 54% in order to meet our target 2020 CO₂ target.

Our consumption of goods and services produced outside Manchester may change these figures and we will report on this in future. Over the period 2005 to 2012, a reduction of 12% was achieved, progress that shows businesses are becoming more carbon and resource efficient, but which is not yet on track to enable the city to achieve its targets for both CO₂ and its economic growth.

“The key challenge for Manchester is ensuring that the projected growth in the economy and population can happen at the same time as achieving our climate change targets.”

Manchester’s carbon emissions per £1m GVA



Manchester is not alone in facing this challenge. However, in 2008 we were the first city to produce a city-level ‘Mini Stern’, looking at the local economic impacts of climate change. The economic benefit of £21 billion over the decade was identified, providing the impetus for action and a range of new initiatives to realise the opportunities identified. Supporting businesses through initiatives such as the Greater Manchester Growing the Green Economy Programme will be key to our success over the years to 2020 and beyond. This support will enable them to improve their environmental performance, as well as helping them to diversify and new businesses to form in Greater Manchester’s growing low carbon and environmental goods and services sector.

In the 2013 Update, the MACF Steering Group recognised that aligning MACF with the Greater Manchester Climate Change Strategy introduced the need to consider what ‘making a rapid transition to a low carbon economy’ means in a Manchester and MACF context. We are committed to working with partners to explore this issue in further detail, and to develop a clear set of recommendations that can inform MACF for the period 2015-20.

Over the next twelve months the Steering Group and partners will also be looking at the questions: ‘What does a low carbon city economy look like?’, ‘What do we need to do to realise this vision?’ and ‘How do we measure progress?’

The questions themselves are not unique to Manchester. However, the way that the city and its businesses respond will be what helps set Manchester apart from its global competitors.

Actions by theme

In order to achieve the objectives set out in MACF, a wide-ranging set of actions have been developed through stakeholder-led writing sessions. The first were organised for the original document in 2009, and the second for the Update in 2013, which agreed a revised set of actions for the period 2013-15. This section provides a theme-by-theme review of progress against these 2013-15 actions.

Buildings

Buildings emissions are generated directly through burning gas, oil and coal in heating systems; and indirectly through the use of electricity for lighting, heating, cooling and power.

Building owners, landlords and users can reduce emissions from their buildings by taking measures to improve the thermal performance and air tightness; using low energy lighting, low energy appliances and switching them off when not in use; generating their own low carbon or renewable energy; and buying their energy from 'green' sources.

The MACF Update 2013 set out the actions that we believe are necessary to significantly reduce CO₂ emissions from buildings in Manchester.

Domestic buildings

Headline aim (domestic buildings):

Through physical and cultural measures, to save more than 30,000 tonnes of CO₂ emissions from domestic properties by 2015, creating the capacity to double that target for the period 2016-17.

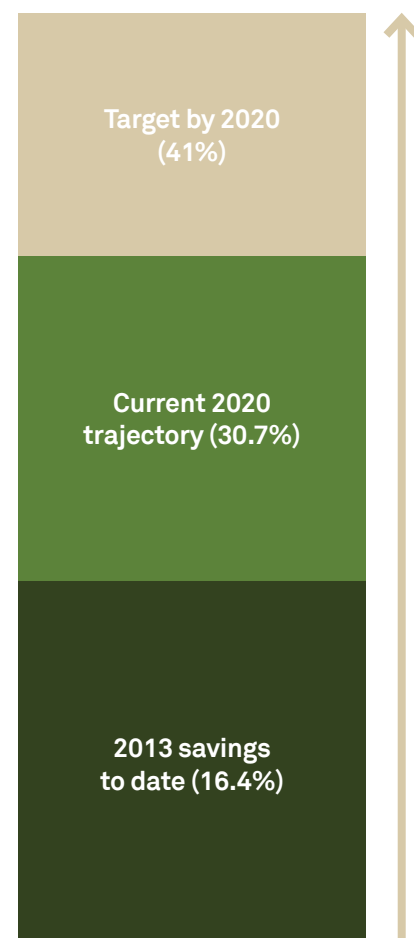


Domestic emissions

In 2013, domestic buildings were responsible for 857ktCO₂, 31% of Manchester's carbon emissions.

To date carbon emissions from domestic buildings have reduced by 168ktCO₂ (equivalent to 16.4%).

A proportional 41% reduction by 2020 would require saving a further 252ktCO₂ – equivalent to each household saving around 1.1tCO₂.





Domestic retrofit schemes

The domestic sector has seen lots of activity during 2013 with the start of the Energy Company Obligation (ECO) 'Get Me Toasty' insulation programme, led by the Greater Manchester Energy Advice Service (GMEAS) with three private sector ECO delivery partners. Third sector and community-led projects were also underway and there is momentum building linking domestic housing retrofit to community energy schemes.

The Chancellor's Autumn Statement proposed changes in the way that the ECO obligation would be delivered by utility companies, which may result in a reduction in the funding available. The Budget also announced a review of fuel poverty and we await the Government's forthcoming Fuel Poverty Strategy.

The current GM ECO programme finished at the end of March 2014. It was targeted at areas with houses with poor energy efficiency but, despite the scheme being widely publicised, the strict ECO eligibility criteria limited the number of eligible households. As a result some of the city's 'hardest to treat' and 'hardest to reach' homes still remain to be treated. A new Green Deal and ECO delivery framework for the city will be launched in 2014 and delivered over three years to around 10,000 households in the privately owned, private and social rented sectors.

Indicator	2013
Number of Green Deal assessments	1,458
Number of ECO measures installed	5,272



Energy performance certificates

The (draft) GM Housing Retrofit Strategy states that, in order to meet the emissions targets outlined in the GM Climate Change Strategy (48% CO₂ reduction by 2020 on 1990 levels), 90% of households need to have an average EPC rating of B and the remaining 10% of households need to have a EPC rating of C.

The average EPC for Manchester is D (2009 data). We will undertake analysis to determine how this relates to the MACF CO₂ target.



90%

of households need to have an average EPC rating of B



10%

of households need to have an average EPC rating of C

“The extent of work to be done in this sector indicates that there will not be one ‘solution’ to domestic energy efficiency. A range of programmes and interventions will continue to be required and need scaling-up considerably.”

Image courtesy of Charlie Baker (charlie@beeker.co.uk)



CARBON CO-OP

Using eco-home bus tours and community-based workshops, Carbon Co-op has successfully recruited a series of Whole House Retrofit pioneers.

One semi-retired couple's energy assessment identified air quality and heating issues, with energy costs exceeding £1,250 per year. The recommended energy efficiency measures took them from an EPC rating of F to A, around the 2050 target of 17kgCO₂/m²/year, and slashed their estimated energy bills to £500 per year.

Total works costs were £48,000 – of this £29,000 came from a zero interest householder loan, £10,000 from ECO and £9,000 from the householders themselves. The retrofit measures are estimated to add around £1 per week to current bills over their lifetime, an amount the couple are happy to pay in return for the comfort and carbon savings.

The project demonstrates the opportunity to drive uptake of housing retrofit in Manchester, particularly when community organisations take the lead, working at a grassroots level, encouraging participation and peer-to-peer support from householders.



Non-domestic buildings

Headline aim (commercial, public and community buildings):

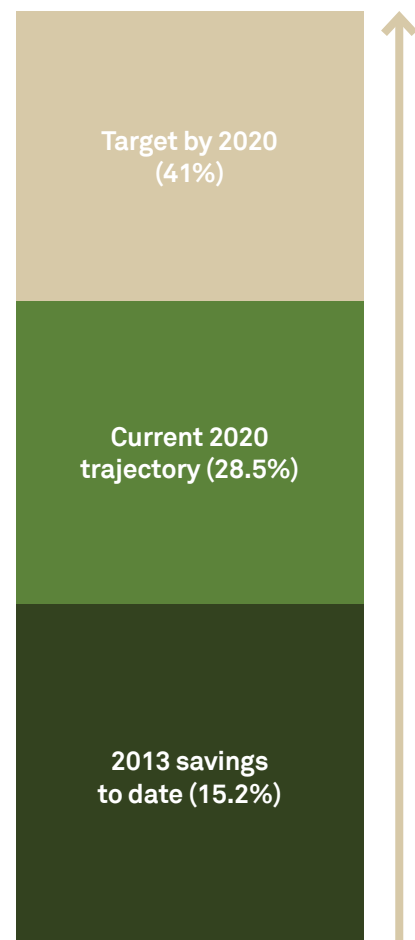
Through physical and cultural measures, and collaboration between building owners, occupants and energy services companies, to reduce emissions from commercial, public and community buildings by 5% per year, from 2012 levels.

Non-domestic (business) emissions

In 2013, non-domestic buildings (industrial and commercial/business emissions) were responsible for 1,265ktCO₂, 45% of Manchester's carbon emissions.

To date carbon emissions from non-domestic buildings have reduced by 226ktCO₂, (equivalent to 15.2%).

A proportional 41% reduction by 2020 would require saving a further 385ktCO₂.





Public buildings

In public buildings, such as the Universities, Hospitals and City Council estates, plans are well underway to achieve individual organisational carbon reduction targets whilst linking these with wider estate plans and priorities. The award-winning refurbishment of the Grade II listed Town Hall Extension and Central Library have achieved BREEAM excellent ratings, with contractors creating 78 local apprenticeships and at least 20% of energy generated from low carbon technologies.

“Manchester’s digital sector is making progress in developing energy monitoring and management technologies and systems.”



Central Manchester NHS Foundation Trust

Installed a range of energy efficiency measures, including lighting and insulation.



North Manchester General Hospital

Installed new boilers and made operational decisions regarding heating timings.



University Hospital South Manchester

Achieved the Carbon Trust standard.



The Christie

Won a Green Apple award for the third year running and has installed a range of energy conservation measures to generate guaranteed savings.



Commercial and community sector

There are isolated examples of progress in the commercial and community sector. However, exemplars are often new builds such as the BREEAM Outstanding One Angel Square, rather than the retrofitting of existing buildings.

Progress is often slow and complex due to tenant/landlord/developer relationships – we need to learn from the good examples and scale them up significantly to reach our 2020 targets.



Headline progress

An outline of the progress made on the priority buildings actions, as set out in the MACF Update 2013:

Domestic buildings	
<i>5,000 homes (1,350 under the GM Delivery Partnership) will have been retrofitted through the Green Deal and ECO by 2015, and plans for retrofitting further homes by 2020 will be in place, embedded with our plans for neighbourhood regeneration.</i>	<p>ECO Phase 1 was delivered in Manchester from October 2011 to March 2014. As of December 2013, there were 5,272 installed measures in homes.</p> <p>A three-year GM ECO and Green Deal Framework is now in place. This programme aims to support an estimated 10,000 households in the city across all tenures. A prospective funding bid has been submitted to support further neighbourhood regeneration.</p>
<i>All new build housing developments will be guided by energy policies in the Manchester Core Strategy, ensuring that developers are on-track to build zero-carbon housing from 2016.</i>	<p>Manchester's Core Strategy sets out the planning policies for the city and includes the specific policies being implemented to enable lower carbon domestic new developments.</p>
<i>All households will have received energy efficiency advice, with targeted programmes aimed at alleviating fuel poverty in the poorest neighbourhoods.</i>	<p>Greater Manchester Energy Advice Service (GMEAS) offer bespoke energy efficiency advice to residents and provide information regarding current schemes and subsidies to assist in alleviating fuel poverty. Welfare Provision Services have administered the Fuel Poverty Crisis Fund to Manchester residents in short-term crisis and this has been linked to the ECO Programme and MCC's Emergency Heating Grant.</p>
<i>Aligned with Carbon Literacy, 500 local people will have been trained in order to contribute to and benefit from a growing retrofit industry in the city. Carbon Literacy will also be delivered to residents through our various retrofitting schemes.</i>	<p>The Carbon Literacy Project has delivered pilot schemes with Eastlands Housing and Great Places, predominantly to train staff who will be rolling out energy efficiency advice and action to tenants. They have also initiated the Carbon Literacy For Registered Providers (CL4RP) project, in which 20 social housing providers collaboratively design Carbon Literacy learning for their staff, tenants, suppliers and stakeholders. The Carbon Literacy Project is also starting to engage with key Green Deal providers.</p>
<i>While our social housing providers continue to provide leadership on greening our housing stock, an increasing number of owner-occupiers and private landlords will be taking steps to reduce energy consumption and climate proof their homes.</i>	<p>Progress has been made with owner occupiers through the Carbon Co-op retrofit programme. The Green Deal and ECO framework procurement was completed and commenced in April 2014.</p> <p>However, the number of properties retrofitted needs significantly scaling up if we are to reach our 2020 targets.</p>
<i>We will have a system for measuring and recording the energy performance of all housing in the city, ensuring that we can prioritise investment to areas in greatest need, particularly for those living in fuel poverty.</i>	<p>Manchester currently uses the UNO stock database in order to measure and record the energy performance of homes across the city. GMEAS is currently procuring a housing stock database to enable effective targeting of households for housing retrofit through their schemes. The development of a measurement of fuel poverty is being carried out by the University of Manchester and will link to an overall Poverty Indicator for Manchester.</p>
<i>We will have a growing network of low carbon show homes, demonstrating to residents and landlords the practical steps they can take to improve their own properties.</i>	<p>An 'Open Homes' weekend, co-ordinated by Action for Sustainable Living (AfSL), was held in May 2014 to demonstrate home improvements to public and private landlords. Carbon Co-op's retrofitting project is currently in delivery.</p>



Image courtesy of Ade Hunter - MMU photography

MANCHESTER METROPOLITAN UNIVERSITY

Manchester Metropolitan University (MMU) was named the greenest university in the UK in 2013, having climbed the People and Planet Green League of universities from 91st place in 2007.

In 2012, MMU opened its new energy efficient Business School building and in 2014 will open its new Birley Fields Campus, which incorporates

measures such as a combined heat and power plant, a site-wide heat network, ground source cooling and a combined rainwater and grey-water recycling system. Birley Fields has a triple zero aim for waste, water and carbon, and is a major part of the regeneration of Hulme. All of this will help the university to continue to achieve its environmental sustainability goals.

Commercial, public and community buildings

We will have a full understanding of the total carbon emissions from commercial, public and community buildings in the city and plans in place for stronger partnerships to secure investment, share and publicise data and good practice so that aggregate emissions can be reduced by 41% by 2020.

Development of GM's Green Deal will have stimulated access to a range of financial mechanisms to fund low carbon building retrofit for commercial property owners, and initiated training programmes for professionals involved in the retrofitting of buildings.

Annual top-down carbon emissions data is available from DECC – however, this is published on a two-year time lag. Bottom-up data is available from Display Energy Certificates (DECs) and Energy Performance Certificates (EPCs) – however, this is not comprehensive. Data sets do not isolate community buildings, and more needs to be done to utilise this data to drive retrofit work.

The Chamber of Commerce has been collating information on the supply/demand of the skills required by industry for the forecasted uptake of Green Deal training programme. There have been Supply Chain events across Greater Manchester, which have been well-attended by SMEs, education establishments and public sector bodies.

The Green Build EXPO was held in Manchester again in 2013 and 2014, showcasing the latest knowledge on sustainable construction, renewable technologies and training opportunities to the industry.

<p><i>New buildings will comply with the energy policies in the city's Core Strategy, ensuring that developers are on track for new commercial, public and community developments to be zero-carbon from 2019.</i></p>	<p>Manchester's Core Strategy sets out the planning policies for the city and includes the specific policies being implemented to enable lower carbon non-domestic new developments. Progress will continue to be monitored as the Government works towards achieving its stated aim of zero carbon new commercial property by 2019.</p>
<p><i>The Universities, NHS Hospitals and the Council all have plans to reduce emissions from their estates – mostly in line with the MACF objective – by 2020. All will be making significant progress against these targets by 2015.</i></p>	<p>University of Manchester – £1bn Estate Masterplan 2013-2020, with a target to save 40% on 2007/8 levels by 2020. All projects must demonstrate a percentage carbon saving and must support climate change adaptation.</p> <p>Manchester Metropolitan University – By 2012/13 (the most recent reporting year) MMU had achieved a 17% reduction in scope 1 and 2 emissions, with targets to reduce by 35% by 2015/16 and 50% by 2020, from a 2005/06 baseline.</p> <p>Central Manchester Foundation Trust – Recently updated their Sustainable Development Management Plan, Energy Efficiency Capital Investment Plan and installed a range of energy efficiency measures that will save 3% on overall gas consumption. 70 teams are involved in a pilot of Green Impact and a Green Heart staff awareness raising campaign has been launched.</p> <p>Christie – Has corporate objectives around sustainability with detailed sustainable development plans, and has already exceeded their 10% energy saving target. It is utilising an innovative approach for the NHS, installing energy conservation measures with a private-sector partner that generate year-on-year guaranteed savings. It recently won a Green Apple award for the third year running.</p> <p>North Manchester General (part of Pennine Acute Trust) – Has an annual Sustainable Development and Carbon Reduction Plan, in which it is working towards the NHS reduction target of 15% by 2015. This year boiler controls have been installed, as well as a trust-wide decision to switch off non-patient heating over the summer period.</p> <p>UHSM (Wythenshawe Hospital) – Adopted a Carbon Management Implementation Plan in 2008, with targets for a 15% reduction by 2010, and a further 5% by 2012. It has robust monitoring in place and has achieved the Carbon Trust Standard, one of the first UK NHS trusts to do so.</p> <p>Manchester City Council – By 2012/13 MCC had achieved a 10% reduction in emissions. In February 2014 it published its Climate Change Action Plan 2014/15 to 2016/17, which sets out major programmes that will keep it on-track to achieving a 41% reduction by 2020, from 2009/10 baseline. Emissions from 2013/14 will be reported in July 2014.</p>
<p><i>Despite reduced levels of capital investment in schools in the period to 2015, continuing increase in IT activity and rising primary school numbers, the emissions from schools will be 10% lower than in 2012.</i></p>	<p>Schools will be supported to reduce their emissions as part of the Greater Manchester Building Retrofit programme. 88% of local authority schools are supported through the Eco Schools programme to reduce their carbon footprint.</p>
<p><i>We will use iconic public and commercial retrofit and new build projects in the city centre as a centre of excellence for low carbon, climate-adapted buildings to inspire and inform projects across Manchester and make preparations to secure hosting a Low Carbon Buildings World Exhibition in 2017.</i></p>	<p>Significant new build, retrofit and refurbishment schemes recently completed include One Angel Square, the Town Hall Complex Transformation and MMU Business School. Further work is required as to whether the ambition of an exhibition is still appropriate and achievable.</p>
<p><i>We will have developed a range of innovative applications using digital technologies to enable buildings to be better managed and more energy efficient.</i></p>	<p>Work is ongoing in the Town Hall Extension on the EU-funded 'Project Odysseus', which will develop a new energy management decision support aid. A prospective funding bid has been made under the EU Horizon 2020 programme for innovative energy management improvements in the Corridor area of the city.</p>

Energy

National energy policy has a significant impact on Manchester's CO₂ emissions due to the fossil fuels, low-carbon fuels or renewables selected to generate the nation's electricity. Depending on the fuel used, it can make the city's targets easier or more challenging.

Decentralised, renewable and smart energy generation technologies and infrastructure are allowing organisations, communities and individuals to take greater control of where their heat and power comes from, as well as reducing their demand for it. Increasing the understanding of these systems and accelerating the use of renewable and low carbon technologies in Manchester is therefore of critical importance to the future energy resilience of the city.

Headline aim:

To increase knowledge, research and delivery of renewable energy technologies; understanding and planning of the city's energy needs and opportunities; and application of digital technologies for energy management.

“It is important to improve the resilience of the grid to cope with future climate changes and ease the adoption of low carbon technologies. There is also a need for action at a grassroots community level, and Manchester organisations are participating in the development of a Greater Manchester Community Energy Strategy, which will clearly set out the full range of benefits that community energy projects offer.”

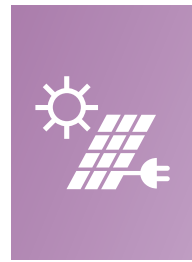
 **Feed-in Tariff**



2,635 = 7.4MW

Renewable energy installations registered for Feed-in Tariff in Manchester

Generation capacity
(Slightly below the Core Cities average of 2,692 installations with 8.2MW capacity)



 **Number of renewable energy installations**

The number of new renewable energy installations registered for the Feed-in Tariff in Manchester rose steadily between 2010-12, but then fell significantly between 2012

and 2013. This follows national trends as it was heavily influenced by the level of tariff available and scheduled reductions set by government.

Indicator	2009	2010	2011	2012	2013
No. of renewable installations registered for Feed-in Tariff, and amount of generation capacity	n/a	29 installations 0.153MW capacity	205 installations 0.615MW capacity	2,024 installations 5.61MW capacity	377 installations 1.019MW capacity
Cumulative no. of renewable installations registered for Feed-in Tariff		29	234	2,258	2,635
Cumulative generation capacity of renewable installations registered for Feed-in Tariff		0.15MW	0.77MW	6.38MW	7.40MW



ELECTRICITY NORTH WEST: INVESTING FOR THE FUTURE

Electricity North West has been granted funding for three multi-million pound trials through Ofgem's Low Carbon Networks Fund. The company's innovation strategy is based around smart solutions and low carbon technologies, to keep costs down for customers and reduce carbon emissions.

The **Capacity to Customers** project uses new technology and innovative commercial contracts to increase the amount of energy that can be transmitted through the existing network. Customers, including some in the city centre, around Oxford Road and Chorlton, are offered a monthly payment in exchange for allowing the company to manage their connection in the event of a fault on the system.

CLASS (Customer Load Active System Services) will harness tiny changes in the voltage to thousands of customers' homes to manage demand and make more efficient use of existing network capacity. A series of surveys will ensure there is no adverse impact from the project on customers, which includes parts of East, Central and South Manchester.

The **Smart Street** project builds on the learning from Capacity to Customers and CLASS. By combining innovative technology with existing assets, this project aims to make the region's networks and customers' appliances perform more efficiently, saving customers money on their energy bills.

For more information on Electricity North West and its plans for the future, visit:

www.enwl.co.uk/thefuture



Large scale energy schemes

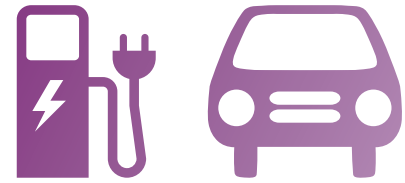
Significant progress is being made on the development of large-scale energy generation schemes. Sixteen opportunities for heat networks have been identified in the city – work around – feasibility and the business cases is currently underway on four of these.

Planning permission for an exploratory geothermal borehole has been granted, and Manchester Metropolitan University is leading on a local Hydrogen Partnership. These emerging renewable energies are indicators of innovative steps forward and both have potential for significant future expansion.



Cutting edge energy trials

Organisations including Electricity North West and the University of Manchester are undertaking cutting edge trials to understand how the city needs to prepare for future energy demands, such as the increased use electric vehicles that may require grid reinforcement and planning at certain locations.



NORTHWARDS HOUSING RENEWABLES PORTFOLIO

Since November 2011, Northwards Housing has installed solar PV panels on over 1,300 individual homes throughout their estates. It is estimated the panels will save residents around £150 (tenants' estimated total savings to date £621,443), and an estimated 1,912 tonnes of CO₂ every year. In addition to this, ten multi-storey blocks and two retirement schemes have had systems installed to generate electricity for the communal areas. Solar thermal has also been installed on six retirement schemes and 32

bungalows in the Higher Blackley and Charlestown areas.

A ground source heat pump system has been installed at Duncan Edwards Court to supply heating to 11 apartments. Initial monitoring suggests an 80% energy saving, 44% cost saving (average daily saving of £11) and 49% CO₂ savings against a notional gas boiler. In 2013, Northwards were recognised for this project at the National Heat Pump Awards.

Headline progress

An outline of the progress made on the priority energy actions, as set out in the MACF Update 2013:

Energy:	
<i>Integrating policies from the Core Strategy with the framework of the GM Energy Plan, we will have developed a city-wide energy plan that sets out the major opportunities for renewable energy generation, embedded within the city's plans for neighbourhood regeneration.</i>	Manchester's Core Strategy energy policies have continued to be implemented. A city-wide energy plan has not yet been developed. However, mapping major opportunities for heat networks has been undertaken using information on heat mapping, planned developments and raw energy data.
<i>Awareness and understanding of the sources of energy will be increased for organisations and residents and programmes such as GM's Energy Switching scheme will have increased local demand for energy from renewable sources.</i>	Two GM energy switching campaigns have now been completed resulting in 915 Manchester households switching their energy supplier and saving an average of £122 per year. A third campaign has recently been completed. These campaigns have helped to raise awareness about the cost of energy and widen the debate about reducing energy use and saving carbon.
<i>We will have progressed understanding and practice of smart energy management in the city through programmes including ENW's Capacity to Customers and CLASS projects, and outputs from Manchester Energy.</i>	Cutting edge smart grid research is being conducted by Manchester Energy and Electricity North West. This will ensure that Manchester can cope with the future power demands of its citizens and businesses, including the multi-million pound Capacity to Customers, CLASS and Smart Streets trials.
<i>Large-scale energy generation and distribution systems will have begun to serve a small number of key areas of the city, establishing the basis for developing city-wide heat networks in the future.</i>	Sixteen opportunity areas having been identified for large-scale heat networks in Manchester. Progress on these includes establishing the business case for a Civic Quarter Heat Network, along with feasibility work on a number of other potential schemes. Planning permission has also been secured for an exploratory geothermal borehole in Ardwick that would provide renewable heat to the local area. Delivering and expanding these networks is fundamental in making it attractive and feasible for developers to connect to low carbon and renewable heat provision for their schemes.
<i>We will have increased the installation of building-scale renewable and low carbon heat and power technologies including solar PV, geothermal, solar thermal, hydropower and heat pumps.</i>	Building-scale renewable energy generation installations have continued but there has been great fluctuation in the number of installations each quarter registering for the FIT, with a peak of just over 2,000 installations in 2012. It is thought installation levels are heavily influenced by the level of tariff available and scheduled reductions as set by government.
<i>Partnerships including our universities and Manchester Science Park will have developed Manchester-dedicated research and demonstrator programmes that develop digital energy data, closed-loop fuel recycling, new applications such as hydrogen technology, and an understanding of the potential for locally produced biofuels.</i>	Early development work by Manchester Metropolitan University has led to the establishment of the GM Hydrogen Partnership, which aims to forge a network that accelerates the use of this clean technology to decrease demand for grid electricity and generate research opportunities in the city.
<i>We will have developed innovative demonstrators using open data and sensor networks to monitor energy use and help stimulate cultural change.</i>	Carbon Co-op has been developing open source energy monitors, and the EU-funded 'Project Odysseus' is underway in the Town Hall Extension, which involves developing a new energy management decision aid.

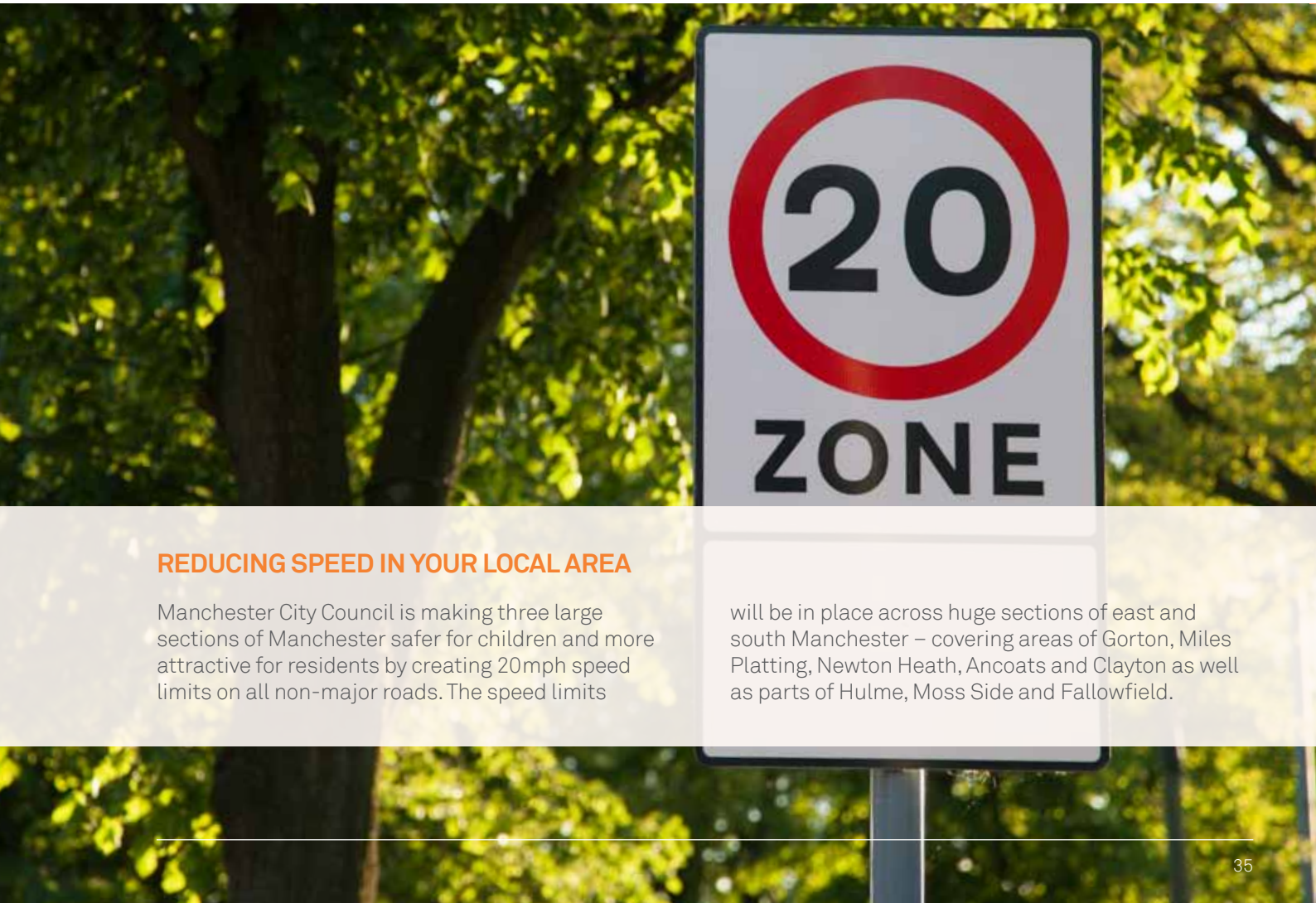
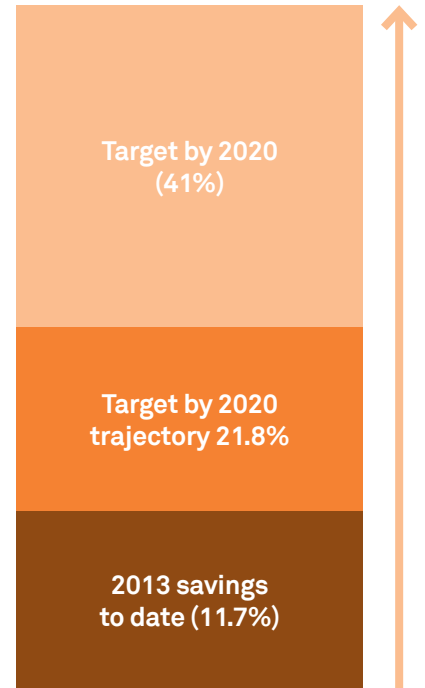


Transport emissions

In 2013, transport was responsible for **648ktCO₂**, **23%** of Manchester's carbon emissions.

To date carbon emissions from transport have reduced by **86ktCO₂** (equivalent to **11.7%**).

A proportional **41%** reduction by 2020 would require saving a further **215ktCO₂**.



REDUCING SPEED IN YOUR LOCAL AREA

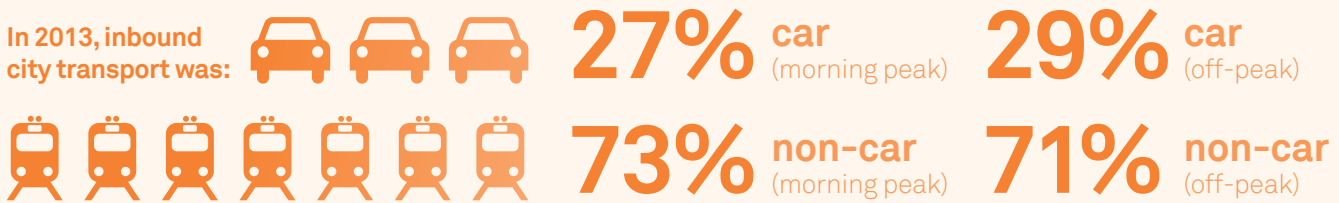
Manchester City Council is making three large sections of Manchester safer for children and more attractive for residents by creating 20mph speed limits on all non-major roads. The speed limits

will be in place across huge sections of east and south Manchester – covering areas of Gorton, Miles Platting, Newton Heath, Ancoats and Clayton as well as parts of Hulme, Moss Side and Fallowfield.



Sustainable transport

The number of people using public transport to get into and around the city is continuing to rise.



The expansion of Metrolink has seen the Oldham, Rochdale, Droylsden and Didsbury lines open and further development is underway for the Second City Crossing and the Manchester Airport line.

The Bus Priority package is on target to be up and running in 2015 and will see an improved network stretching 25 miles, including enhancements for cyclists and in some cases fully protected ‘Dutch style’ cycle lanes.

A successful bid to the Cycle City Ambition Grant has led to the planning of large-scale projects to improve the city’s cycling infrastructure. This is supported by the launch of the Greater Manchester Cycle Strategy and Velocity vision to significantly increase cycling levels by 2025.

Indicator	2009	2010	2011	2012	2013	Comments
Modal share of non-car trips into the key centre (Manchester)	69.7%	69.4%	70.2%	71.7%	72.7%	Morning peak (7:30-9:30) figures for Manchester regional centre.

“In addition to avoiding unnecessary vehicle emissions, shifting to cleaner methods of transport positively impacts on air quality, which in turn brings an array of related health benefits.”



VELOCITY 2025

Velocity aims to increase cycling levels by 300% across Greater Manchester by 2025. A £20million Cycle City Ambition Grant will deliver a major new network (spokes) of strategic, integrated and – where possible – segregated cycle routes to employment centres, schools and leisure facilities.

The development of ‘Cycle and Ride’ stations for Gatley, Irlam, Flixton and Guide Bridge railway stations and at Prestwich, Hollinwood and East

Didsbury Metrolink stops will improve journey connections and help people travel into and around the city.

Six Manchester schools and colleges (Parrs Wood High School, Newall Green High School, East Manchester Academy, Connell Sixth Form College, Manchester Communications Academy and Xaverian College) are also receiving funding to improve cycle facilities and help encourage cycling as a travel choice for students.

Headline progress

An outline of the progress made on the priority transport actions, as set out in the MACF Update 2013:

Transport:	
<p><i>More of us will have access to greener public transport – Metrolink lines to Didsbury, Droylsden, Wythenshawe and Rochdale will be operational and Quality Bus Partnerships will be further developed: SMART ticketing for the whole network will be in the process of being introduced.</i></p>	<p>Didsbury, Droylsden, Rochdale and Oldham Metrolink lines are now operational and work has begun on the Second City Crossing and Manchester Airport lines.</p> <p>Quality Bus Partnerships are making progress, coinciding with the Bus Priority package.</p> <p>SMART ticketing is being launched for the Metrolink in 2014 following the installation of 350 ‘smart readers’.</p>
<p><i>An improving framework for increasing commuter cycling will be in place – cycle centres, training programmes, employer user groups, new cycle lanes and signage, improved integration with Metrolink – and plans for expansion will be in development as part of a new Greater Manchester cycle strategy.</i></p>	<p>TfGM’s Cycle Commute team has delivered 2,160 adult training places; 107 learn to ride sessions; issued 12 cycle storage grants totalling £54k; and engaged with over 150 businesses across Greater Manchester.</p> <p>The Velocity vision for cycling is underway funded by the £20m Cycle City Ambition Grant (see case study for details).</p> <p>The GM Cycling Strategy is out to consultation and due to be finalised by the end of the year.</p>
<p><i>Through an increase in active travel programmes and Manchester Carbon Literacy schemes, more residents and pupils will be aware of the health and climate change impacts of their transport choices.</i></p>	<p>As part of the Cycle City Ambition Grant an ‘Access to Education and Walking’ project is in progress to raise awareness of active travel and encourage greater uptake of walking and cycling in local communities.</p>
<p><i>Many large and medium-sized employers, including Universities, NHS Hospitals, The Co-operative and the Council, will be delivering green travel plans, and inspiring others to follow.</i></p>	<p>TfGM’s business travel support includes one-to-one support from a business travel advisor, sustainable travel grants for capital and revenue projects up to £10k, ticketing discounts and offers, access to a free car sharing database and access to free cycle training and maintenance classes.</p> <p>Over the last year the travel choices team has worked with 37 organisations and over 110,000 employees in Manchester including the Universities, NHS Trusts, Arndale Centre, JD Williams, The Co-operative and Eversheds. Several businesses relocating into the city centre have also been assisted.</p> <p>Sustainable travel grant funding was awarded for cycle parking at three organisations in Manchester last year with a further three applications pending approval.</p>
<p><i>We will see more widespread 20mph zones in residential areas, helping to make walking and cycling a safer and more attractive option, and improving the wellbeing in our neighbourhoods.</i></p>	<p>Manchester Public Health has funded £500k for the development of three 20mph speed limit areas. Installation has now begun and it will fully compliment the existing network. Discussions are taking place to explore other areas across the city that will benefit the most from 20mph speed limits.</p>

An initial network of electric vehicle charging points will be operational across Greater Manchester, including in Manchester, and use of the city car club will have increased by 50% with more cars available.

Phase 1 complete – 132 EV charge posts have been installed and are operational across Greater Manchester. Phase 2 underway – 27 fast charging posts and four rapid chargers to be installed. Charging points still free to use as an introductory offer and a pricing structure will be developed in the near future.

City Car Club discussions are underway with its new regional manager around how to increase membership and the number of cars across the city.

The development of Quality Bus Partnerships and cycling promotion in the south of the city centre will have begun to transform the Oxford Road corridor into a centre of excellence for sustainable transport.

An extensive public consultation exercise for the Oxford Road element of the Cross City Bus Proposals was undertaken by TfGM in Summer 2013. Following this exercise, TfGM has reviewed all the comments received and are currently finalising the design. This process takes into account the feedback from the recent cycle workshops that were held to inform the design of the cycle facilities along Oxford Road.

We will have begun to research and develop new ways of moving freight around in the city, exploring partnerships that include retailers, electric vehicles and new businesses.

MCC, TfGM, New Economy, MIDAS and other stakeholders have been analysing likely future trends for deliveries, taking into account issues such as internet shopping, and are developing proposals to tap into national and European research funds.

TfGM are looking for opportunities to develop more sustainable freight operations as part of the business travel advice service, and have also been promoting the use of electric vehicles in conjunction with the GM EV scheme.



GMEV charge points, East Didsbury

Sustainable consumption and production

The 41% CO₂ reduction target set out in MACF is based on the city's direct carbon emissions from energy used in our buildings, infrastructure and transport. Sustainable consumption and production (SCP) contributes to the city's wider, indirect, emissions as it aims to reduce the emissions embedded in the products and services we purchase and dispose.

This is the city's total carbon footprint (TCF), which has not yet been calculated for Manchester, or for many other cities. However, examples from elsewhere show that the SCP theme will play a valuable role in reducing it. As such, we will be placing increasing emphasis on SCP – there are many successful small-scale initiatives underway that would benefit from being scaled-up, and there is still a significant amount that we can achieve in this area.

Headline aim (waste):

To develop a sustainable approach to waste management, ensure maximum use of waste as a resource, and move from waste management to resource recovery.

Headline aim (food):

To build a better understanding of the food systems that support Manchester, create strong links between healthy diets and sustainability, and to develop opportunities to build local supply chains that support local businesses and reduce risks to future food security.



Food and recycling

In 2013/14, 75 tonnes of food was diverted from landfill by FareShare Greater Manchester in partnership with Manchester City Council and New Smithfield Market.

In 2013, 34 local organisations were supported through the Growing Manchester programme, an increase of 22 organisations in 2012.

The percentage of household waste being recycled in Manchester has doubled from:



→ This is slightly lower than the England average of 43%

KPI	2009	2010	2011	2012	2013
Amount of household residual waste per household (kg)	700.66 (2009–10)	631.44 (2010–11)	517.94 (2011–12)	480.66 (2012–13)	
Percentage of household waste recycled or composted	18.82% (2009–10)	25.8% (2010–11)	34% (2011–12)	36.8% (2012–13)	
Food wastage from New Smithfield Market diverted back to food chain				23 tonnes	75 tonnes (2013–14)
Number of organisations supported through the Growing Manchester Programme				12	34

“Many of the themes the SCP will take forward are cross cutting, so part of its agenda will be to establish close working relationships with other MACF Groups.”



Consuming more sustainably

The MACF SCP Group was relaunched in November 2013 and has been working with many partners to establish an agenda and governance structure that maximises the opportunities for each partner, but doesn't duplicate the work of other agencies. A small coordinating body is being established along with theme and sector based groups to actually deliver projects, on procurement, waste and food, in the first instance.

One of the longer-term aims of this group is to expand the scope of their work by creating broader partnerships with other initiatives, such as Real Food Wythenshawe.

Through this, the group will be able to develop a more sustainable locally based food economy, which can take advantage of the large purchasing power of private companies and public organisations based in Manchester to expand and diversify.

A Manchester Food Board has recently been established to lead on food policy for the city, with input, support and challenge from MACF SCP. As part of the Food Board, the SCP Group recently helped to promote a motion on food poverty to the City Council as well as the agenda around food waste and local procurement.



FARESHARE GREATER MANCHESTER

FareShare Greater Manchester reclaims food discarded by traders at New Smithfield Market, sorts it and distributes it to people in need across Greater Manchester, giving those on low incomes or without access to fresh food the chance to eat fruit and vegetables and benefit from the proven health benefits that they bring.

The amount of food captured in this way has risen from 23 to 75 tonnes in a year. This is due to the

hard work of the staff and volunteers at FareShare Greater Manchester, but also because of the strong partnership developed between FareShare Greater Manchester and Manchester City Council. Clearly, if food can be diverted from the waste stream so successfully, there must be ways of intervening in other sectors to use resources for everyone's benefit – such as developing new services and jobs through reducing waste to landfill and expanding the number of organisations supplying reconditioned products.

Headline progress

An outline of the progress made on the priority SCP actions, as set out in the MACF Update 2013:

Procurement:	
<i>Sustainable procurement will be improving the environmental performance of our organisations, and creating demand for suppliers to provide to provide low carbon goods and services.</i>	Many Manchester organisations, including the Council, now have a Sustainable Procurement Policy in place. Manchester Veg People already supplies to the University of Manchester, and the MACF SCP Group has started to work with the Universities, hotel sector and visitor economy to seek out further opportunities. Work is underway to understand the implications of the Social Value Act, which gives greater weight to the consideration of social and environmental objectives within tendering for products and services, and this is due to be piloted.
<i>There will be more businesses in the city providing low carbon goods and services.</i>	The ENWORKS Growing the Green Economy programme has been launched to support local businesses (see the Low Carbon Economy section for further details).
<i>Research from the Sustainable Consumption Institute and others will help identify further opportunities for low carbon activity from 2016.</i>	A programme of research activity will be determined by the MACF SCP sub-groups.

Waste:	
<i>At least ten large organisations will be committed to sending zero waste to landfill by 2020.</i>	Manchester Metropolitan University includes zero waste as an aim of their new Birley Fields campus. The SCP Waste Group will be reviewing this action by providing avenues for resources, which are currently defined as waste.
<i>The city will have a growing number of businesses repairing and reusing goods, which would otherwise become waste.</i>	There are some good examples of reuse social enterprises and businesses in Manchester, especially around food, clothing, furniture and bicycles. However, a better understanding of this sector is required and the SCP Waste Group will work out how to support an increase in supply and demand for services in this sector.
<i>We will have a full understanding of the city's commercial and industrial waste and be exploring options for increasing recycling and reducing the amount to landfill.</i>	The NHS and Universities are good examples of organisations striving to reduce their waste in Manchester. However, there is much scope for improvement elsewhere and an improved understanding of the opportunity is required. The MACF Waste Group will learn from their experiences and support others to change and improve.
<i>All new developments will be designed to facilitate best practice waste management and maximise the amount of material sent for recycling.</i>	Currently a Waste Management Plan is requested at the planning application stage for each new development, which is then evaluated by Environmental Health. The effectiveness of this strategy needs to be monitored and appraised.

Food:

By making land available and providing support, community food growing projects will have sprung up all over the city, including schemes delivered as part of neighbourhood regeneration schemes and new developments.

The Growing Manchester programme, run by Sow The City from 2014, is steadily increasing the number of 'grow your own' groups it supports. Other initiatives including Real Food Wythenshawe, now in its second year, are promoting healthy eating through a programme of dietary advice, improving people's cooking skills and awareness of ingredients, and identifying land so people can grow their own food.

Community growing, local food production and consumption, and reducing food waste will have a higher public profile through exemplar projects like Wythenshawe Real Food and FareShare Greater Manchester.

FareShare Greater Manchester has trebled the amount of food reclaimed from the waste stream and New Smithfield Market. A funding application has been successfully submitted to develop an on-site kitchen to allow FareShare Greater Manchester to process reclaimed food into products for sale as well as training volunteers in food preparation. This is one way in which the capacity to capture food will be increased, as well as partnerships with other organisations such as Real Food Wythenshawe.

There will be an increase in Manchester-based businesses growing and processing food commercially, for sale within the city.

Initial investigations are taking place, under the auspices of the Food Board, to look at high intensive food production within Manchester. This will complement work by the Council and other partners to investigate how procurement practices can be amended to introduce more locally grown food within public sector contracts.

Further progress will have been made in reducing and recycling domestic food waste and initiatives that reduce and recycle commercial food waste will be increasing in scope and scale.

Manchester's domestic recycling rate has increased from 18% in 2009/10 to 36.8% in 2012/13.

Manchester will have begun to build a reputation as a destination for sustainable food through large events and festivals as well as neighbourhood food markets and projects.

Progress has been made through the Manchester Arts Sustainability Team (MAST) with partners including Manchester International Festival. The Council is delivering its Sustainable Events Pilot Programme, which is monitoring and improving the sustainability of a range of events including those operated by Manchester Markets.

Green and blue infrastructure

Green infrastructure (GI), is the term used for all the green and blue spaces in the city – the parks, playing fields, gardens, rivers, canals, lakes etc. These form a critical part of the city’s attractiveness to investment and to the health and wellbeing of our communities. GI is also vital for nature conservation, providing important habitat connectivity, and will continue to help us adapt to climate change.

Headline aim:

To ensure the city’s green and blue infrastructure is providing the optimal benefits to the city in terms of quality of life, climate change adaptation, and wider social, economic and environmental benefits.



Green infrastructure evidence and research

Manchester is currently developing its own Green Infrastructure Strategy. In 2013, significant work was undertaken to develop focussed research and map the extent of GI in the city.

Through work with the University of Manchester, Manchester Metropolitan University and Salford University to

establish a GI evidence base, 11 GI research projects have now been developed.

The next steps will be to analyse the data with a view to better understanding the benefits GI brings to the city, and use this evidence base to help develop the strategy and support the action plan.



RIVER MEDLOCK, EAST MANCHESTER

The renaturalisation of the River Medlock is the result of an exciting Water Framework Directive collaboration between the Environment Agency, Manchester City Council, Medlock Valley Project and Groundwork Trust. A first phase began in 2013 with the aim to breathe new life into around 1km of neglected watercourse in the heart of East Manchester.

And it's a complex piece of river engineering. After serious flooding in the late 19th Century, the river was given a makeover, in the form of a sterile red

brick channel in order to prevent further flooding. The project will retain the flood defence function of the river while at the same time restoring it to a more natural habitat.

There will be many end products to this initiative. It will improve flood defence, water quality and biodiversity value, at the same time improving the sense of place and opportunities for communities to engage with the river. When realised in 2014, the pilot project will have delivered the most amazing transformation of the River Medlock for the past 100 years.



“GI coverage in Manchester extends to 58% of the city’s surface area.”

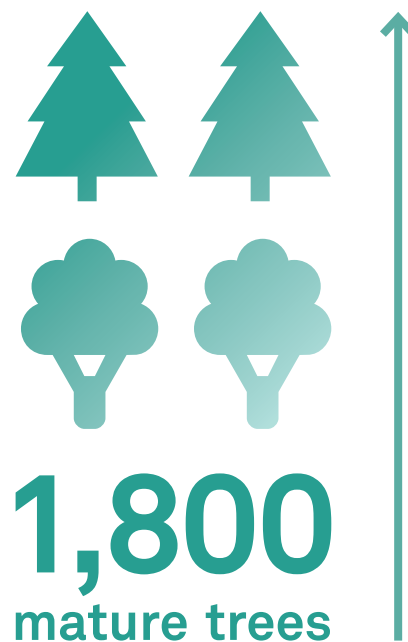


GI investment

Work began in 2013 to identify opportunities for GI investment. A significant proportion of the £14.5m Clean City fund is expected to be allocated to sustainable GI related projects across Manchester over the next two years, from tree planting and landscape management to water quality improvements.

There are also some radical solutions already being delivered as a number of major transformational projects take shape. Manchester City’s ‘City Football Academy’ on the Etihad Campus will leave a major GI legacy of 1,800 mature trees, over 2.5km of hedgerow and a massive 12,000m³ Sustainable Urban Drainage (SUDs) scheme.

And the Environment Agency has invested over £400,000 into a 400m stretch of the River Medlock in East Manchester – one of the most complex river restoration schemes in the country. Such is the project’s status, it is already attracting international attention from planners in Japan and Malaysia.



£400,000
Environment Agency investment

400m
stretch of the River Medlock



GI monitoring

Annual submissions are provided to Defra regarding the condition of Sites of Biological Importance (SBIs) in active conservation management – to date, statistics indicate a steady improvement. Manchester has a relatively small number of compared

neighbouring authorities (37 in 2014) but continued work with land managers helps to ensure that we achieve the annual target of a minimum 1% increase of sites in active conservation management.



Trees in the city

The number of trees planted in the city continues to increase. Tree canopy cover in Manchester has increased from an estimated 15.2% in 2005/6 to approximately

20% in 2012. The accuracy of data has improved since 2005, which could also be a contributing factor, but regardless of this, tree canopy cover in the city is increasing.

Indicator	2009	2010	2011	2012	2013	Comments
Monitor and maintain the % of SBIs in positive management	43%	46%	48%	50%	51%	Target is a minimum 1% annual increase of SBIs in active conservation management
Local Nature Reserves (LNR) numbers and hectares	7 (307ha)	7 (307ha)	8 (392ha)	8 (392ha)	8 (392ha)	
Number of trees planted per annum	18,227 (BBC campaign)	8,120	10,515	9,400	10,106	A combination of trees, hedge plants and fruit trees planted as part of known schemes

Image courtesy of Dig the City

FROM GREY TO GREEN

In 2013, six public events including the Manchester Festival of Nature and three training events were delivered in the city. The three-year project, which received £500,000 from the Heritage Lottery Fund, is led by the Greater Manchester Ecology Unit and is looking to inspire a new generation of nature recorders in the city and in three other local authority areas. Over 53,000 new wildlife records have been collated in 2013 – nearly double the amount in 2011 before the project started – helping to both build confidence in the public recording of wildlife and to provide important evidence in relation to biodiversity change in the city.

DIG THE CITY 2013

Dig the City welcomed one million visitors to the city centre over nine days in August 2013. The groundbreaking urban gardening event saw events, stalls and green spaces pop up across the city and was delivered with support from CityCo, the National Trust, Manchester City Council, Manchester Cathedral, Groundwork and NOMA. Victoria Street Park and Piccadilly Basin Garden form part of the Dig the City legacy, and prove that high quality GI focussed engagement events can generate a significant economic benefit.

Dig the City won a commendation at the 2013 UK Event Awards and Gold at the 2013 RHS Britain in Bloom Awards.

Headline progress

An outline of the progress made on the priority green and blue infrastructure actions, as set out in the MACF Update 2013:

Green and blue infrastructure:	
<i>A 'Green and Blue Infrastructure Strategy' will be published and in use in all parts of the city, providing a framework for ensuring that natural environment benefits become and remain embedded in our plans for neighbourhoods and the city centre.</i>	Twelve meetings and engagement events have been undertaken, working with over 30 partner organisations to begin to develop the framework for a GI strategy in Manchester. Significant work detailing the extent of GI in the city has been undertaken to underpin strategy development.
<i>A programme of tree planting will have continued in the city, with an increase in street trees, green roofs and green walls delivered or planned in the city centre.</i>	In 2013/14 over 10,000 trees were planted, including major hedge planting by Southway Homes and innovative city centre planting schemes as outlined at Stevenson Square. Five new fruit tree orchards were also planted in parks and green spaces across the city.
<i>Investment in the quality and use of the city's waterways will be better aligned with other priorities so that flood risk management, improved water quality, property values, recreational and urban cooling benefits are linked with urban development and refurbishment.</i>	Over £25m has been committed by United Utilities to improve water quality within the Irk Valley Catchment in North Manchester over the next five years. Working with Oldham MBC, the Moston Brook project has continued to deliver community focussed practical environmental improvements along the Brook in North Manchester in 2013, including 500m of access improvements and a detailed water quality survey.
<i>Community and friends groups, businesses and schools will be more actively involved in the city's green and blue spaces, and learning about the many benefits they can provide, including health, recreation, climate change adaptation and mitigation.</i>	In 2013 numerous events across the city helped showcase GI, including the biggest Dig the City event yet. Manchester also hosted the BBC Festival of Nature Event at Heaton Park, promoting nature to over 2,000 visitors.
<i>Data held on all the city's green and blue infrastructure will have been improved and updated and made publicly available, growing a shared understanding of its value for climate change adaptation, biodiversity, health and wellbeing, education and recreation.</i>	After an exhaustive and complex process of data gathering and analysis we have, for the first time, been able to assess the extent of green infrastructure (GI) in the city. In 2013, 58% of the city was made up of non man-made surface or GI.

Part 3 Actions for 2014

Actions for the MACF Steering Group

Part 1 of this report describes the work of the MACF Steering Group during 2013, including the completion of a review of its activities to understand what changes are needed to better enable it to fulfil its role. Initial work has been completed in response to this review – as also described in Part 1. Further work is now needed during 2014 to identify a comprehensive set of actions that the Steering Group need to deliver in order to fully meet its role in championing, facilitating and driving the delivery of MACF. Among the issues identified for the Steering Group are:

- developing a comprehensive and coherent communications plan;
- developing the new programme of events and engagement activities; and
- developing an approach to making MACF relevant to and deliverable in all of the city's diverse communities.

Actions for everyone in the city

The MACF Update 2013 was produced to set out the key actions that would be needed to be delivered over the period 2013-15. Part 2 of this report provides an overview of progress against these actions – both where good progress is being made and, importantly, where further action is needed. All the city's stakeholders have a role to play in this action, in making Manchester a world-class low carbon, climate adapted city.

One of the key findings of the review is the need for MACF to become a much 'SMARTer' plan, one which more clearly connects the actions to the objectives we are trying to achieve, what indicators will be used to measure progress, and timescales for delivery. The development of a SMART MACF plan for 2015-20 is seen as being one of the key priorities for the Steering Group and

the wider MACF network of stakeholders. This work will also need to take into account the Greater Manchester Climate Change Implementation Plan for 2015-20, which is also planned to be developed during 2014.

Getting involved

The Steering Group has also identified the need to look at how it invites, receives, takes action on and responds to feedback. The MACF website is currently being updated to include an area to welcome comments, ideas, suggestions and offers of assistance, facilitate the sharing of information and to promote action. In addition, a number of locally hosted, focused events will be taking place on a regular basis.

The first of these events is expected to be in September 2014 and is currently intended to cover: what actions do the Steering Group need to deliver to support and enable the delivery of MACF; and what should MACF 2015-20 cover, building on the findings of the 2014 Annual Report and progress to date.

There are also a number of other routes to getting involved. As a starting point look back at the report above – could you or your organisation get involved with any of the actions? Alternatively, visit the MACF website where there is signposting to further information and support for different audiences: A Guide for Business and Organisations; A Guide for Schools, Colleges and Universities; and a Guide for Household. And finally, if that doesn't help get you started, contact the Steering Group using the details provided below.

Details of all of MACF's activities will be publicised on the MACF website: manchesterclimate.com or e-mail MACF at manchesteracf@gmail.com

Summary

This is the first annual report by the MACF Steering Group. It marks the transition from the initial set-up phase of the Steering Group to one where the Group has a stronger role in effectively driving and championing climate change action across the city.

It does not mean that the emphasis for action will now move solely onto the Steering Group. Rather it is a confirmation that the Steering Group needs to play a key central role as part of a wider network of activity. Critically, the strength of this network will be in its numbers – the coming together of the city as a whole, collectively working to ensure that Manchester can realise its vision to be a world-class, low carbon city, helping to lead the way in the transition to prosperous green futures for cities around the world.



Acknowledgements

All uncredited photography courtesy of Len Grant.

Special thanks to Manchester Art Gallery, Manchester International Festival, Dig the City, St Augustine's CE Primary School, FareShare Greater Manchester, Manchester Metropolitan University, The University of Manchester, Electricity North West, Carbon Co-Op, Cooler Projects CIC and Groundwork MSSTT.

MANCHESTER: A CERTAIN FUTURE

Annual Report 2014
