

Manchester Climate Change Call to Action

Full Report: January 2009
Manchester City Council



MANCHESTER
CITY COUNCIL

Manchester Climate Change Call to Action

(i) Introduction

In February 2008, Manchester City Council agreed its Principles of Tackling Climate Change in Manchester and made a commitment to develop, in partnership with citizens and stakeholders, a robust and practical framework for action on climate change for the City. This Call to Action is intended to engage people from all walks of Manchester life in climate change action and, in doing so, to build support for a new way of thinking about climate change.

(i.i) Why act on climate change?

The earth's changing climate affects us all. In Manchester, hotter, drier summers and wetter winters, along with more frequent extreme weather events such as storms and floods, are already an inevitable feature of the coming decades. Without action to reduce emissions of greenhouse gases, climate change is likely to accelerate – with unpredictable but devastating consequences.

Climate change is a **global problem demanding an international response**. Global efforts are increasing to find ways to curb greenhouse gas¹ emissions. At a national level, the UK Government has legislated for an obligation to reduce greenhouse gas emissions by 80 per cent by 2050 compared with 1990. Government is increasingly supporting this aim with changes to taxation, planning policies and the way construction and other energy-intensive activities are regulated. As the world economy is hit by recession, rather than shelving or delaying action, there is increasing recognition of the potential for a “green new deal”² that drives economic recovery, environmental improvement and helps to alleviate poverty and strengthen social inclusion.

But the City Council believes that climate change action cannot be left alone to national governments and international markets to solve:

- The changing climate itself and the measures that could be taken to mitigate it will be felt by individual households, businesses and communities. How Manchester generates and uses energy to power homes and workplaces, how people travel around the city and their consumption choices of food, goods and services all help to determine Mancunians' individual and collective 'carbon footprint'. Manchester's prosperity will depend increasingly on the city's **resilience** and ability to shape our communities, homes and lifestyles to a lower carbon future. Action to build resilience and adaptability is best decided and taken in Manchester.
- Across the world successful, modern, confident, outward-looking cities are beginning to develop different responses to climate change in tune with their core values and objectives. Cities like New York, Stockholm, Vancouver and Melbourne are finding that action they take to move towards lower carbon ways of living also has positive benefits for the city's **quality of life and attractiveness** to people to live, work and invest. The recent Manchester “Mini-Stern” Review³ (see section 2.1) highlights the economic advantages of setting out a positive agenda for climate change action in Manchester over simply ‘going with the flow’.
- As the “Mini-Stern” Review found, tackling and adapting to climate change is not achieved at the expense of economic growth and regeneration. Rather, it will come through **moving towards a lower carbon economy and society** and harnessing the leadership, partnership, economics, development, planning and service delivery that underpin Manchester's established ways of working. In turn, far from simply “saving the planet”, moving decisively towards a **lower carbon** economy and society can reap benefits for Manchester in the form of new competitive advantages, higher quality of life, better neighbourhoods and homes and more self-reliant communities. This is truly sustainable development.

¹ See section 1 for explanations of this and other terms

² See “A Green New Deal: Joined-up policies to solve the triple crunch of the credit crisis, climate change and high oil prices”; New Economics Foundation, 2008

³ See <http://www.manchester-enterprises.com/documents/Manchester%20Mini-Stern%20-%20FULL%20FINAL%20REPORT.pdf>

- Manchester led the world in driving social progress through innovation. Within the UK and perhaps beyond, the field is open to **take a lead** on climate change action and, where it makes sense to do so, to pre-empt and influence rather than follow the path of national legislation and policy and market changes. There is a strong fit between taking action on climate change and achieving Manchester's goals as set out in the Community Strategy, *The Manchester Way*.⁴

This Call to Action shows how Manchester can lead in turning the challenge of climate change into an opportunity to improve our city. But it will not be easy and Manchester faces difficult choices. Both the UK Government's Stern Review of the economics of climate change⁵ and the Manchester "Mini-Stern" identify **high economic costs of failing to take effective action – up to £21bn in Greater Manchester by 2020**, which can be prevented only with significant upfront investments in new technology, infrastructure and removing barriers to behaviour change – many of which also have wider social and economic benefits as well as financial costs.

(i.ii) Implementation through engagement

Action on climate change is not new to Manchester. A wide range of people and organisations have been active for many years in campaigning and taking practical steps to reduce Manchester's carbon footprint and change behaviour – reflecting Manchester's longstanding commitment to becoming Britain's greenest city (see section 1.4).

But against the current backdrop of very difficult economic conditions, climate change can appear as a confusing issue on which it is unclear what action is being asked of people and why. Often, climate change action is presented as a point of sacrifice. There tends to be insufficient emphasis on how institutions such as government and business can help people – and each other – to remove barriers to

behaviour change and demonstrate the advantages that a lower carbon economy and society could bring in the form of increased resilience, competitiveness and a higher quality of life. The present economic downturn does not relegate climate change and environmental issues in importance, but challenges us to show how climate-friendly action can help people in difficult economic circumstances and lay the foundations for a new low carbon economy when the cycle turns upward once again.

The task for Manchester is to bring local, grass-roots, community-based collective action together with the influence, capacity and resources of organisations in government and business to seize the opportunity for the city and to create a broader coalition for action drawn from all aspects of Manchester life. This means developing a framework for action that is widely understood and shared across the city, encompassing private, voluntary and public sectors. It means making it clear what Manchester residents and businesses are being asked to do and how they and their city can benefit.

The City Council wants to encourage a debate about this new way of thinking, because only by engaging people fully in the arguments and their practical implications can it become a way of acting. Implementation of the 'catalytic' actions proposed in section 5 of this Call to Action – and others that could and will be identified as people respond – offers a chance to involve people from all walks of Manchester life in a learning process and so begin to build strategic capacity to act on a broader and deeper basis. This, rather than a separate consultation process, will be how the way of thinking is debated, refined and adopted and 'champions' of climate change action will emerge. However, the Council hopes that intensive work to get action underway in spring 2009 will help to create a buzz around the Call to Action and generate a vigorous debate on the proposals.

⁴ See <http://www.manchesterpartnership.org.uk/includes/uploads/File/THE%20MANCHESTER%20WAY%20FINAL.pdf> <http://www.manchesterpartnership.org.uk/includes/uploads/File/THE%20MANCHESTER%20WAY%20FINAL.pdf>

⁵ See http://www.hm-treasury.gov.uk/stern_review_final_report.htm http://www.hm-treasury.gov.uk/stern_review_final_report.htm

Implementation will run alongside the new 'Proud of Manchester' campaign, which will engage people and communities in a range of activities and projects to improve their local environment and provide additional opportunities to pursue the themes in the Call to Action in every community in Manchester.

Box i.i: Engaging people in climate change action

Helping people to understand climate change action and take steps to tackle it which make sense in the context of their own lives is central to achieving the broad base of engagement needed for widespread behaviour change.

Work by the Young Foundation with Manchester City Council on the Local Wellbeing Project ("*Neighbourliness + Empowerment = Wellbeing – is there a formula for happy communities?*"), suggests that community empowerment enhances wellbeing and mutual respect and offers the best route to tackling complex social issues locally. The work implies that the best way to explore the benefits of climate change action is to enable and allow individual communities of geography and interest to explore responses to the challenge of lower carbon lifestyles in their own specific contexts and ways – within the context of clear facts and principles about what might be possible and necessary.

Research by Ipsos MORI explicitly in relation to climate change ("*Leading or Following*" presentation based on "*Tipping Point or Turning Point*") suggests that most people now see it as a problem. They are, however, confused about what they can do and are ready for government and business to take the lead. People's decisions are also influenced by behavioural norms. They don't approach every issue and choice with calculated rationalism and decisions are often shaped by cultural tenets of the way they live and work. Communication on climate change action therefore needs to prioritise outcomes and articulate

them clearly, linked to a range of measures that enable or incentivise specific changes among specific groups – "what do you want *me* to do". Communicators need to thoroughly understand their audiences and then engage with each target audience through a range of channels.

Who to target? Although climate change is complex, the essential foundation of tackling it – behaviour change to use less energy – is quite simple. But messages about what types of behaviour change, by whom, supported how, to get the most impact in the short time, are not. Higher-income people and households are responsible for higher per capita emissions than those with lower-incomes (see section 2.3), but there are more low-income households in Manchester than high-income ones. Lower-income people are generally more likely to live in badly insulated homes; higher-income people to use more energy through the expenditure of disposable income (on holidays, durable goods, imported luxury foods, etc) and to be less financially sensitive to the energy efficiency of their houses. People living in low-density suburban locations may be less readily able to reduce their car use; yet high-density city living is often seen as the preserve of those on high incomes with greater flexibility on location.

In practice, an effective climate change action plan will need to make the following distinctions:

- **sectoral** – between domestic and business emissions and action;
- **physical** – between those places in which most behaviour change messages are asking realistic things of people given their physical environment, and those in which such messages are only credible or acceptable with support or investment in the physical fabric;
- **social and cultural** – targeting particularly carbon-intensive behaviours among particular social groups or lifestyles; and
- **universal** – simple messages that can easily be implemented by almost anyone.

Following and reflecting the response to the Call to Action, the City will launch later in 2009 a comprehensive **Climate Change Action Plan** for Manchester. As a result of work between now and then this will:

- Bring together action and proposals not just by the City Council but by businesses, service providers, organisations, individuals and families from across the City;
- Reflect a widely shared and owned understanding of the problem and the opportunity of climate change and in doing so define and decide what Manchester's response will be and how and whether we can turn the challenge to our advantage;
- Set out a firm programme of work for the first three years which incorporates the proposed 'catalytic' actions into a wider plan; and
- Provide a clear roadmap, with suitable metrics, for achieving a reduction in the City's carbon footprint of at least one million tonnes by 2020, with appropriate interim budgets.

Manchester climate change action plan timescales

Feb 2008:	City Council Climate Change Principles agreed
Mar-Nov 2008:	Analytical work and provisional action-planning by the City Council
Jan 2009:	This Call to Action published
Jan-Mar 2009:	Detailed action planning
Spring-Summer 2009:	Community awareness raising and engagement through the "Proud Of" campaign
Spring-Summer 2009:	Engagement through implementation of the proposed 'catalytic' actions
Late 2009:	Final Manchester climate change action plan published

(i.iii) Form and content of this document

Recognising that lengthy and technical policy documents frequently go unread, this Call to Action seeks to address the issues and options for climate change action in a jargon-free, digestible way, whilst reflecting their complexity.

- Section 1 discusses the **challenge** of climate change, the City Council's Principles of Tackling Climate Change and the nature of action in Manchester to date.
- Section 2 identifies the major **opportunities** Manchester could realise through effective climate change action.
- Section 3 puts action in Manchester into a global and national context, describing the appropriate kinds of action at different **spatial levels of governance** (i.e. global, national, regional, local).
- Section 4 sets out a range of proposals to build capacity – the resources and know-how to get things done – for climate change action in Manchester.
- Section 5 identifies a series of '**catalytic' actions** – measures to demonstrate what can be achieved and help us to learn how – the City Council proposes to take or support.
- Section 6 discusses the **outcomes** expected from this Call to Action.

Text boxes, charts and figures are used to present more detailed information in relation to the main narrative and a range of case studies from Manchester and from cities around the world that are relevant to the issues covered in this document.

A key determinant of its success will be how well Manchester's climate change action plan fits with the wider Manchester and Greater Manchester context and priorities. It is essential that the plan supports Manchester's aspirations for economic prosperity, the establishment of neighbourhoods of choice for our residents and the achievement of a truly World Class City status by 2015. This Call to Action and future climate change action cannot stand alone from established and planned activity; rather it must complement and add value to the activity of the thriving Manchester City Region. As two contrasting examples, the creation of jobs in an emerging low carbon technology sector will help to deliver the City's worklessness and skills objectives, whilst proposals for greening the city that help to adapt the city to climate change (see section 5) can provide habitat for plants and animals and support the delivery of the Manchester Biodiversity Strategy.

1. The challenge of climate change

1.1. The basic facts

Climate change is caused by increasing concentrations of atmospheric “greenhouse gases” – so-called because they induce a warming of the earth’s temperature by absorbing radiation and so trapping heat in the atmosphere. There is now an unarguable scientific consensus that emissions of **greenhouse gases caused by human activity** are responsible for rapidly rising concentrations of carbon in atmosphere, leading in turn to dangerous increases in global temperatures.

The primary source of increasing greenhouse gas emissions is carbon dioxide (CO₂) from **burning fossil fuels** such as oil, coal and gas for energy: constructing, heating and powering buildings, producing and manufacturing goods and services and transporting people and freight. Changing land use patterns such as deforestation also releases additional carbon into the atmosphere, and farming of animals for food production emits gases such as methane from their waste. In its fourth Assessment Report (2007) the United Nations Intergovernmental Panel on Climate Change (IPCC), a body of climate scientists drawn from around the world, found that carbon dioxide, methane, and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial levels.⁶ The amount of carbon dioxide in the atmosphere in 2005 (379 parts per million) exceeds by far the natural range of the last 650,000 years (180 to 300ppm).

As a **result of climate change**, cold days, cold nights and frost events have become less frequent while hot days, hot nights, and heatwaves have become more frequent. Eleven of the twelve years in the period 1995–2006 ranked among the top 12 warmest years since records began in 1850. There have been increases of both drought and storm events. Mountain glaciers and snow cover have declined, and losses from the land-based ice sheets of Greenland and Antarctica, together with expanding oceans as water warms, have contributed to

a faster rate of sea level rise. Moreover, “feedback loops” – consequences of climate change causing accelerated climate change themselves – are emerging. Losses of permafrost in Siberia are beginning to release methane, the most potent of greenhouse gases, from the millions of square miles of peat bog beneath. As oceans warm, plankton that live near the surface of cooler waters and act as a major carbon store are sinking, reducing the earth’s ability to absorb carbon. As soils warm, they turn from net carbon stores to net carbon producers. As ice coverage reduces, polar seas absorb heat rather than reflecting it back into space.

It is widely held that to prevent “runaway” climate change causing irreversible damage and catastrophic human consequences, **average global temperature rises must be limited to 2°C above pre-industrial levels**. This in turn requires stabilisation of atmospheric carbon at a level between, on different accounts, 350ppm and 550ppm. The 2006 Stern Review of the Economics of Climate Change estimated a cost of 1 per cent of annual global GDP to achieve stabilisation at 550ppm, compared with costs of between 5 and 20 per cent in a business-as-usual scenario. The first report of the independent UK Committee on Climate Change⁷ published in December 2008 confirmed a target, now adopted by the Government, for the UK to **reduce carbon emissions by at least 80 per cent by 2050 on 1990 levels**, at a cost of 1 to 2 per cent of annual UK GDP, and announced that there will be detailed five-yearly carbon budgets for the country up to 2022.

⁶ See <http://www.ipcc.ch/ipccreports/ar4-syr.htm>. The analysis in this section is based on the findings of this report.

⁷ “Building a Low carbon Economy: the UK’s contribution to tackling climate change”, December 2008 – available at <http://www.theccc.org.uk/reports/>

1.2. Manchester's contribution to the causes of climate change

Since the Industrial Revolution, which had its roots in Manchester, social and economic progress has been closely tied to innovation in the way humankind harnesses energy to produce better, more sophisticated goods and services ever more efficiently. Rising quality of life has been coupled with rising energy use and there is evidence that financial savings from increased energy efficiency are often expended on more energy-intensive goods and activities. This emphasises that it is not buildings, vehicles and equipment that ultimately use energy, but people and the consumption choices they make.

Box 1.1: Leading climate change research in Manchester

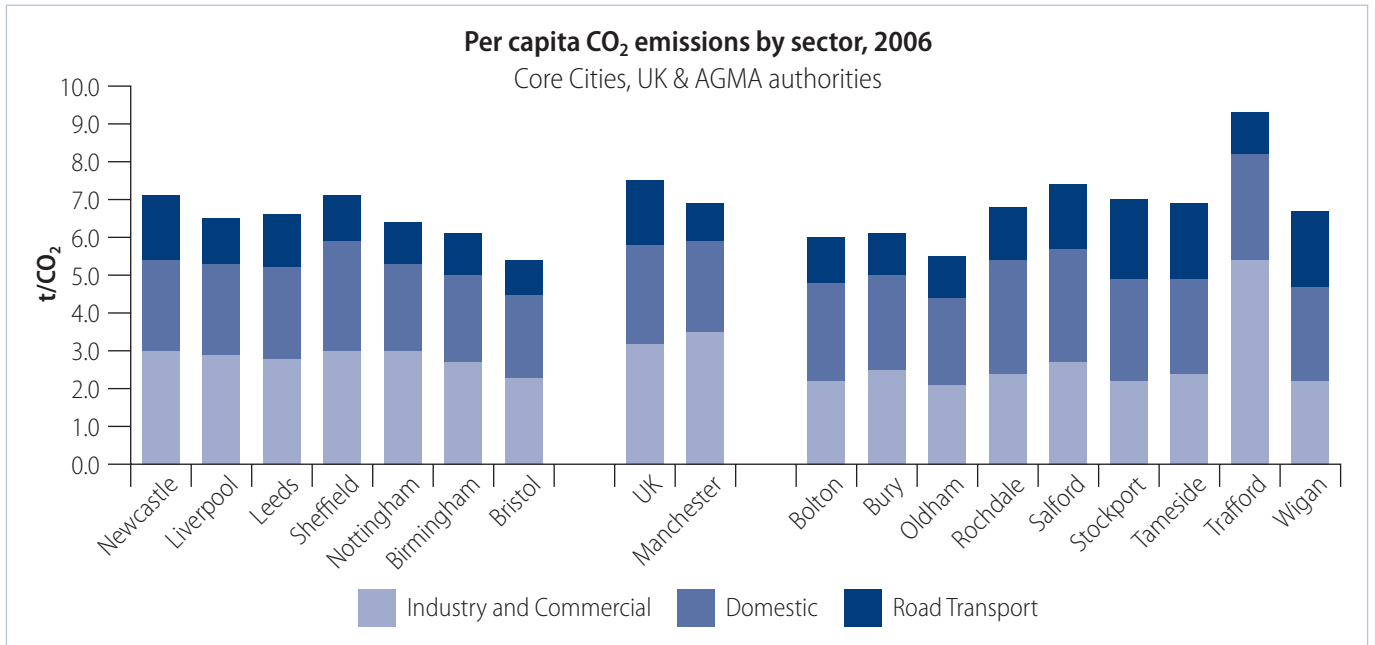
Manchester is home to several of the UK's leading research centres into the causes, effects and demands of climate change, including the Tyndall Centre for Climate Change Research, the Joule Centre for Energy Research, the Centre for Electrical Energy, the Centre of Urban and Regional Ecology and the Architectural Research Centre at the University of Manchester; and the Omega team, Centre for Air Transport and the Environment and Centre for Sustainable Innovation at Manchester Metropolitan University. In August 2008 it was also announced that Professor Mohan Munasinghe, vice-chair of the Intergovernmental Panel on Climate Change, has been appointed Director General of a new Sustainable Consumption Institute at the University of Manchester.

Manchester's collective research strength in the fields of climate change and sustainability is a major asset in positioning the city as a leader in the climate change field at home and abroad. It is important that Manchester benefits fully from the practical expertise of its research institutions and the potential gains from collaboration with city institutions and businesses. To this end, the City

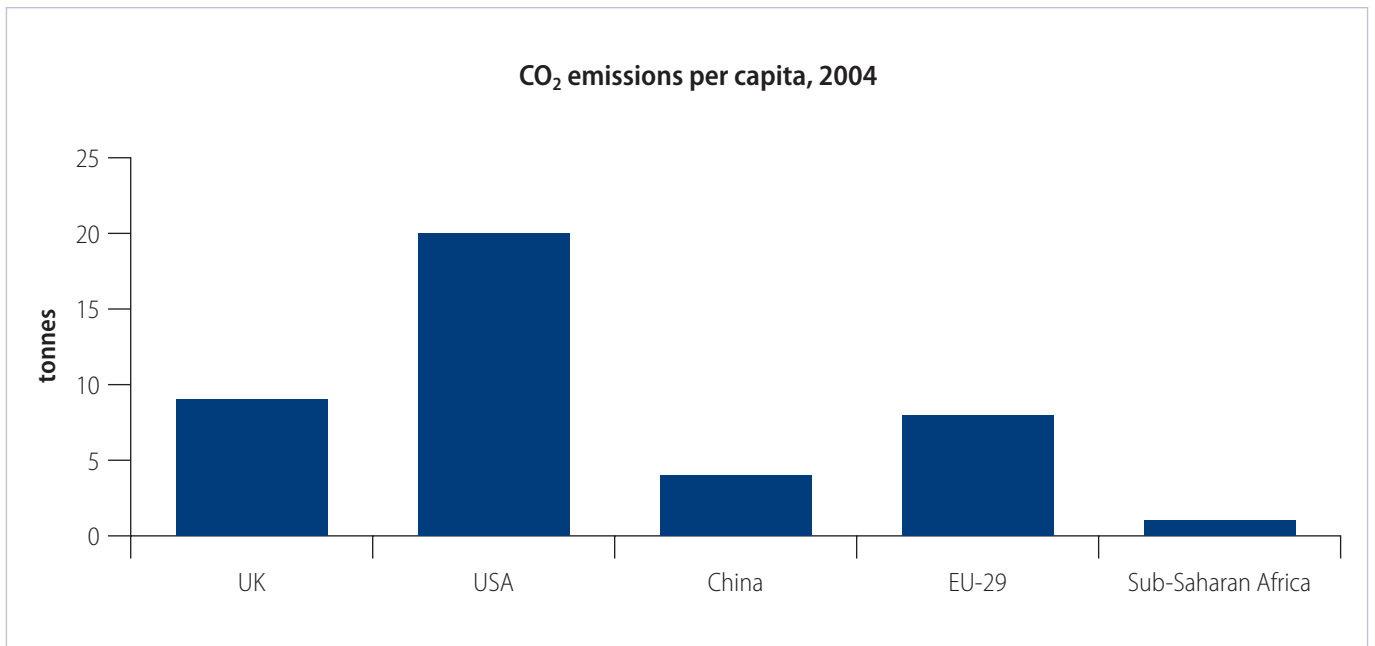
Council and the University of Manchester are developing a formal **Memorandum of Understanding (MoU)** which embodies their shared objectives of a robust response in Manchester to the challenges of climate change mitigation and adaptation and establishes Manchester as a leading sustainable city.

The MoU is in development but is likely to cover three areas of activity: design and use of low carbon, climate resilient buildings; green infrastructure and public spaces; and planning, policy and regulation for sustainable place making. The emphasis of work under the MoU in all three areas will be connecting the University's research expertise and capacity with practical action in areas within the remit of the City Council – for example in intervening in neighbourhoods to help future-proof them against the effects of rising temperatures and extreme weather. The MoU is expected to be signed in early-2009 as part of the launch of the University's work with Bruntwood Estates and the Oglesby Charitable Trust on the Eco Cities project.

Measuring the exact contribution a person, city or country makes to carbon emissions is difficult because people's lifestyles are different, economic patterns vary and responsibility for some major causes of emissions – such as aviation and the production and shipping of consumer goods traded internationally – are difficult to apportion between people and places. The Government produces annual estimates of "direct emissions" relating to energy use in industry and commerce, homes and road transport within local areas. As one of the wealthiest and most developed countries, the UK also has one of the highest per-capita 'carbon footprints' in the world.



Source: DEFRA; NI186 baseline



Source: World Resources Institute CAIT database.⁸

⁸ The two charts in this section are from different sources, have been calculated on a different basis, and so are not directly comparable. For example, DEFRA data exclude aviation and shipping emissions from their calculations

In 2006, Manchester was responsible for direct emissions of 3.1 million tonnes CO₂, an average of **6.9 tonnes per capita**. Across the Greater Manchester conurbation, total direct emissions in 2006 were 16.3 million tonnes CO₂ and the per capita average was 6.4 tonnes CO₂. The per capita average among the Core Cities group of major English regional cities was 6.4 tonnes CO₂, with Manchester having among the highest per capita footprints.

There are several reasons underlying Manchester's carbon footprint relative to other AGMA authority area and Core Cities. Prominent among them are:

- In common with other Core Cities, Manchester's position at the **economic and geographic centre** of its conurbation and region, with a high density of employment and economic activity, means that it has a particularly high incidence of business-related energy use and associated emissions. Manchester's legacy of energy-intensive industries and strong recent economic growth are two key reasons why it has the highest per capita industrial and commercial energy use of any Core City.
- Domestic emissions are higher in Manchester and several other Greater Manchester areas than in many parts of the UK. A key factor in this is the relatively high proportion of Greater Manchester's **housing stock** being pre- and inter-war and difficult to insulate using conventional means.
- Road transport emissions are generally lower in major cities and conurbations than in outlying towns and rural areas because of lower average journey times and the availability of **practical transport alternatives** such as rail and tram networks and safe and practical routes for walking and cycling.

In addition, Manchester causes carbon emissions indirectly through the consumption of goods and services produced outside the City. From the perspective of individual lifestyles, rather than places or sectors (see box 1.2), the lifestyle choices people make are just as important to tackling climate change as more direct and evident factors such as energy use in the built environment and transport. Such is the scale of the reduction in greenhouse gas emissions needed to reach sustainable levels that major changes are needed across all aspects of Manchester's footprint.

Box 1.2: Carbon emissions from the average UK lifestyle⁹

Domestic space heating	4%
Domestic hot water	4%
Domestic appliances	3%
Personal transport	18%
Embodied energy in home infrastructure (e.g. bricks and mortar)	3%
Waste and consumer items	13%
Food	23%
Shared services (total energy for running schools, hospitals, financial services, etc)	12%
Shared infrastructure (embodied energy in constructing schools, hospitals, roads, etc)	20%
Total	100%

⁹ Analysis by Bioregional Development Group presented to the Stern Review of the Economics of Climate Change – see http://www.hm-treasury.gov.uk/d/climatechange_bioregionaldevelopmentgroup.pdf

1.3. Manchester City Council's Climate Change Principles

The City Council's Climate Change Principles,¹⁰ agreed in February 2008, commit Manchester to becoming a Low Carbon City by 2020 (see box 1.3). This means that Manchester will be on track to reduce its greenhouse gas emissions to a level consistent with keeping global temperature increases to below 2°C above pre-industrial levels and will have adapted its economy, society and infrastructure accordingly – both to cope with the effects of inevitable climate change and to mitigate future emissions.

Box 1.3: Climate change: city networks

The development of Manchester's Climate Change Principles and this Call to Action reflect the commitment the city has made through the **Low Carbon Cities Programme** (<http://www.lowcarboncities.co.uk>) to develop a citywide target for carbon emissions reductions and deliver them through joined-up action involving a wide range of public and private sector bodies. Bristol and Leeds have also been involved in the programme, which is supported by the Carbon Trust and Energy Saving Trust.

Manchester also works with other major English cities through the Core Cities group to develop ideas and share best practice on climate change. In November 2007 the Core Cities signed the "Nottingham Declaration" (see <http://www.corecities.com/dev07/Publications/Climate%20change%20declaration.pdf>) jointly with the Government setting out how the Core Cities will work with each other and the Government to tackle climate change. Together with other Core Cities Manchester is also a member of the Eurocities group of major European cities and in October 2008 Councillor Richard Cowell, Executive Member for the Environment, joined city leaders from across Europe in signing the Eurocities Declaration on Climate Change.

Perhaps the most prominent city network for climate change action is the **C40** group (<http://www.c40cities.org/>) of the largest global cities, which works in partnership with the Clinton Climate Initiative to deliver climate change action through:

- Pooling the buying power of cities to help lower the prices of energy saving products and hasten development and uptake of new energy saving technologies;
- Mobilising expert assistance to help cities develop and implement programmes that will lead to reduced energy use and lower greenhouse gas emissions; and
- Creating and deploying common measurement tools so that cities can establish a baseline on their greenhouse gas emissions, track reductions and share best practice.

Currently the only full or affiliate UK member of the C40 is London.

The Climate Change Principles identified a need to reduce Manchester's direct emissions in order to meet an interim budget constraint of a 28-32 per cent reduction in emissions – a saving of one million tonnes a year by 2020 – on the way to a cut of 60 per cent by 2050 compared with 1990 levels. This now needs to be updated in line with the tougher UK target of an 80 per cent cut by 2050.

Yet based on a business-as-usual scenario – in which the long-term trend, despite the present recession, is for continued economic growth – analysis presented alongside the Climate Change Principles suggested that confirmed national and local policy measures will no more than stabilise Manchester's emissions at current levels. Further work is needed to establish the precise 1990 baseline for the city and the impact of changes since then, but this is highly unlikely

¹⁰ See <http://www.manchester.gov.uk/downloads/ClimateChangePrinciplesReport.pdf>

to reveal a significant downward trend in emissions. The City Council's Climate Change Principles thus identify the need for concerted and broad-based action, which:

- Involves a **wide range of partner organisations** in direct action to reduce emissions and disseminate best practice, with the Council in a leadership role;
- Enables '**decoupling**' of economic growth from emissions growth;
- Helps to mitigate the practical and financial **consequences to households and businesses** of switching to lower carbon patterns of consumption of energy and other goods;
- Grows Manchester's **skills, expertise and capacity** base in energy and environmental technologies and builds climate change awareness into mainstream learning; and
- Motivates widespread **personal behaviour change** towards lower-impact modes of living.

1.4. Building on solid foundations

A great deal has already been done to raise awareness of climate change issues and take practical action to address them.

Manchester is already home to environmental icons: for example, the CIS tower, home of the Co-operative and since refurbishment in 2005 the largest commercial solar facade in Europe and one of the largest solar power systems in the UK, generating enough electricity to power 75 homes.

The **Manchester Energy Strategy**,¹¹ approved in April 2005 and produced in consultation with partners from across the city's academic, business and community organisations, contained a five-year action plan designed to raise awareness about energy efficiency, improve energy performance of new developments and improve energy performance through procurement. The Strategy provided a strong base from which to develop our thinking on climate change, recognising that a large volume of good work is already underway and that stakeholders from across Manchester are ready to take action to reduce carbon emissions. A number of key achievements have been made since 2005, for example:

- The city's successful annual **Challenge Manchester – 100 Days** campaign¹² has generated a wide base of participation among people and organisations from across the city. In 2008 'climate change clinics' were introduced for the first time to help us gauge how people currently understand climate change, what it means to them in their everyday lives and what support they need to help take the steps towards a low carbon lifestyle.

¹¹ See <http://www.manchester.gov.uk/downloads/ManchesterEnergyStrategy2005-10.pdf>

¹² See <http://www.challengemanchester.co.uk/>

- Over 1,300 businesses have signed up to the **Environmental Business Pledge**,¹³ under which Manchester firms pledge to reduce their environmental impact and improve their local environment, helped by on-site support to realise raw material and energy savings. The scheme has saved over 2,000 tonnes of CO₂ and realised over £500,000 of savings to business together with nearly £6 million in increased sales.
- The Council itself, through the stewardship of its Green City¹⁴ team, has introduced initiatives such as the **Big Turn Off** (to encourage staff to turn off lights and appliances and save energy), created 800 **Green Champions** committed to more sustainable behaviour at work and at home, and introduced a **bike loan scheme** to help staff get around the city in lower-impact ways.
- Across Greater **Manchester the Manchester Is My Planet**¹⁵ initiative has developed a range of innovative low carbon energy projects (see later sections) in partnership with public bodies, universities and business, and signed up over 20,000 people across the conurbation (6,700 of them in the City of Manchester) to play their part in reducing Greater Manchester's greenhouse gas emissions by 20 per cent by 2010. Many of the proposals in this document, particularly with regard to energy, build on and complement work by MIMP to date.
- The **100 Months** Club – named in reference to the period (up to the end of 2015) many people believe are left to begin to cut global greenhouse gas emissions if disastrous climate change is to be averted – was established in early 2008 to enable businesses in Greater Manchester to share strategies for carbon reduction, encourage stronger and tougher tactics for reducing energy use and help Manchester adapt and prepare for a leading role in tackling climate change.

¹³ See http://www.manchester.gov.uk/site/scripts/documents_info.php?categoryID=100002&documentID=3076

¹⁴ See <http://www.manchestergreencity.co.uk>

¹⁵ See <http://www.manchesterismyplanet.com/>

2. Contributing to the Community Strategy: the opportunity of climate change

Climate change is the greatest single problem facing the world, and the urgency of action both to adapt to those changes in the climate that are already inevitable as a result of past decades' carbon emissions and to prevent future emissions cannot be underestimated.

But the City Council believes there is a limit to what can be further achieved through exhorting individuals, families and businesses in Manchester to change their behaviour or make what may be seen as sacrifices or unaffordable financial commitments purely on the grounds of environmental responsibility. Apart from being difficult and even unfair against a backdrop of economic recession and in a city in which more than half of the neighbourhoods are in the most deprived 10 per cent in England,¹⁶ the Council sees this as an inadequate response to a challenge of this scale and importance. Rather, an effective action plan on climate change will be one that:

- Shows how action to reduce carbon emissions also has benefits for **prosperity and quality of life**;
- Ascribes **clear responsibilities** to different levels of government (including nationally and internationally), business and individuals and is clear with people what they are being asked to do, when and why;
- Inspires and enables individuals to **choose lower carbon lifestyles** whilst accepting the responsibility of governments and other organisations to make it easier to do so; and
- Enables us to **measure progress and prioritise** the most important steps to becoming a low carbon, well-adapted city.

Climate change action should be grounded in the values and "three spines" of the **Community Strategy**, *The Mancunian Way*, by addressing the challenges and opportunities of

climate change in pursuit of the goal of a wealthier, happier and more inclusive city. The Council believes there are five key elements to this approach:

- Business, competitiveness and jobs – helping to *drive the performance of the economy of the region and sub-region*;
- *Reaching full potential in education and employment*;
- *Neighbourhoods of choice*;
- A fairer Manchester – contributing to *individual and collective self-esteem and mutual respect*; and
- A higher quality of city life – contributing to *longer, healthier and happier lives*.

Box 2.1: PLaNYC

Manchester City Council aspires to the kind of high-impact, citywide plan that Mayor Michael Bloomberg has initiated in New York City, known as PLaNYC. Mayor Bloomberg says: "It is time to stop debating it and start dealing with it... Now is the time for New Yorkers to rise once again to the challenge of tomorrow... to make a greener, greater NYC... Many call that environmental justice, I simply call it *the right thing to do*."

Launched on Earth Day in April 2007, PLaNYC is described as "the most sweeping plan to enhance New York's urban environment in the city's modern history". A target to reduce New York's citywide carbon emissions by 30 per cent below 2005 levels by 2030 sits alongside other aims including improving the efficient use of land, improving water quality, leveraging major additional investment in public transport, and promoting the development of renewable energy markets through targeted tax abatements for solar energy capture and a series of pilot projects to explore different financial and technical options for bringing renewable energy programmes forward.

¹⁶ Manchester State of the City Report 2007-08. See <http://www.manchesterpartnership.org.uk/>

Since the launch, a raft of measures have been implemented including plans to make New York's taxi fleet fully 'hybrid' fuelled by 2012, introducing biofuel heating for public buildings, opening 69 schoolyards as public recreation spaces, adopting a building code making reflective roofing compulsory, commencing a programme to plant a million trees, and passing a law codifying the city's greenhouse gas emissions targets. See <http://www.nyc.gov/html/planyc2030/html/home/home.shtml>

2.1. Business, competitiveness and jobs

Strong economic growth is the foundation on which Manchester's resurgence has been built. We have embraced globalisation, attracting major international investors and encouraging indigenous businesses to look outward. Investment in new infrastructure such as Metrolink has created the capacity for sustained physical regeneration, and the City's landscape has literally been transformed. The strong partnerships the City Council has sought to establish both with sectors within the City of Manchester and with local authorities across Greater Manchester has contributed a stable environment in which business can invest with confidence. 41,000 jobs have been created in the City and 170,000 across Greater Manchester since 2000.¹⁷ The current economic recession is extremely worrying for Manchester, but the City is better placed as result of the work that has taken place to capitalise when market conditions improve.

Some people believe that a shift to living and working in ways that have a radically lower environmental impact is at odds with further growth in developed economies. The Stern Review, however, argued that while *"emissions have been, and continue to be, driven by economic growth... stabilisation of greenhouse-gas concentrations in the atmosphere is feasible and consistent with continued growth... With strong, deliberate policy choices, it is possible to 'decarbonise'... while maintaining economic growth"*¹⁸

In order to understand better the opportunities and threats of climate change for the Greater Manchester economy, the Association of Greater Manchester Authorities (AGMA) commissioned a study, known as the **Mini-Stern review**, into the economic implications of climate change, and particularly of expected UK and EU climate change legislation, for the Manchester City Region. The study was reported in July 2008 and concluded that:

- **Major changes in the economic and regulatory environment** are underway and are likely to continue, governing carbon trading mechanisms (such as the EU Emissions Trading Scheme), the likely future price of carbon, carbon liability disclosure rules, insurance against climate change risk exposure, carbon accounting for public contracts.
- Under a **"failure to adapt"** scenario – that is, in which Manchester businesses do not adapt adequately to the effects of current and likely future climate change legislation – the cost to the City Region economy could accumulate to £21 billion by 2020. Conversely if Manchester is able to adapt quickly and practically it has the potential to secure a first-mover advantage as a locus for low carbon business.
- Sectors in which Greater Manchester have a significant focus and which are particularly vulnerable to the effects of a changing regulatory and economic environment (in virtue of their energy intensity) include air transport, road transport and distribution, energy intensive manufacturing and textiles. Sectors in which a **decoupling of growth from emissions** is possible or already in evidence include financial and business services, creative and media industries and public services.

¹⁷ ONS; NOMIS employee job estimates by local authority – see www.nomisweb.co.uk

¹⁸ Stern Review of the Economics of Climate Change, 2006; p xi

- The **shift to a lower carbon economy presents opportunities for Manchester** in fostering new environmental technologies, encouraging eco-innovation in existing sectors, cutting input costs (e.g. of energy), improved spatial planning and energy planning.

The City Council agrees that, with coordinated action, Manchester is well-placed to turn essential climate change action to economic advantage by positioning the City Region as an investment location of choice both for environmental businesses and those in other sectors seeking to future-proof against exposure to regulatory and market uncertainty. This means harnessing established Manchester strengths in creating and promoting a positive investment environment alongside new capabilities in delivering and enabling the infrastructure and services to underpin a low carbon economy – for example in energy, transport infrastructure, business support and skills. By bringing these factors together, Manchester can build a brand and reputation for low carbon business and job creation, and continue to grow sustainably in the long term. AGMA is currently developing its response to the findings of the Mini-Stern review. This Call to Action and the work that follows will be an important part of that response.

2.2. Reaching full potential in education and employment

Schools, colleges and higher education institutions have a vital role to play in educating people to recognise and realise the potential of being part of a low carbon city. Young people in particular, can act as ambassadors in influencing and educating the wider community about the need and benefits of adapting their lifestyles and those of their peers.

In addition to the employment opportunities that a low carbon city will bring, residents will come to recognise the corresponding improvement in the quality of their lives and those of family and friends through, for example, improved air

quality, reliable sustainable transport to work and the cultural, leisure and recreation opportunities that are an integral part of any World Class city.

2.3. Neighbourhoods of choice

The creation of neighbourhoods of choice, which attract and retain successful people from diverse communities and in which people feel secure and supported, is one of the three spines of Manchester’s Community Strategy. The City Council is determined to improve the lives of communities across the City and reverse the longstanding trend for people – especially families – to choose to move out of Manchester as their circumstances change.

Evidence from around the world, particularly countries like Denmark and Sweden (see box 2.2), suggests that places that enable people to live **lower carbon lifestyles** – not just by using less energy in the home but by using local shops and facilities, travelling by foot, bike, bus and tram, using public spaces and facilities and getting more involved in local activities – can also be more attractive, popular and socially integrated places.

Box 2.2: Sustainable places

Although no major city anywhere in the world can claim to have all the answers to the challenges posed by climate change, several places stand out for their success in promoting sustainable lifestyles through their approaches to city development and regeneration.

In **Copenhagen**, Denmark – which has been described by one publication as the world’s most liveable city (see <http://www.monocle.com/sections/affairs/Magazine-Articles/Top-25-liveable-cities---01-Copenhagen/>) – careful and sustained investment in the public realm and leadership by senior city figures since the 1960s has created an environment in which

pedestrians coexist happily alongside traffic and in which a third of journeys to work are by bicycle. In a city on a similar latitude to Newcastle upon Tyne there are 260 cafes with pavement tables. By 2012, thanks to major offshore wind farm development, Copenhagen will produce enough renewable energy to power a million homes. Copenhagen is thus a fitting venue for the 2009 UN Climate Change Conference, which is expected to produce a successor to the 1997 Kyoto Protocol (see <http://www.cop15.dk/en>).

Some of the best global examples of sustainable neighbourhood regeneration are in Sweden. **Hammarby Sjostad** (see <http://www.hammarbysjostad.se/>) in Stockholm and **Vastra Hamnen** (Western Harbour; see <http://www.malmo.se/westernharbour>) in Malmo are large-scale regeneration projects aimed at transforming former harbourside industrial areas into new, integrated city neighbourhoods built in accordance with strong sustainability principles. Hammarby aims to reduce overall environmental impact by 50 per cent in comparison with regeneration projects in the 1990s through efficient land use (including high-density, low-rise living), renewable energy and waste-to-energy generation, maximal recycling and exceptional public transport and pedestrian and cycle links to central Stockholm. Western Harbour, which began in 2001 with a 350-apartment 'Expo' of architecture and design, will add around 500 homes a year each year until 2035 in a new mixed city quarter designed in accordance with exceptional environmental standards and community involvement practices. To complement this, the City of Malmo is investing a new rail tunnel under the city centre to reduce journey times between Malmo and Copenhagen across the Oresund Bridge.

Although many developments in the UK set out to be environmentally 'exemplary', few, if any, of significant scale have attained that status in practice. One of the best examples is **New Islington** in Manchester, where good 'green' design measures like efficient building design, gas-fired combined heat and power and enhanced water and waste management form part of a wider plan for a distinctive and sustainable community – one that also has Manchester's best fish and chip shop, interesting local shops and services, an exceptional school and health services, and in which residents share in the success of the community as a whole. (See <http://www.newislington.co.uk>)

The scale and pace of ongoing regeneration in Manchester provides an opportunity to integrate principles of low carbon design and lifestyles alongside the other qualities that have characterised the regeneration of areas like Hulme and east Manchester to date. The opportunity exists to create exemplar regeneration schemes for others and places to follow and to help make sustainable lifestyles attractive rather than forced.

But while sustainable development of new homes and communities presents a major opportunity, the reality is that around two-thirds of the homes Manchester residents will inhabit in 2050 are already built. Because domestic emissions account for around one million tonnes – one third – of Manchester's direct emissions, '**retrofitting**' existing homes to become more energy efficient is arguably the single greatest climate change challenge facing the City. Moreover, it offers strong potential benefits in terms of tackling fuel poverty and developing indigenous business opportunities and supply chains for low carbon products. (See box 2.3 opposite).

Box 2.3: Improving energy efficiency in Manchester's housing stock

The domestic sector is responsible for a third of direct carbon emissions in Manchester. Whilst Building Regulations and the Code for Sustainable Homes provide powerful tools for improving the carbon performance of new buildings, existing housing will still make up approximately two-thirds of the national housing stock by 2050. The Housing Growth Point bid for Manchester changes the proportion slightly but still reinforces the fact that existing housing stock represents the biggest opportunity for reducing emissions from the domestic sector.

It is essential that Manchester develops effective and affordable approaches to improving energy efficiency in existing homes. Several ideas have been tested through pilot projects and the lessons learned will feed into the City's thinking about wider and more comprehensive approaches. This Call to Action comes at an opportune time to rationalise the activities of those involved in domestic carbon reduction activities to ensure that activity is occurring in a joined up and coordinated way that makes best use of the resources available. There are a number of planned and completed projects that provide a strong basis for a coherent approach to reducing carbon emissions from homes. We will start to develop this approach as part of the citywide debate, building on the following examples:

Manchester Eco house (2006- ongoing). The Eco House is a show house created by the City Council's Energy Team, which aims to inform visitors how their household's energy consumption directly impacts on the environment and their finances. The house is made from two combined 1900s terraced properties in Miles Platting, which are classed as 'hard to heat' and is used to describe low carbon lifestyles and physical improvements in a practical, hands-on environment. The Eco House contains

30 displays on energy efficiency, water saving devices, recycling, renewables and the effects of CO₂ emissions. The refurbishment achieved an EcoHomes 'Very Good' rating. 350 people have visited the house since 2006 including the public, schools, private developers, tenants and residents groups. Guided tours are available from the City Council. See http://www.manchester.gov.uk/site/scripts/documents_info.php?categoryID=500017&documentID=3265

Northwards Housing. Northwards Housing is an Arms Length Management Organisation established to manage stock on behalf of the City Council. One of the principal goals for Northwards is to bring existing housing up to the Government's Decent Homes Standard, including the achievement of a "reasonable degree of thermal comfort". In the absence of any more exacting carbon standards to meet and in recognition of the key opportunity to do more for their residents Northwards have completed the following schemes:

Ranby Avenue maisonettes, Charlestown. This scheme involved external improvement works to 12 properties within a maisonette block that was built during the 1950s. The objective was to improve the overall appearance of the properties internally and externally, help improve their energy efficiency performance levels, and bring the properties up to the government's Decent Homes standard. Old boilers were removed and new wall-mounted condensing boilers were fitted together with an upgrade of the heating controls which included thermostatic radiator valves. Photovoltaic (PV) solar panels were installed to light communal areas, and excess electricity is sold back to the National Grid. Funding was obtained from the City Council's Northwards capital budget and Phase 2 of the Low Carbon Building Programme, which funded 50 per cent of the PV panel installation. The total cost, including the panels and new boilers, was £251,000.

Northwards Housing Tower Blocks. Ten tower blocks across north Manchester were retrofitted with a total of 92kWp of photovoltaic panels during 2008 in order to reduce their environmental impact and to save on electricity bills for communal areas. After being commissioned in October 2008, the scheme is estimated to achieve annual CO₂ savings of 42 tonnes per year. Northwards Housing will benefit from the revenue savings on electricity bills and have committed to recycle the money back to residents through future improvement schemes. The total cost of the panels' installation was £499,000, 50 per cent of which was received from Phase 2 of the Low Carbon Building Programme. Salford-based Salix Homes are so inspired by the Northwards scheme that they are intending to undertake their own solar tower project, with early investigations already underway.

Building on the experience from Northwards Housing (see box 2.3) there are opportunities to make cuts in domestic emissions through working with social housing providers. Northwards have demonstrated that, with the appropriate foresight and technical and financial support, cuts in carbon emissions can be achieved with wider social, economic and reputational benefits to tenants and the organisation. A strategic approach to the activities of social housing providers is currently being explored to understand what the scope is for action, how this would fit with current and future investment plans, which physical improvements can be made and how such improvements could be financed.

But intervention in existing neighbourhoods should not be limited to retrofitting homes. Many of the neighbourhoods in which there is the highest concentration of energy-inefficient homes are also those experiencing the highest levels of multiple deprivation and social exclusion. Creating mixed neighbourhoods with better local services should not be the preserve of major regeneration areas, and through interventions such as **Low Carbon Communities** (see section 5.5) the City Council sees an opportunity to combine

reducing carbon emissions with leveraging new investment in the physical and social fabric of existing Manchester communities.

2.4. A fairer Manchester

Globally and locally, there is a strong relationship between incomes and carbon emissions. Better-off countries and people have more energy-intensive lifestyles, and the more affluent a person becomes the more likely they are to spend a marginal increase in income on more energy-intensive consumption choices. This is one reason why increased energy efficiency alone cannot tackle climate change – the savings are often spent in other energy-consuming ways.

But it is the least well-off that have the most constrained choices about their energy consumption: poorer people are much more likely to live in energy-inefficient homes, have limited access to local services which means they need to travel more, and be less able to afford locally-sourced goods that often attract a price premium due to reduced economies of scale compared to the supermarkets. For this reason, rising energy costs are regressive in their distributional impact, leading for example to fuel poverty, which is estimated to affect 3.5 million households in the UK. And, as energy prices increasingly reflect the true costs of atmospheric pollution through carbon pricing (see section 3.2), the risk is of a severe and unfair impact on those who are least able to choose an alternative.

Manchester is committed to several areas of action, which will help to reduce carbon emissions at the same time as **increasing fairness and reducing inequality**. These include:

- **Retrofitting existing homes** for greater energy efficiency;
- **Greening the energy supply** to reduce dependence on fossil fuel energy;

- Supporting investment in a more intensive range of **local services within communities**, and where necessary and possible increasing the number of homes and businesses within an area to ensure such services are sustainable;
- **Expanding and improving public transport**; and
- Increasing **local food production**.

Box 2.4: Supporting sustainable transport in Manchester

In recent years several steps have been taken towards delivering a more sustainable transport system in Manchester.

The **Metrolink hydroelectric** scheme, developed in partnership by Greater Manchester Public Transport Executive (GMPTe), Scottish Energy and Southern Energy, has improved the environmental performance of the Metrolink system by issuing a contract to supply green energy for the traction current that powers the trams and the tram depot. The scheme reduces the carbon footprint of the Metrolink system, combining value for money with better environmental performance, promotes the sustainability credentials of Metrolink to staff and the public, and helps to increase awareness of climate change and the importance of alternative energy sources. By developing a new tendering process, the scheme also allowed GMPTe to introduce an environmental criterion into their procurement process. The competitive criteria were altered to allow weighting for quality of green energy and electronic billing. In 2007 Metrolink became the first tram network in the UK where traction current is supplied entirely through green energy in the form of hydropower.

The **WhizzGo car club** provides a citywide fleet of low-emission cars that are located in designated on-street bays across the city centre, within walking distance of customers. The scheme gives city centre residents and workers ready access to a car without the need to own one (generally resulting in much lower costs to the customer than car ownership). The City Council supports the scheme in-kind with parking spaces, recognising its effectiveness in delivering modal shift and reducing congestion. The club currently has 500 members. See http://www.whizzgo.co.uk/Manchester_Location.htm

The **Green Badge parking scheme**, launched in 2006, was devised by *Manchester Is My Planet* and is operated across Greater Manchester by local authorities and NCP car parks. The scheme is the first of its kind and is designed to encourage the uptake of low-emissions vehicles. Season ticket holders with the lowest-emissions cars are offered a 25 per cent discount on the annual cost of parking in Manchester City Centre. The scheme was a winner at the Low Carbon Road Transport Challenge in 2006. See http://www.manchester.gov.uk/site/scripts/documents_info.php?categoryID=500117&documentID=3835

Creating a city connected by a variety of safe, reliable and affordable sustainable transport options is integral to achieving the necessary reductions in citywide carbon emissions. This will also realise the economic potential of the City and ensure that residents, employees and visitors are able to access employment centres and the various opportunities for culture, recreation and leisure. Following the outcome of the Transport Innovation Fund referendum, the City Council and its partners will need to consider the options for delivering the necessary sustainable transport infrastructure that Manchester and the City-region require.

The City Council wants residents to feel inspired and enabled to realise the benefits of living lower carbon lifestyles. Action labelled as 'climate change' will not elicit the change in behaviours and lifestyle choices that will help to establish Manchester as a low carbon city. We want our residents to recognise that through measures such as sustainable transport infrastructure, energy-efficient housing and low carbon energy supplies, they will benefit directly through improved access to services and amenities, lower fuel bills and through living in thriving neighbourhoods that they and their community can be proud of.

2.5. A higher quality of city life

Although economic, physical and infrastructure solutions will play a large part in helping to reduce carbon emissions and adapt to climate change, the key to moving towards a lower carbon society in Manchester is that **people choose lifestyles that are more sustainable** – and that they are helped to do so by the way the City is shaped. 'Behaviour change' over and above what can be enabled through physical and technological improvements is likely to account for at least 20 per cent of the emissions cut Manchester will need to make by 2050.

However, the City Council believes that many of the actions Manchester could take to help residents to choose lower impact ways of living will also serve to enhance quality of life in the city and across the conurbation. For instance:

- Enabling people to spend more of their leisure time in active pursuits – sport, exercise, cultural activities or simply out-and-about in the city – demands both **the highest quality of 'formal' facilities and an exceptional public realm**: streets, squares and parks that are attractive to use and spend time in, and which are safe for all residents and visitors because they are well-used. Such lifestyles also lead to improved health outcomes;

- Asking people to move around the city and conurbation in lower-impact ways entails that we invest in **sustainable transport infrastructure** that will also help to reduce congestion and improve both air quality and productivity; and
- Because of the impact of inevitable climate change in increasing temperatures and the frequency of extreme weather events (see box 2.5 below), we need literally to **'green' the city** – which also improves amenity and aesthetic value and helps make walking and cycling more attractive.

Box 2.5: Adapting to inevitable climate change

Past greenhouse gas emissions, together with inertia in the climate, mean that climate change of up to two degrees of global warming may already be inevitable: stabilising carbon emissions now would still result in some climate change. Research led by the University of Manchester (see <http://www.sed.man.ac.uk/research/cure/research/asccue/>) suggests that we should prepare for warmer wetter winters, hotter drier summers and more periods of extreme heat and intense rainfall. The potential consequences of these changes include:

- A deepening **urban heat island** effect;
- Increasing stress on **city infrastructure** – for example, on public transport if it becomes unpleasant in heat or is disabled by more violent winter storms;
- Possible **water supply** stress – perhaps not as much of a problem in Manchester as for some cities, but still with the effects of hotter drier summers and intense winter rainfall that can't soak in, despite the climate getting wetter overall;
- Increased risk of **flooding**;

- Potential **food security** risks – global food production will be affected by a changing climate, as well as having to compete for land with energy crops and absorb increasing energy prices; and
- Potentially large-scale **migration** to more temperate places as some of the worst affected places become increasingly difficult to inhabit.

The only option is to ensure that Manchester is prepared and that we make adequate investments in the appropriate infrastructure to safeguard a high quality of life in a changed climate. This could include

- Ensuring against development with poor adaptive qualities – for example in flood plain;
- Implementing a continuous productive urban landscape – literally, “greening” the city – by combining the urban green grid (for walking, cycling and biodiversity) with the principles of urban agriculture and innovative use of space (green roofs, green bridges) to create a citywide response to the problems of urban heat island, urban drainage and food security;
- Retrofitting **passive cooling** systems to buildings and streets – such as reflective roofs and street shading; and
- Getting people involved in **greening city spaces** in their neighbourhoods – for example by planting a number of trees every year.

The manifestation of this Call to Action and Manchester’s ongoing work on climate change will be longer, healthier and happier lives for our residents. Messages around low carbon, climate adaptable lifestyles will be mutually self-reinforcing and will be spread from one resident to another, so that communities and neighbourhoods around the City can share in the benefits.

In summary, the City Council believes that action to combat and adapt to climate change is integral to realising the vision of success described by the Community Strategy. The benefits of ‘climate change action’ will indeed be cross-cutting and become embedded in the way that Manchester does business and its residents live their everyday lives. However, change of the magnitude needed cannot happen over night and this Call to Action is therefore part of a longer but already underway process to establish Manchester as a low carbon city by 2020. This is the basis for the City Council’s proposals for specific early action described in section 5.

Given the many different and potentially overlapping levels of government and different audiences across the City, Manchester also needs to be clear how it can best focus action within the City where the impact will be greatest. This is the subject of section 3.

3. A framework for climate change action in Manchester

Realising the upside of climate change for Manchester and making deep cuts in the city's carbon emissions demands a robust framework for action which:

- Demonstrates a credible route map to achieving steady reductions across the **'big ticket' causes** of carbon emissions: energy use in the built environment for warmth and light; transport and the way people move around the City; methods of construction; and production and consumption of food, services and consumer goods and;
- Ascribes **clear responsibilities of leadership** to different places, from international to neighbourhood and across public, private and voluntary sectors.

Box 3.1: Delivering energy transformation

The area of energy efficiency, generation and demand reduction is a good example of the complexity of policy and delivery frameworks for generating emissions reductions. Encouraging people to use less energy, enabling them to use what they need more efficiently, and generating it from very low carbon and renewable sources, is an essential element of a serious response to climate change. However, the issues and choices can appear extremely confusing to organisations and individuals alike – although the overall message, that people should seek to reduce their energy use, is clear.

Technology and know-how in both efficiency and generation is evolving rapidly and becoming viable in an increasing number of situations. However, the best technical solution is highly dependent on an array of conditions. Whether and how a building can be retrofitted depends on how it was originally constructed. There are grants available to homeowners for energy-efficiency improvements, but take-up is modest given the financial benefits conferred and there is currently no compulsion to homeowners (or landlords) to meet

exacting efficiency standards when they make home improvements. Generally speaking there are economies of scale in power generation, but at higher densities and with certain use mixes localised solutions such as combined heat and power (CHP) are often a better choice. Microgeneration is not widely considered viable in the UK, but if the Government delivers its commitment to introduce a feed-in tariff (a mandatory premium paid to generators for excess energy fed into the grid) at the kind of level seen in Germany, it could alter the economics of microgeneration significantly. At the same time, innovations such as Energy Service Companies (ESCOs) both for individual new developments and whole communities, some backed by major utilities and some in competition with them, are becoming more commonplace.

Manchester is pioneering two major projects to help improve overall energy planning, with an emphasis on information to consumers. Funding of £2.25m has been obtained from the Energy Saving Trust to run an Advice Centre (ESTAC) across Greater Manchester offering advice and support to residents in delivering energy demand and carbon emissions reductions from energy use. The ESTAC will focus on cost-effectiveness and producing carbon savings from segments of the domestic market that consume the most energy. A major part of the work of the ESTAC will be to identify hotspot areas in GM where there are high carbon saving available and to focus attention on households in these areas to encourage engagement and uptake of measures. The project will also assist in securing grants and other inward investment, work to establish and grow energy products and services supply chains in the local area and support local authorities in delivering emissions reductions. Manchester is also participating in the PEPSEEC initiative to develop energy planning in partnership with other European cities (see box 3.4).

3.1. Spatial levels of action

The reality of humankind’s evolving response to the threat and opportunity of climate change is that a clear system of coordination is not yet in place. But the City Council believes that a broad set of roles and responsibilities can be defined which in turn help Manchester leaders and citizens to understand the scope of their own influence and identify priorities for action (see box 3.2). Only with the right action at all these levels can a comprehensive response to the challenge of climate change be realised.

Box 3.2: Responsibilities at different levels of governance

	Institutions	Key areas of responsibility
International	<p>National governments via intergovernmental agreements and treaties</p> <p>European Union</p> <p>United Nations</p>	<ul style="list-style-type: none"> • Correcting the “greatest market failure the world has ever seen” by establishing a fair and efficient system for pricing and trading carbon across international borders, creating a robust market-driven incentive not to pollute (including for globalised industries such as aviation and shipping). • Establishing appropriate institutions for regulating international agreements and mechanisms (such as carbon cap and trading) and facilitating the spread of best practice among nations and cities.
National	<p>Parliament</p> <p>Government departments and agencies (e.g. DEFRA, Department for Energy and Climate Change, Communities and Local Government, Homes and Communities Agency, CABE)</p>	<ul style="list-style-type: none"> • Using national regulatory and policy standards and guidance – for example in the planning and building systems and the regulation of utilities – to establish a transparent and level playing field in which high standards are established, applied and steadily increased as appropriate. • Creating a fiscal framework (taxation and tax incentives) that accelerates behaviour change, for example by increasing the proportion of Exchequer revenues that are raised by taxing directly and indirectly polluting goods and services; through the promotion of investment in public transport. • Directing mainstream national resources for public services, economic development and regeneration towards investment in resilient low carbon infrastructure, patterns of services delivery and encouraging behaviour change.

	Institutions	Key areas of responsibility
Region	North West Development Agency 4NW	<ul style="list-style-type: none"> Establishing a framework for cohesive sustainable settlement patterns and economic development through the Regional Spatial Strategy. Ensuring Regional Funding Allocations and European Regional Development Funds (ERDF) are targeted to the right investments in low-carbon economic development.
City-region	AGMA and its Commissions and agencies	<ul style="list-style-type: none"> Developing and aligning Greater Manchester's offer to and capacity for low carbon and environmental business, including positioning Greater Manchester globally as a low-carbon investment location of choice for businesses in all major growth sectors. Developing strategic infrastructure to support resilience to climate change and to the effects of changing carbon economics, with a particular focus on ensuring Greater Manchester has an 'armature' of sustainable transport and utilities – energy, water and waste – infrastructure to support a shift to lower-impact living and working in every part of Greater Manchester. Co-ordinating land-use planning to ensure that patterns of development reinforce established centres, create mixed communities in which people can meet most of their daily needs without needing to travel, and avoid the creation of car-bound sprawl.
City/local	City Council and Public Service Board partners	<ul style="list-style-type: none"> Co-ordinating local place-based interventions: social and physical regeneration, retrofitting existing homes and businesses, adaptation measures – so creating urban resilience and flexibility. Educating communities to understand the value of place, be aware of their individual influence and to create a sense of caring and ownership for their community. Removing barriers to lifestyle change – through city design and planning, community engagement and empowerment, and with clear information to individuals and businesses about what they are being asked to do and how local government is helping. Providing political and practical leadership and creating a culture of municipal enterprise in which the public sector sets a dynamic example for the private sector and individual citizens to follow.

3.2 Influencing action at a wider level

There are many important parts of global climate change action that the Council and its partners cannot determine, but which we can and must influence. It is legitimate for Manchester to set out its views on the specific priorities for action internationally, nationally, regionally and across the conurbation as well as within the City itself. The City Council has identified three priorities for influence outside the City.

First, the City Council supports the swift introduction of a **comprehensive international market in carbon incorporating emissions from aviation and shipping**.

We believe this is the principal means of establishing robust incentives and rewards for moving towards a low carbon economy and society, including the development of new technology, and a level playing field for countries, cities and businesses around the world. Without this, it is likely that many individual countries and cities will continue to define their interests in business-as-usual terms and so make only limited inroads into carbon emissions.

The City Council will work with its partners, particularly in AGMA, and through all appropriate national and international channels to advocate the establishment of an effective system. It will also support efforts at Greater Manchester level to develop the City's base in carbon market activity, with a particular focus on the role of Manchester City Centre as a location of choice for carbon trading businesses and their supply chains.

Box 3.3: Creating a carbon market

The Stern Review of the Economics of Climate Change (2006) concluded that climate change requires “international collective action... [for] an effective, efficient and equitable response on the scale required” and that response “should be based on three essential elements: carbon pricing, technology policy, and removal of barriers to behavioural change.” In particular, “[e]stablishing a carbon price, through tax, trading or regulation, is an essential foundation for climate change policy”.

“Carbon pricing” in practice means the establishment of a market in carbon by capping the level of emissions allowed and trading allowances or permits internationally between government, firms and people – those unable to live within their budget buying permits from those who can. As a market-based solution, carbon pricing is widely seen as preferable to taxation or regulation.

Carbon pricing is an important and useful concept for Manchester because, even if it takes many years to implement at a global scale, it illustrates how climate change can and most likely will be addressed as an economic issue. The price premium for carbon exposure, if sufficiently high to deal with the problem, will also be sufficiently high to make many ways of reducing it viable and attractive and make “low carbon advantage” competitively valuable to businesses and cities. Taken alongside Stern's two other primary drivers of climate change action – technology policy and behaviour change – this puts cities such as Manchester in a position of serious influence and potential competitive advantage.

In a world in which carbon emissions are effectively limited by cap-and-trade, taxation or regulation, **carbon will become a new form of currency**. This theme has been taken up by climate activists and business alike:

- The Centre for Alternative Technology argues that “[b]y redirecting Adam Smith’s invisible hand to take account of the threat of climate change, we can use the efficiencies of the market to our collective advantage. Mainstream economics stresses that the efficient exchange and use of resources is only maintained through the price mechanism in a free market. A carbon permit scheme will involve millions of people making rational decisions, using their own personal knowledge and preferences, to establish the correct price for carbon to achieve the reductions required” (*Zero Carbon Britain: an alternative energy strategy*, CAT).
- A report for the CBI calls for “a shift to a world where carbon becomes a new currency – so that consumers and businesses are rewarded for making the right choices. Carbon has to be priced according to supply and demand, under a system which leads to lower emissions, crosses national borders, and rewards good behaviour” (“*Climate change: everyone’s business*”, McKinsey for CBI climate change taskforce, 2007).

Implementing such a scheme will not be easy and demands international collective action. Early-stage cap-and-trade schemes established under the Kyoto Protocol, including the EU Emissions Trading Scheme established in 2003, follow these principles but generally allow too high an overall cap on emissions to have a serious impact. At the right level an overall cap on emissions will drive the change in behaviour and investment in alternatives that is needed, as well as redress the generous allowances for particularly carbon-intensive industries that are currently included. However, the growth of the carbon market also offers opportunities, and Manchester Enterprises has commissioned a study into the potential for business development around carbon trading sectors in Manchester.

Second, the City Council supports the accelerated development of **consistent and transparent national policies** commensurate with the Government’s target to reduce carbon emissions by 80 per cent by 2050 on 1990 levels. Even with a comprehensive carbon market in place it is likely that further fiscal and regulatory incentives will be needed and it will be better if these are signalled early, providing clarity and certainty for businesses and citizens and a level playing field across the country. Such changes are likely to need to include challenging measures such as asking private homeowners to adopt energy efficiency improvements and tightening planning policy guidance to compel higher standards across the full range of the carbon footprint of development (not just built environment energy standards). But these can also be counterbalanced by incentives such as the adoption of a feed-in tariff for renewable energy schemes at rates that provide clear and unambiguous market signals, as in Germany. The City Council will actively look to pilot policy changes where doing so would not put the City at a competitive disadvantage.

Box 3.4: Energy planning – working with European cities

The oil crises of the 1970s drove a variety of responses by international governments looking to establish secure supplies of energy to their countries. Moves towards a reduced reliance on foreign suppliers of oil and gas saw the UK develop the 1979 Marshall heat plan for the development of CHP; in 1976 Denmark introduced oil taxes and provided greater flexibility on fuel choice; and the French Government chose to develop their nuclear energy capacity. Security of supply is now even more critical than in the 1970s as a growing population relies increasingly on foreign supplies. This, coupled with the need to reduce carbon emissions, provide the two key drivers for the need to plan where and how energy is produced, priorities also described by the UK Energy Strategy.

Manchester is part of a Greater Manchester team working with partners from Sweden, Spain, Greece, Poland and Italy to develop energy plans for each of the participating partner cities. **PEPESEC (Partnership Energy Planning as a tool for Realising European Sustainable Energy Communities – www.pepesecc.eu)** will enable partners to develop energy plans at a quicker rate and to a higher standard than would be possible otherwise. The City of Malmö, Sweden, with 10 years' experience, is acting as an expert energy planner to guide the cities and maximise the quality of the plans that are produced.

An energy plan describes how energy is supplied, distributed and used within a defined area and covers all types of energy needs. The plan is developed with the involvement of groups within the community that are integral to its delivery i.e. residents and community groups through to businesses and utility companies and establishes a vision with measurable targets for its successful implementation. Manchester's involvement in PEPESEC was driven by several issues, including the need to review and update the Manchester Energy Strategy (2005-10), the need to align our energy and climate change activities with the aim to be World Class by 2015 and in recognition of the fact that a large volume of excellent and relevant work is already underway across Europe that we could benefit from capturing and understanding.

The process and content of an energy plan are very similar to that described by this Call to Action. Participation in PEPESEC will enable Manchester to learn from best practice in carbon reduction activities from across Europe and integrate these where appropriate into our own activities.

Thirdly the City Council believes that **international cities** that are major economic and population centres but not large enough to be members of the C40 (see box 1.3) need to work more closely together to exchange best practice in low carbon development. This joint working should specifically be in (i) infrastructure development, (ii) procurement, (iii) regeneration and spatial planning and (iv) low carbon economic development. Manchester already benefits from dialogue through the Eurocities group and through participation in projects like PEPESEC (see box 3.4), but believes there would be a particular benefit to larger cities with particularly strong international business links – such as Manchester, Lyon, Barcelona, and Frankfurt – working even more closely to understand the opportunities and threats of climate change and influence national and international policy. The City Council will actively support the work of the AGMA Environment Commission in ensuring that Manchester learns to the fullest from other cities' experiences.

4. Building strategic capacity for climate change action in Manchester

Against the framework set out in section 3, the City Council's focus is on what Manchester can do as a city of over 450,000 people, a conurbation of 2.5 million, a regional centre and as a major business location. In recognition of the shift from business-as-usual that is required, we need to understand how we can build strategic capacity across Manchester's leaders, businesses, institutions, public services, opinion-formers, charities, families and individual residents to make action on climate change a mainstream part of City life. This mainstreaming will be built on a shared understanding of the benefits of successfully taking action on climate change.

In this respect, climate change today can be compared with regeneration a decade ago: a major challenge facing the City, which – through strong leadership, concerted effort and patience and bolstered by steady, practical achievements – has become a hallmark of Manchester at home and abroad.

4.1. Strengthening capacity across Greater Manchester

Greenhouse gas emissions are ultimately a by-product of economic activity: production, consumption and transaction. This means that there is strong causality or 'coupling' of Manchester's economic structure, its urban geography and its carbon footprint. Therefore, as with our economic interdependence, the carbon footprint of the City of Manchester cannot be considered in isolation from that of the wider Greater Manchester conurbation. Moreover there are significant economies of scale to be realised from addressing major place-based causes of carbon emissions across the Greater Manchester area rather than within individual authority areas; for example, becoming a more compact city with shorter journey times through more people living near where they work.

For these reasons, Manchester City Council has backed the establishment of strong sub-regional institutions to provide leadership across Greater Manchester on climate change action. The Association of Greater Manchester Authorities

(AGMA) has established an Environment Commission (one of six strategic commissions) to oversee the existing Waste Development Agency and the establishment of a new Climate Change Agency (CCA) which will be launched later in 2009.

The establishment of the **Climate Change Agency** is critical if Manchester is to develop a compelling and sustained programme of action on climate change. The Agency cannot and should not seek to substitute for delivery capacity within individual authorities in their established areas of competence. However, given the scale of the opportunity for Manchester in enhancing competitiveness and other upside benefits from tackling climate change, it is essential that the Agency has the leadership and capacity to take forward a wide-ranging clearly-defined programme of action in its own right. The purpose of the Agency is defined as:

The Greater Manchester Climate Change Agency is the City-region's business, public and third sector partnership, contributing towards economic advantage and prosperity by:

- 1 Delivering carbon reductions, and
- 2 Responding to the impacts of climate change

In achieving these dual purposes the City Council believes that the remit of the CCA should help in:

- The development of **low carbon and renewable energy infrastructure**, with the specific aim of ensuring that Greater Manchester is able to generate 30 per cent of its energy needs from zero-carbon sources by 2020 without recourse to nuclear power. The Agency should become a centre of knowledge and a 'clearing house' for ideas, funding and public-private partnerships dealing in all aspects of energy efficiency, generation and use (reflecting the fact that a rich mix of solutions will be needed to hit tough targets);

- The concentration of expertise (and interface with external experts) in **low carbon economic, physical and social development**, providing a resource to Greater Manchester's other Commissions and agencies and member authorities on the climate change issues, implications and best practice in economic development, spatial planning, transport, service delivery (including health and education) and engagement and ensuring full integration of climate change considerations within other spheres of work. For example the CCA would be expected to provide expert advice to the Economic Development Commission on the development of new environmentally-oriented businesses and possibilities for eco-innovation;
- Leadership of Manchester's **national and international advocacy** for the creation of carbon markets and the establishment of national and regional policy frameworks supportive of Manchester's resilience and competitiveness in a climate change context;
- Assembling and attracting **funding** for major **low carbon** investment from a range of sources (see section 4.3) and promoting a co-ordinated approach to climate change investment across the public and private sectors in Greater Manchester; and
- Assisting in **visualisation and scenario-planning** for Manchester in a climate-changed world, supporting both mitigation and adaptation planning by helping to articulate what Manchester could or would be like in 2050 under different climate scenarios.

In the City Council's view, ensuring the CCA has adequate resources to build this leadership capacity, together with the broadest possible base of support and consent among AGMA authorities and their partners to do so, is a critical aspect of putting in place now the governance architecture that will serve Greater Manchester's needs for years to come.

4.2. Delivering climate change action in the City of Manchester

The City Council's role in climate change, as in other aspects of city life, is to convene and coordinate the efforts and activities of people and organisations across Manchester behind a clear vision. It has always been a core part of the Council's and the Manchester Partnership's (our Local Strategic Partnership) approach to seek to create a platform of strong leadership, understanding of the concerns of business and families, and a stable and certain political and regulatory environment which enables others to act. This has underpinned our success in economic and social regeneration and is the overarching approach we propose to take to climate change action.

As such the City Council recognises that the focus, ambition and ultimate success of Manchester's climate change activity can only be as strong as the partnerships that exist to support and deliver it. As with the other priorities identified in the Community Strategy the City Council cannot achieve its ambitious climate change objectives in isolation. Climate change activity will therefore be strongly supported by the Manchester Partnership, which is made up of a wide range of partners, committed to realising the vision of success that Manchester's residents, public, private and third sectors, aspire to.

Within this context, the City Council has identified five areas that it sees as key to creating a broad base of support for action on climate change.

- 1 Getting our own house in order. Research by Ipsos Mori¹⁹ into the public perceptions of climate change has shown that one of the biggest barriers to people changing their behaviour is the feeling that others are not changing theirs – "a sense of collective action is fundamental", and more than half of people say that they would do more if others did as well. The Local Government Performance Framework now requires local authorities to report annually

¹⁹ "Leading or Following" presentation based on "Tipping Point or Turning Point"; Ipsos Mori

on the CO₂ emissions from their operations and to put a plan in place describing how emissions will be reduced, year on year. Work is currently underway to identify the sources of the City Council's own carbon emissions and to understand what impact the activities already underway and planned will have on reducing our carbon footprint.

We will report the City Council's carbon emissions for the first time in 2009 and will demonstrate to the Audit Commission that practical action is already underway. Automatic meter reading already enables us to target our most energy-consuming buildings, whilst programmes such as the Big Turn Off and Green Champions encourage employees to take practical steps to reduce the impact of their activities at work. Now the City Council and its public service partners need to realise deeper reductions together with the financial, reputational and operational benefits they might bring. In addition to reporting CO₂ emissions we will set defined carbon reduction targets and encourage our partners to do the same.

Box 4.1: Melbourne City Council's Zero Net Emissions target

The City Council of Melbourne, Australia has set a target of "Zero Net Emissions by 2020" and has identified three main strategies for achieving it. First, in improved building design (new and existing); second, in the use of renewable energy; third, through sequestration of carbon from the atmosphere through tree planting, which also improves the quality of the local environment in the city. The Council's action plan tries to maintain this hierarchy in all that it does. Initially, this framework excluded services that the Council outsources but those will be included in its reporting post-2010.

2 Promoting business and the city centre. Within the City of Manchester and the wider City-region, the regional centre of Manchester City Centre has a special and specific role to play as the focal point for growth in high-value, knowledge intensive businesses, and a concentration of higher education institutions and the innovative capacity they bring. If Greater Manchester is to grow a base in environmental and wider 'climate-conscious' businesses, taking full advantage of the next economic upturn, we need to ensure that the City Centre is shaped to reflect and support that ambition. Over the next 20 years, existing and new interventions will help to transform the City Centre into an even more accessible, pedestrian-friendly, dynamic environment and to future-proof it against the impacts of inevitable climate change. Conurbation-wide investment in energy, waste and digital infrastructure will help to hardwire the City Centre for low carbon business. As a first step the City Council will look to develop relationships and projects with trailblazing businesses and property owners keen to demonstrate what can be achieved.

3 Physical development and regeneration. Physical regeneration is an essential feature of the Manchester story of the past 20 years and because of the critical role of places in shaping lifestyle choices and social outcomes, continued regeneration will also be a central part of Manchester's response to climate change. The City Council has commissioned a study to analyse the potential for a truly sustainable property sector in Manchester and to develop, in conjunction with major actors in the Manchester property sector, a vision for the future of the sector. This will address the changing regulatory environment for property development and identify strategic opportunities and threats against the backdrop of a changing economic and policy framework. The study will put forward the recommended major steps that might be taken in Manchester to develop competitive advantage in the property sector.

4 Engaging Manchester residents in climate change action. Contrary to some other areas of policy, the hardest-to-reach groups in motivating low carbon behaviour change do not tend to be the poorest (who most urgently need to help to tackle fuel poverty and improve access to services) but the better-off whose lifestyles are, by choice, often more carbon-intensive (see section 2.4). Perceptions of climate change and the role of individuals and families in action to tackle it segment across sections of the population, with behavioural norms creating barriers to change even where there are financial or other incentives to do so. Messages to different groups therefore need to be strongly tailored, within a consistent set of overall principles.

So Manchester needs to build a coalition for action on climate change that involves, enables and provides inspiration for people from all walks of Manchester life. The role of individuals as ambassadors for positive change is key because of their ability to spread mutually reinforcing and locally relevant messages to friends, family and the wider community. Climate change action cannot be ultimately driven by altruistic ideals or a sense of obligation nor can it be delivered solely by the City Council and its partners. Manchester residents will need to understand the benefits of 'climate change action' and spread their understanding to their peers, thereby helping to drive a community-based shift to low carbon behaviours and attitudes.

Throughout 2009 the City Council will be running "Proud of Manchester", focusing on life in Manchester and enabling residents to make the most of the opportunities available to them, including the opportunity to improve the quality of their lives and those of their friends, families and their wider communities. This new campaign will provide a platform for dialogue between the City Council and residents to help us to understand people's circumstances, their understanding of climate change and the potential motivations that will, in time, elicit a shift to low carbon choices and behaviours.

Box 4.2: Third sector activity

The voluntary and community sector has played a prominent role in Manchester's work on climate change to date, particularly in motivating behaviour change at the local level. This vital work must continue, and where possible expand, as the wider Climate Change Action Plan for Manchester is produced and implemented.

The **Environment Network for Manchester** (EN4M) is a collective of more than 30 groups and organisations working to improve the environment of Manchester and help to create a truly sustainable city. Its members are involved in a wide range of activities and issues, from conservation, renewable energy, sustainable transport and pollution, to parks and open spaces, recycling and growing organic food. Larger citywide organisations work alongside smaller and locally-focused groups to build capacity, give representation and collective voice. The Network is also able to influence public sector policies and activities, build partnerships, share resources and skills, raise awareness of environmental issues among the general public and provide information by acting as central point of access to information, advice and original research. See <http://www.en4m.org.uk/>

Action for Sustainable Living (AfSL) is a dynamic charity based in Manchester. Its focus is on engaging people in lifestyle change for sustainable living in the areas of, for instance: recycling, waste, clothing, energy, fair-trade, gardening, holidays, household consumption, local food and transport. AfSL aims to help people to live more sustainably by focusing on the small steps we can each take in our daily lives towards achieving bigger changes in the wider world. See <http://www.afsl.org.uk/>

The **Sustainable Neighbourhoods Pool** is the 'Shadow Cabinet' for the Sustainable Neighbourhoods Partnership (SNP), which is part of the Manchester Partnership. The Pool meets every quarter to discuss consultations and strategies that are live at Manchester City Council. Information is then fed back to the SNP Board and the Pool participates at the SNP Forum. See <http://www.manchesterpartnership.org.uk/3152/pages/sustainable-neighbourhoods.aspx>

- 5 Mainstreaming climate change action into services. The City Council and its partners need to work out together how best to ensure that climate change action becomes an everyday part of the way we deliver services to Manchester residents. This might encompass everything from major investment decisions (such as how and where we locate service centres to reduce the need to travel unnecessarily and support mixed communities) to making climate consciousness a basic cultural value; a feature of the way staff approach their work. Services such as the NHS, Jobcentre Plus and others all follow sustainability guidance that is issued nationally.

The question is whether we can collectively identify a totemic and distinctively Manchester approach that brings added benefits to services whilst further cutting environmental impact and without duplicating effort or placing additional and distracting demands on service providers. The City Council will pursue this with partners through the Manchester Partnership and Public Service Board with a view to developing an action plan for mainstreaming climate change action through public services.

Box 4.3: Buying better

Across its mainstream services, Manchester City Council spends around £600 million in revenue and around £250 million in capital each year on procurement. The Council is drawing up a new policy on sustainable procurement, which recognises that it has a vital role in furthering sustainable development through its procurement of buildings, goods, and services. The policy currently aims to satisfy the following objectives:

- Accessing products and services locally where appropriate to minimise the environmental impact associated with transport and to support the local economy;
- Considering the environmental performance of all suppliers and contractors, and encouraging them to conduct their operations in an environmentally sensitive manner;
- Maximising the use of recycled products and products derived from reclaimed materials and prioritising products which take steps to minimise packaging, contributing to waste reduction;
- Considering a basic life-cycle analysis of products to minimise pollution and the adverse effects on the environment resulting directly or indirectly from products;
- Ensuring that the procurement process is accessible to small and medium sized enterprises, local suppliers and the voluntary sector and that they are encouraged to bid for the Council's business;
- Ensuring all procurement contracts and tenders contain sustainability specifications as appropriate to the product or service being procured; and
- Training procurement staff on sustainability considerations and providing ongoing support.

Action in these five areas, together with that taken at other levels, will help to create a framework of resilience and preparedness for Manchester in the face of climate change. This emphasis on mainstreaming climate change action into everything we do avoids the ineffectual option of 'bolting on' climate change-specific policies and recognises that the appropriate, Manchester-specific response to climate change can have wider benefits that support our objectives for social and economic regeneration.

However, to ensure that this results in meaningful and concerted action on the part of the City Council, it is important that capacity is in place to ensure that action happens. To assist in this:

- The City Council will appoint a new **Head of Environmental Strategy** with responsibility for delivering the City Council's agenda for climate change action, supported by new and reconfigured resource capacity; and
- The Council will establish a permanent **Environmental Strategy Programme Board** of senior officers drawn from economic development, procurement, planning, regeneration, housing, adult and children's services and other areas to drive implementation of the agreed Climate Change Call to Action and ensuing Action Plan.

4.3. Funding climate change action

As with all plans, delivering action on climate change and building confidence among citizens and businesses in a comprehensive plan requires a clear funding strategy. This will evolve during 2009, and the City Council has identified several important factors to consider.

Both the Stern Review for the Government and the Manchester Mini-Stern identify significant economic costs to the business-as-usual scenario. Greater Manchester could lose up to £21bn over the next 12 years as failure to adapt leaves Manchester businesses and citizens exposed to rising costs of carbon and lost business opportunities. This implies a **case for directing significant investment at climate mitigation and adaptation** within Manchester, including a substantial level of 'sunk' investment (i.e. that which does not yield a direct financial return to the investor). This does not necessarily mean public sector spending – some of the costs might fall directly on the private sector, organisations and individuals, as will many of the benefits.

There is now widespread recognition of the need to **increase the level and rate of investment in built-environment energy efficiency and renewable energy** – this is a central focus of the UK Climate Change Committee First Report. The Government has recently announced a further £910 million to be channelled from energy companies into energy-saving initiatives, such as providing loft insulation and cavity wall insulation free of charge to elderly and low-income households and at a 50 per cent discount to others. This will be on top of a wide range of existing grants and incentives, created with the aim to ensure all homes receive a low carbon retrofit by 2020. The City Council and its partners have a key role to play in supporting awareness and take-up of these measures. However, it is unlikely that additional resources will be made available to local authorities (whether through grant funding or other fiscal mechanisms) in the foreseeable future to enable greater discretionary investment in energy and climate change action locally.

There are several ways in which, against this backdrop, Manchester can assemble and attract funding for climate change action.

- The first is through integrating funding available from a range of existing sources, including EU programmes like CONCERTO and JESSICA,²⁰ UK bodies such as the Energy Saving Trust and the Carbon Trust, schemes such as the Low Carbon Buildings Programme and Energy Transformation Fund, regional funding (NWDA single programme and ERDF), established financing tools such as the City's prudential borrowing regime and, most importantly, investment from the private sector both independently and through public-private partnerships and planning contributions.
- Because one of the upside benefits of upfront investment in low carbon outcomes is long-term energy cost savings, innovative new models are emerging for financing low carbon infrastructure. These include Energy Service Companies (ESCOs, see section 5.4) and green mortgages (which enable people to add the cost of improving energy efficiency to their mortgages). The City Council can also expect higher standards in terms of design and finance for climate change via the joint ventures and partnerships, through which it routinely pursues regeneration and development with its landholdings.
- In addition, Manchester knows from experience that a willingness to strike out with bold leadership and challenging commitments can help to lever additional investment, public and private – as happened when Manchester's successful bid to host the Commonwealth Games in 2002 created in Sportcity an anchor for environmental, social and economic regeneration in East Manchester.

Collectively, these add up to a strong suite of financial tools. However, should the City Council perceive a specific block to realising sensible investment in shifting to a low carbon economy and society, which could be addressed by additional financial powers or freedoms, it will not hesitate to make the case for them to the Government and other partners.

In addition, to help explore specific opportunities for innovation in low carbon, at the time it published its Climate Change Principles the City Council also made available a **£1 million Carbon Reduction Innovation and Investment Fund**. The City Council intends to deploy resources from the Fund to help explore options for delivering major public-private investment in energy efficiency low carbon energy infrastructure, including a possible Manchester ESCO (see section 5.4). It is envisaged that funding will also be made available to support a proposed Low Carbon Communities pilot (see section 5.5) and range of other activities that demonstrate different approaches to realising the benefits of shifting to low carbon. The City Council is also considering the potential for using part of the Innovation Fund, topped up as appropriate, to work with business and others to help establish a new Foundation bringing together private and public money for investing and pump-priming low carbon innovation.

²⁰ See http://ec.europa.eu/regional_policy/funds/2007/jjj/jessica_en.htm and <http://concertoplus.eu/>

5. Giving impetus to action on climate change in Manchester

Mainstream strategic capacity on climate change cannot be built in Manchester overnight. However, without ambitious, innovative, and robustly planned and delivered actions, major inroads into greenhouse gas emissions will not be achieved. It is not enough simply to stress the urgency of the problem and exhort people to act differently. This capacity will most quickly and effectively be created by applying Manchester's established strengths of leadership, partnership, and delivery to identify specific actions that we can start to deliver now. These actions will use the skills we already have in the City to catalyse and exemplify the kind of work that will need to become the norm over the next decade. By demonstrating, rather than simply describing, the potential for a better Manchester through practical climate change action, Manchester's leaders can enable citizens and stakeholders to see and seize the opportunities for themselves.

For that reason, the City Council proposes a **programme of catalytic actions** which will provide impetus, begin to build transferable skills and knowledge – '**learning by doing**' – and show leadership on some of the biggest challenges and opportunities climate change poses to the city. These catalytic actions have been identified on the basis that:

- They **fit within the framework for action** set out above, offering clear routes to lower carbon emissions directly and/or by delivering pilot projects that could be more widely adopted;
- They **manifest our new way of thinking** about climate change, designed to help Manchester explore and demonstrate how it can pursue its objectives in lower impact and more rewarding ways – not just 'climate change projects' without a wider purpose and attraction;
- Many **build on programmes or projects already underway** in the City are recognised to be affordable and deliverable and are thus capable of practical implementation in the short to medium term; and
- They **bring with them access to existing or new streams of public and private resources** and, by collectively demonstrating the seriousness of Manchester's endeavour, will increase the City's ability to attract new resources from government and elsewhere as the global and national search for practical solutions to climate change is stepped up.

5.1. World-leading neighbourhood regeneration

With the help of partners, the City Council intends to identify trailblazing major regeneration neighbourhoods in which to develop internationally recognised exemplars for socially, economically and environmentally sustainable place-making. The sites are expected to be identified and announced in 2009. A comprehensive vision will be developed in conjunction with stakeholders and the community, following the selection of preferred development partners. As an outline, however, the City Council intends that the scheme would achieve:

- A socially mixed, family-oriented community with low levels of transience and a safe and secure environment. Helping to reverse the trend for many people to choose to move out of Manchester as their incomes rise or their family circumstances change;
- A mix of uses that support a thriving neighbourhood economy and enable people to access local shops and services easily and work near where they live;
- A superb, accessible and safe public realm, used throughout the day by different people in different ways with excellent green infrastructure for movement, shelter, recreation, water management, food production and biodiversity. Helping to support a radical shift to walking, cycling and the use of public transport;

- Well-made, adaptable buildings that achieve outstanding energy performance, together with very low carbon and renewable provision of energy and treatment of water and waste; and
- Active long-term governance and management in support of sustainable lifestyles and the achievement of whole-life values.

Behaviour change will be at the heart of the proposition. “Zero-carbon” building design can only account for a relatively small proportion of a person’s environmental impact; reducing *total* carbon footprint means encouraging people to adopt more sustainable behaviour in all aspects of their lives – such as how they move around the City and where they get their food from.

The result will be sustainable communities in every sense, with a total carbon footprint among residents at least 80 per cent lower by 2025 than in 1990. The projects will create a benchmark for all subsequent regeneration in Manchester to match. The schemes should come to be regarded as exemplars, not for technical design wizardry or architectural curiosity but because they enable people to live well and successfully, within environmental limits, in a beautiful, ordinary City neighbourhood.

5.2. Retrofitting Manchester’s civic heritage

One clear route to reducing operational carbon emissions is through our combined purchasing power and the potential to use this both to ‘green’ our own operations efficiently and to create a base of demand for the development of new technologies and services.

The buildings that make up the Town Hall complex are of significant historical and cultural importance to the City. However, their design and heritage present us with

particular challenges in terms of energy efficiency and carbon emissions. Under the EU Energy Performance of Buildings Directive, large buildings that are occupied either by public authorities or by institutions providing public services are required to publicly display energy performance certificates. On the scale of A (best) to G (worst), both the Town Hall (Grade 1 listed) and Extension Building (Grade 2* listed) are rated as E.

We are currently undertaking a study to look at the feasibility of financially viable, low carbon retrofit options for the Town Hall complex. Of particular interest and relevance to this project is the recently completed project at the Natural History Museum in London, which is also a Waterhouse designed building. After an investment of approximately £3.7 million, a first year saving of over £750,000 was made on heating bills and a proportionate reduction in carbon emissions achieved. Whilst the Museum is in reality a very different building to the Town Hall complex, it shares some of the same challenges and indicates the scope of the carbon reduction projects that may be technically and commercially feasible for the City Council.

Although a success in its own right, a successful retrofit of the Town Hall complex will have signal benefits for Manchester:

- Demonstrating that it is possible to delivery **major energy improvements to the most challenging buildings** in an economically viable way;
- Helping the Council and its partners to understand the **determinants of success** in such projects and how this might map across to different aspects of Manchester’s built environment; and
- Providing a **blueprint** for undertaking similar retrofits of many of the 300 Council buildings across Manchester.

5.3. A business alliance for climate change action

If we in Manchester are to shape the City so that it is fit to grow a low carbon economy and reap a competitive and first-mover advantage from doing so, business will need to be in the vanguard. Indeed, through forums such as the 100 Months Club and activities like the Environmental Business Pledge, business is already playing an important role.

Often, business action on climate change and sustainability focuses on efforts to reduce factory and office waste and energy use, source supplies more sustainably, and change employee behaviour (for example by providing incentives and facilities for walking and cycling to work). This kind of in-house action is critical, with **many small steps adding up to major carbon savings** if widely adopted and will be an important part of business action on climate change in the City.

Box 5.1: Marks & Spencer Plan A

Plan A is a five-year, 100-point plan devised by Marks & Spencer to combat climate change, reduce waste, safeguard natural resources, trade ethically and build a healthier nation, working with customers and suppliers. It argues that “there is no Plan B” and that this is “now the only way to do business.” Plan A is predicated on a series of simply stated, challenging but achievable goals. By 2012 the company aims to become carbon neutral, send no waste to landfill, extend sustainable sourcing, help improve the lives of people in the supply chain and help customers and employees live a healthier lifestyle. The company garnered front-page headlines for becoming the first major food retailer to abolish the free plastic bag. See <http://plana.marksandspencer.com/>

However, business also has a growing interest in assisting and advising on measures to help Manchester to develop a wider resilience and adaptability to climate change and make the most of the opportunities it presents. As consumers become more educated and conscious of sustainability issues, business environmental credentials will come under increasing scrutiny. Investors are demanding greater transparency, both in the corporate responsibility aspects of sustainability and increasingly their exposure to carbon liabilities in business models and supply chains. All of which are strategic risks to businesses as the cost of carbon rises in the coming years. And there are also opportunities, identified in the Greater Manchester Mini-Stern review, for ‘eco-innovation’ among established businesses.

Box 5.2: the Chicago Climate Exchange

The Chicago Climate Exchange (CCX), launched in 2003, is one of the world’s first voluntary greenhouse gas emissions trading mechanisms. CCX members make a voluntary but legally binding commitment to meet annual greenhouse gas emission reduction targets. Those who reduce below the targets have surplus allowances to sell or bank; those who emit above the targets comply by purchasing allowances.

The CCX aims to establish a transparent price mechanism for encouraging greenhouse gas reductions, build the skills and institutions needed to manage greenhouse gas emissions cost-effectively and help inform the public debate on managing the risk of global climate change. The benefits of membership claimed by the CCX are:

- Preparedness;
- Mitigation of financial, operational and reputation risks;
- Producing third-party verified emissions cuts;

- Establishing emissions management systems with peer assistance;
- Proving concrete action on climate change to shareholders, rating agencies, customers and citizens;
- Driving policy developments based on practical, hands-on experience;
- Gaining leadership recognition for taking early, credible and binding action to address climate change; and
- Establishing an early track record in reductions and experience with the growing carbon and greenhouse gas market.

CCX members include Ford Motors, Motorola and the State of Illinois. In 2005 a European Climate Exchange based on similar principles was launched.

See <http://www.chicagoclimateexchange.com>

See <http://www.europeanclimateexchange.com>

The City Council wants to understand business views on this Call to Action. We want to understand what specific interventions Manchester business would like to see to support the realisation of a low carbon economy, including supportive policy changes, for example. We would like to examine with business the potential for coordinated procurement initiatives by large organisations across the public and private sectors to create a demand-pull on environmental technologies in Manchester. We would like business input on the potential of climate change as a signature aspect of Manchester's brand – as the Chicago Climate Exchange has increasingly become associated with Chicago's international brand. The City Council would like to engage and support business leaders to take the lead on climate change action. These businesses will provide the lead for others to follow and will agree a number of stretching and specific common commitments and actions.

Working with the 100 Months Club, this could amount to a **Manchester coalition for climate change** action, a major citywide business commitment to climate change. To explore the issues and options further and kickstart such a coalition, the City Council proposes to prepare a summit on business and climate change in Manchester later in 2009 with a major international speaker and an invited group of major Manchester businesses including developers, inward investors and major employers.

Box 5.3: Smart business for Manchester?

Smart meters allow energy suppliers to communicate directly with their customers, removing the need for meter readings and ensuring accurate bills with no estimates. They can tell people about their energy use through either linked display units or other ways, such as through the internet or television. They can also provide information or be linked to incentives that help consumers to use less energy and encourage energy efficiency.

There are two specific ways in which, as an example of how Manchester could capitalise on the need to shift to a low carbon economy and society, smart metering could blaze a trail. First, by signing up to smart metering alongside collective energy procurement, groups of organisations – such as businesses co-located within a city or district – can monitor and reduce their energy use and make both carbon and cost savings. As an incentive and focal point for the development of a Manchester business coalition with a wider climate change ambit, the City Council will consider, with the help of the 100 Months Club and others, allocating a sum from the Innovation Fund, to be matched by business contributions, to examine the feasibility of establishing a common smart metering programme and energy purchasing scheme among major businesses in central Manchester.

Second, with a government commitment now in place that all homes will be smart metered by 2020, but without the workforce nationally or locally to accomplish this, there is a potentially significant opportunity for Further Education Institutions to help train specialist smart meter fitters who can also give qualified energy efficiency advice. This is exactly the kind of opportunity for 'eco-innovation' identified by the Mini-Stern review and the City Council will discuss with Manchester College and others through the proposed business alliance the potential for this to be a pilot area of low carbon business growth in Manchester and the scope for assistance from the Innovation Fund or other support and sponsorship.

5.4. Low carbon energy infrastructure

The establishment of the right critical energy infrastructure is a vital step on the road to a low carbon economy. Manchester needs to bring together a demand-side analysis of current and future need for energy infrastructure with a supply-side analysis of the opportunities for low carbon energy generation. As described out in box 3.1, this is an evolving process involving many different partners; there will be a key role for the Greater Manchester Climate Change Agency in bringing coherence to that process in our City.

Manchester City Council, with a range of partners including United Utilities, is supporting work by the AGMA Environment Commission to examine the commercial and technical feasibility of establishing a Manchester-wide Energy Services Company (ESCo). The model will supply low carbon and renewable energy on a strategic scale across Greater Manchester, making best use of the resources and environments that characterise different parts of the conurbation. This builds on a feasibility study undertaken for Manchester Knowledge Capital in 2007.

An ESCo is not a distinct model of energy supply so much as a 'way of doing things'. At the right scale, it can guarantee savings relatively to conventional energy provision and on that basis enable finance to be released to fund capital costs. It can generate economies of scale and efficiencies while exemplifying the concept of distributed generation, which brings users closer to their energy sources and increases awareness of energy use and efficiency issues.

Aspects of a citywide ESCo strategy could include:

- The establishment of large and small-scale decentralised **renewable energy generation capacity across the City-region**, including the exploitation of wind and geothermal capacity available via publicly owned or controlled property assets;
- **Financial mechanisms for households to release equity** to improve the energy efficiency of existing homes as part of a contract for ESCo energy supplies, as well as major contracts to supply social housing providers and a ready model of energy provision available to new developments;
- Concluding agreements, in advance of the establishment of a UK feed-in tariff, to **sell surplus energy** on a commercial basis via the grid.

This work will be complemented by two other studies to be overseen by the Climate Change Agency into community heating and combined heat and power capacity, and renewable energy generation capacity.

Subject to the outcomes of these studies, the City Council will support early efforts to establish an infrastructure strategy for renewable energy generation, distribution and use across the City and City-region. If necessary, the City Council will use its landholdings to accelerate the development of generation capacity and ensure that both the energy and the income

such development – which is likely to be controversial – generates is invested in local communities. However, in principle the establishment of a citywide ESCo or similar offers potentially the greatest single source of reduction in Manchester’s emissions – potentially up to a 30 per cent cut in the City’s total carbon footprint depending on uptake and the extent to which existing energy supplies are replaced.

5.5. Low Carbon Communities

The City Council will encourage neighbourhood or community groups to identify opportunities across the city in which to pilot transformational Low Carbon Communities. This will demonstrate how existing neighbourhoods can combat climate change, improve their local environment, increase social cohesion and cut energy costs and fuel poverty through a comprehensive but affordable package of action to reduce their carbon footprint. The project could include:

- Creating, on a self-financing basis, a **community renewable energy supply** in which residents own a stake and benefit from the sale of surplus energy via the grid;
- Helping homeowners to **release equity** in their homes based on savings on future energy bills to fund retrofitting improvements in energy efficiency, and procuring improvements on a coordinated basis to realise purchasing power;
- Preparing a **green travel plan** for the community and facilitating car-share schemes, public realm improvements and other measures to encourage more sustainable travel patterns;
- Engaging local people in wider **sustainable regeneration** of their choosing – for example using underused open space for food production, setting up social enterprises for land management and community composting, or establishing organic box schemes; and

- Considering the potential for **larger-scale interventions** – for example through the redevelopment or reuse of under-utilised buildings to enhance the physical and social character of the area and release additional value for community uses.

The City Council believes that Low Carbon Communities should be created and led at the instigation of local people, while recognising that they will need proper professional support and advice. Initial funding from the Innovation Fund will be made available, with matching sought from partners, to support the first projects in getting off the ground, and they are also likely to be able to attract funding from government programmes and other sources based on the achievement of energy efficiency standards. The identification of the first areas to pilot the concept will take place following the consultation on this draft action plan and based on criteria to be drawn up in the intervening period; it is unreasonable to ask communities to bid, but there may be particularly strong or compelling suggestions from within certain parts of Manchester.

In order to further define and scope the concept of Low Carbon Communities and establish a framework of support within the City, the City Council will organise as part of the consultation programme a **symposium on neighbourhood climate change action** involving if possible partners such as the Carbon Trust, Co-operative and United Utilities.

5.6. A climate-change ready Local Development Framework

Both Manchester City Council and AGMA are committed, through their strategy for Housing Growth and Renewal, to repopulating the urban core and achieving a more compact urban geography so that future economic growth is more sustainable. People will be able to live closer to where they work, reducing the need to commute, and the renewal of the housing stock will increase the proportion of modern,

energy efficient homes. Although it cannot deliver the carbon reductions needed in the short to medium term to put Manchester on an early trajectory to a low carbon economy, this is a critical long-term factor in increasing Manchester's climate change resilience.

In the City of Manchester the key vehicle for achieving these aims is the Local Development Framework (LDF). The LDF is the spatial expression of the Community Strategy and as such climate change activity needs to be embedded within LDF, as in the Community Strategy and the Local Area Agreement. There will be several different parts to the LDF and as such several opportunities to embed low carbon planning and design requirements into the City's future architecture.

In April 2009 the City Council will publish the 'Refining Options' stage of its LDF Core Strategy, the principal statement of Manchester's spatial planning objectives and principles. During consultation on Issues and Options earlier this year, some respondents argued that climate change imperatives mean Manchester should not seek to grow its population further and should place greater constraints on development than hitherto.

The City Council recognises that development adds to Manchester's carbon footprint, both in the 'embodied energy' that is used simply in the process of constructing buildings and infrastructure and in the additional emissions generated by extra residents. However, it rejects the suggestion that this argues for reducing the pace or quantum of development in Manchester. That would run counter to the City's regeneration goals, but on a broader perspective is also the least sustainable course of action: continued population growth in and around Manchester is a welcome and unavoidable consequence of the City's rising prosperity and demographic change; and development in and around urban cores offers the most economically, socially and environmentally beneficial way of absorbing this growth.

However, the Core Strategy and the wider planning system do have an important role to play in supporting a lower carbon economy and lifestyles. The City Council's Guide to Development²¹ sets out a number of guidelines and requirements of developers, and expectations of sustainable design and development are increasing steadily (for example with the staged implementation of the Code for Sustainable Homes). The Government's climate change supplement to Planning Policy Statement 1 enables the City Council to set out a range of stronger development control policies and measures for climate change action.

As a result, and with a view to including relevant proposals in the LDF Core Strategy Refining Options consultation, the City Council:

- Will adopt clear principles for **low carbon development** – for example by promoting the highest quantum and densities of development in and around the City Centre and in locations with good access to the City Centre by sustainable transport modes – and adaptation;
- Is undertaking with partner authorities in Greater Manchester a study of the optimal locations for **renewable energy generation** – potentially enabling the accelerated development of a Manchester ESCo model (see above);
- Will consider (and, if attractive, consult upon) the feasibility of adopting a standard methodology for measuring the **total carbon footprint** of major schemes, providing a transparent and replicable basis for developers and the Council alike to estimate the overall climate change implications of a development – not just those of buildings and energy use; and
- Will monitor the progress of the **World-leading Neighbourhood Regeneration** proposed above with a view to incorporating standards achieved by these flagship projects in future guidance or Supplementary Planning Documents.

²¹ See http://www.manchester.gov.uk/site/scripts/download_info.php?downloadID=644&fileID=1424

5.7. The Manchester Prize

The City Council proposes the introduction of a Manchester Prize with the aim of establishing the City as a centre of design for sustainability and a place in which good ideas from around the world, connected with the creation of low carbon, environmentally beneficial ways of living, are demonstrated. Through the Manchester Prize, Manchester will become a living laboratory for applied climate change solutions and networks among those involved in making it happen.

The concept of the Manchester Prize is:

- A Prize to be awarded biannually to a range of **designs for sustainable living** at different scales, from objects to buildings to whole streets or neighbourhoods;
- The winner of the Manchester Prize to receive the **opportunity to install or build** their sustainable living design somewhere in Greater Manchester, contributing to regeneration and providing a direct community benefit from the Prize; and
- **Involvement of the whole city** through different levels of the Prize, with designs and ideas serving as a source of inspiration and practical action among communities, professionals and leaders.

The Prize, which has been under consideration for some time, offers several strategic advantages, including a reinforced reputation as an ambitious City, evidence to governments and investors that the City is serious about climate change and the opportunity to bring the best thinking and design from around the world to bear in Manchester and create transferable reference points for future common practice. Private sponsorship will be sought for the Prize, pump-primed by a proposed allocation from the Innovation Fund, and the City Council will seek the support of AGMA in organising the first Prize for 2011.

5.8. Greening the city: i-Trees

Climate change adaptation – ensuring that Manchester enjoys a high quality of life with the advent of already inevitable climate change – is a critical aspect of the City's plan. Key elements of this include making sure that buildings and public transport can be comfortable at higher temperatures, that the way streets and public spaces are laid out and furnished provide shade and shelter from extremes of weather, and that Manchester can cope with increased frequency of storm events. These will become especially important as the need to mitigate further climate change encourages more people to walk and cycle and supports a culture of being out-and-about in the city.

The Manchester City South Partnership with Red Rose Forest has developed the "i-Trees" proposal for long-term investment in greening in the City South area which centres on Oxford Road, the busiest road corridor in the North West and a major gateway to the City Centre. The project will:

- **Establish a living laboratory** within the Oxford Road Corridor that can be used to develop innovative scientific monitoring techniques for the impact of adaptation interventions on the urban microclimate – becoming a centrepiece of the internationally pioneering adaptation research programme at Manchester University;
- **Identify and pursue opportunities for greening** the Oxford Road Corridor, linked to a comprehensive public realm strategy, including street tree planting, green facades and green roofs; and
- **Educate stakeholders and the public** on the benefits of trees and greening in urban areas.

A detailed feasibility study has been completed and implementation of the early stages of the project are commencing. In incorporating the project into this Call to Action, the City Council's aim is to:

- Help accelerate delivery of the programme, corraling a wider body of capacity, expertise and resources to ensure that visible change in the environment is realised as early as possible. The Council believes that the i-Trees project is nationally significant and merits a higher profile and momentum than hitherto, and is keen to explore whether, perhaps through the involvement of bodies such as CABE, the pace of delivery could be enhanced; and
- Make links to other aspects of climate change action and city life: for example, greening and public realm improvements in the Oxford Road corridor could complement and support a shift toward sustainable transport modes such as walking and cycling, delivering further improvements to the Oxford Road environment and that of the wider city.

5.9. A green airport

Aviation is one of the most controversial factors in climate change. Although currently accounting for a relatively small share of the UK's carbon footprint, a Tyndall Centre analysis²² has shown that if air travel continues to grow at the expected rate, with realistic improvements in efficiency, then by 2050 air traffic alone will contribute the entirety of the carbon emissions the UK is likely to be able to allow.

Manchester Airport is one of the principal components of economic growth in Manchester. The City Council agrees that global rates of air traffic growth are unsustainable in the long term but believes that it is not a realistic option for individual airports or cities to suppress their growth unilaterally ahead of international agreements that lead to orderly, market-based reductions in overall emissions and the contraction in air travel that they may bring about. For this reason, the City Council will continue to support the Airport's growth plans while strongly advocating the inclusion of aviation and shipping emissions within the scope of a comprehensive international carbon cap-and-trade mechanism. The City Council will also press for the increased investment in major rail capacity that is likely to be an essential, practical substitute for reduced levels of air travel within the UK and northern Europe.

Manchester Airport has committed to becoming **carbon neutral** in its site energy use and vehicle fuel – including major improvements in the way people access the Airport from the surrounding area. This is a very stretching commitment, and the City Council will do everything it can to help the Airport achieve its aims – including involving the Airport in all the major actions identified in this plan.

²² "No chance for the climate without tackling aviation", 2005; Anderson et al; Tyndall Centre

6. Measuring outcomes

The actions identified in section 5 will, in and of themselves, have mixed effects on carbon emissions, ranging from the potentially huge direct impact of establishing an effective citywide low carbon energy infrastructure supported by major investment in renewable energy capacity, to the indirect but totemic role of the Manchester Prize.

Box 6.1: Carbon impacts of catalytic actions

Action	Timescale for implementation	Direct impact	Indirect impact
1. Sustainability Quarter	Start 3-6 months; 5-7 years to complete	High locally – hundreds of new low-impact homes and lifestyles; low in citywide context	Significant potential as an exemplar of sustainable regeneration
2. Retrofitting civic heritage	Immediate; around 2 years	High locally – major carbon reductions (to be quantified) and cost savings; low in citywide context	High impact as demonstration of financial and technical capacity in an iconic location
3. Climate change business alliance	Immediate; ongoing	None	Unquantifiable but significant if leading to deep and wide base of engagement in technical and behavioural change
4. Manchester ESCo	Next 6 months; ongoing	High locally; low in context of scale of pilots on a citywide basis	Potentially large if successful in developing replicable business model
5. Low Carbon Communities	Pilot within 6-9 months; ongoing if successful	High locally; medium in citywide context across 5 areas	Significant if producing scalable and replicable solutions for other neighbourhoods
6. Climate change-ready LDF	Next 6 months; ongoing	None	Very significant if successful as a basis for raising the quality and coherence of sustainable development
7. Manchester Prize	Next 6 months; ongoing	Small	Significant role as totem of new Manchester way of thinking and rallying point for design innovation
8. Green street	Next 6-9 months; 2-3 years then ongoing	Low – adaptation measure with some potential mitigation benefits (e.g. productive landscapes, water management and renewable energy)	Low-medium – adaptation measure
9. Green airport	Immediate; ongoing	Subject to airport decisions and other factors. High if carbon neutrality goal is successful.	None

The City Council believes these constitute the right balance of actions that touch on every aspect of our carbon footprint as a City, can be got underway now, and will enable us to evolve capacity to respond as the national and international policy environment changes. They are an essential step on the road to creating city infrastructure, mechanisms and behaviours that will hit thresholds in substantive carbon reduction over time. But these are of course not the only actions that the council is taking or will undertake.

As a detailed implementation plan for each action is developed, fuller estimates of their impact on Manchester's emissions will be made. This, and associated work, will enable the climate change action plan to be published in late 2009. The plan will incorporate a full route map to achieving a reduction in Manchester's carbon emissions of over a million tonnes by 2020.

However, as was the case with Manchester's renewed economic prosperity, significant and sustained work will be needed before clear and measurable outcomes can be realised. As the Stern Review found, a low carbon economy and society cannot be achieved overnight: "the next 10 to 20 years will be a period of transition". But this cannot be used as an excuse for delay: "[c]osts rise significantly as mitigation efforts become more ambitious or sudden. Efforts to reduce emissions rapidly are likely to be very costly".²³

In April 2008 the Government introduced a new streamlined performance framework for local government, the spine of which is 198 indicators against which local government now reports its performance. Three of these relate specifically to climate change: national indicator (NI) 185 (CO₂ emissions from local authority operations); NI186 (per capita CO₂ emissions); and NI188 (climate change adaptation). Manchester therefore already has a short-term target, agreed under its Local Area Agreement, to reduce per capita carbon emissions by 3.7 per cent a year. This target is likely to be met through a range of measures that have already been

implemented. However, in the longer term, much deeper cuts are needed, and because of the lead-in times for both major investment and widespread behaviour change, the underlying determinants of Manchester's carbon emissions this year or next lie well into the past.

By the same token, the investment we make today in creating the capacity for lower emissions in the future will take time to feed into outcomes – because of embedded behaviours and the need to marshal efforts and resources to share priorities. As the Tyndall Centre has observed, "With rapidly increasing emissions from aviation, current levels of political inaction, the time required to introduce policies and the recent substitution of gas with coal-fired electricity it is unlikely emissions will reduce before 2012".²⁴

It is not likely, therefore, that Manchester will follow a smooth trajectory of slowing, then reversing, then accelerating decline in carbon emissions (as is sometime implied by the 'budget' approach). Much likelier is that the city will work hard, see very little and then reach a tipping point when a big reduction takes place; then work hard on the next generation of action, see little, then a threshold, and so on. All the while, national and international policy and legislation will shape, push and in some cases hold back what Manchester does.

For these reasons, counting carbon – setting macro-targets for carbon reduction in Manchester ahead of the central objective of at least a million tonnes reduction by 2020 – makes little sense in the early years: outcomes cannot be predicted with any certainty and the demotivating and credibility-depleting effects of failing to hit an impossible target are significant. Moreover, because much of the traction on emissions outcomes will come from action taken at other levels – for example through international carbon trading agreements, or UK technology policy – it is not easy to place a figure on Manchester's share of the essential 80 per cent reduction that must be achieved by 2050.

²³ Stern review; p xv

²⁴ "Living within a carbon budget", 2006; Bows et al; Tyndall Centre

Therefore, as part of the proposed engagement on climate change and this action plan, the City Council will seek views on:

- **Appropriate carbon metrics for Manchester** – targets, timescales and responsibilities relative to other drivers of climate change action; and
- The merits of establishing an **independent body**, such as an academic panel to work with the Climate Change Agency, to advise on and assess performance against suitable targets for Greater Manchester.

7. Conclusion

This document has described the potential for Manchester to turn the enormous challenge of climate change to its advantage, by going beyond environmental responsibility and a response to the evolution of national and international policy. The City will embrace the potential for a low carbon economy and society to yield a more prosperous, better and fairer Manchester.

The Call to Action describes the critical role of leadership and strategic capacity-building, not to replace action on the ground by individuals and in communities but to help give that action the impetus, support and underlying way of thinking that can help make action on climate change a natural part of what it is to be a Manchester resident.

As a first step, the Council has identified a series of actions, to be taken forward immediately, which directly or indirectly will help to catalyse and stimulate wider change – actions which each have a compelling case behind them not only in terms of climate change impact but as contributing factors to the greatness of our city.

The City Council will now seek to work with people from all walks of Manchester life to ensure that the proposals set out in this document – and the other good ones that will emerge as that work begins – are implemented, and thus to ensure that this Call to Action achieves the response to which it aspires.

Manchester City Council
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