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Birmingham

Climate change action plan 2010+



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GLOSSARY



Leader of the Council
Cllr Mike Whitby

Birmingham is a global city with a local heart. We played a key role at this start of the industrial revolution in promoting the carbon based society in which we live.

Now we face a difficult future due to climate change. But it is also an opportunity for Birmingham to lead a new transition towards a better and more sustainable quality of life.

This lies at the heart of the Sustainable Community Strategy : **Birmingham 2026.**

The City Council is committed to a systematic transformation of the Council and the city. I have ensured that this is reflected in the Council Plan 2010-13. Our key areas for focus are on a systematic transformation of the way in which services are delivered; providing more personalised services to citizens; dealing with the city's underlying problems; increasing the cost effectiveness of delivery and creating new forms of commissioning partnerships.

All these changes lie at the heart of this Climate Change Action Plan.



Deputy Leader of the Council
Cllr Paul Tilsley

This new Action Plan creates the first crucial steps towards achieving our 2026 carbon emission reduction targets of 60%. It follows closely on the Council's 2015 Birmingham Declaration.

Birmingham has already shown its commitment through our initiatives on district energy, electric vehicles, and housing retrofitting. But we have also long recognised that isolated action and individual projects are not sufficient in themselves. They require a wholesale transformation of the way in which Birmingham addresses its carbon reduction target.

With a total annual energy bill of over £1.5bn for gas and electricity alone, it is imperative that the City actively takes action to improve energy efficiency across all sectors. This will help reduce fuel poverty, improve business competitiveness and importantly create new jobs, improve health and education outcomes and make a Birmingham an improved city in which to live, work and play.

We all have to face up to the threat from climate change, energy insecurity and high and volatile fossil fuel costs, and this action plan shows how we will address this. And at the same time make significant improvements to the quality of all who live and work in this great city.

Foreword



BeBirmingham, Chairman of Birmingham
Environmental Partnership Executive Board,
Keith Sexton

**I am pleased to support this Action Plan.
Birmingham has set itself a challenging target to
reduce its carbon emissions.**

As the Chairman of the BeBirmingham Environmental Partnership Executive Board I know how important it is that becomes a truly sustainable city through partnership working.

The range of actions which we have set down in this Plan show how important it is that we both work together and we take a long view in addressing the city's economic, social and environmental sustainability.

Creating a new green and sustainable Birmingham will create wealth, jobs and greater satisfaction in our communities. I am looking forward to make this Action Plan work for all the city's businesses and communities.

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Birmingham businesses have a proud history of innovation and need to be in the forefront of developing new processes and technologies in response to global warming.

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Section 1: Climate Change Vision for Birmingham

Introduction

This Climate Change Action Plan provides the implementation framework for the Strategic Framework "Cutting CO2 for a Smarter Birmingham" which was published in June 2008, and also the "Birmingham Declaration 2015" which was resolved by the City Council in December 2009.

Changes to the world's climate system are unequivocal and the impacts this will have on the environment, the economy and communities will be significant without making responsible changes to the way we work, move around and live. We recognise that the threat and reality of climate change is both international and local and that the impact upon our own community is not going to be as severe as those in developing countries, where the prospect of drought, food shortages, flooding and land loss will be profound. These will inevitably also impact on all UK citizens and businesses through supply chain impacts and increased demand for limited resources.

However, it is also inevitable that in Birmingham we will see increased risks of extreme weather conditions including flash flooding, water shortages and in the longer term, heatwaves creating "urban heat island" effects, which could exacerbate problems with poor air quality and generally affect our quality of life in the city.

Birmingham was not only the birthplace of the carbon-based industrial revolution but also the most influential city in sustaining the revolution. With this responsibility we as a city believe that it is our moral duty to maintain this pioneer spirit and drive

to lead the low carbon industrial revolution in addressing climate change.

As a global cosmopolitan community with many and widening connections with those areas of the world which are already suffering from the worst effects of more extreme weather events, we are already aware of how this is affecting life in those countries. With our many family and business connections Birmingham has an empathy and a responsibility to take action to significantly reduce its own environmental impact.

We can also see the risk to the city's economy if Birmingham does not adapt to this new world and does not take advantage of the change which will occur as society moves towards a low carbon economy and away from carbon based technologies. There are opportunities for Birmingham to use our skills and knowledge in business and academia to diversify our industries and develop new sectors to create new green jobs in making Birmingham Greener.

These will bring real commercial benefits from adapting and putting in place actions to tackle climate change in Birmingham. The result will lie in economic, social and environmental benefits to our community, including long term reduced costs, improved health and greater quality of life and higher air quality standards, and importantly lay the foundations for our future prosperity.

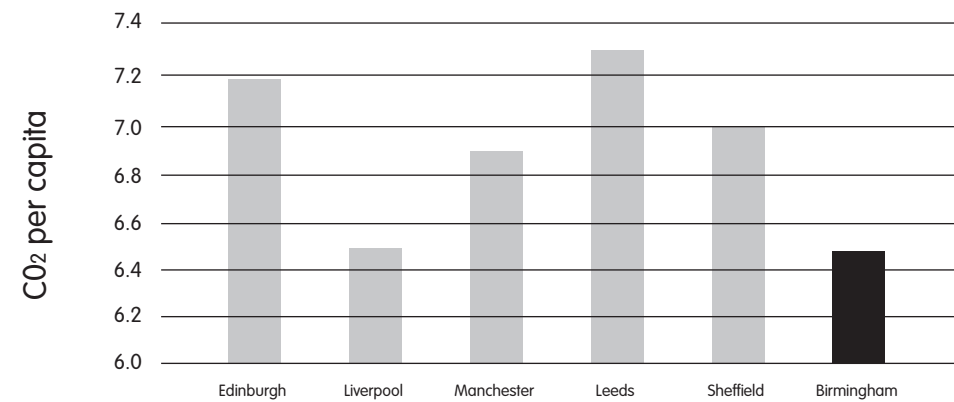
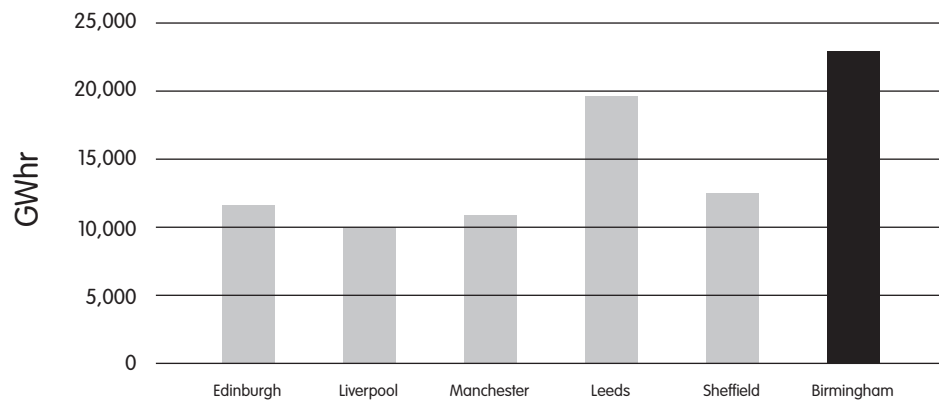


How does Birmingham impact on climate change?

- Birmingham imports in the region of 22,800 GWhr of energy for our business (36%), domestic (39%) and transport (25%) sectors(Figure 1). This is costing the city's population and businesses over £1.5bn each year. And this cost will certainly rise in the coming years. The City Council alone consumes 580 GWhr of energy at a cost of over £25 million.
- Birmingham people consume almost three times their 'fair share' of the Earth's resources, in common with many cities in developed countries.

- Birmingham produced 6.5 tonnes of CO₂ per capita – less than other Core Cities (figure 2) and much less than the USA (19.5) but more than India (1.2) and China (4.6) (the fair share of carbon dioxide per person is less than 2 tonnes)

Without action and with the expected growth in the city's population our demand for energy based on current consumption patterns and the changes in our weather patterns will impact on our future environment and our quality of life.



Strategy and Policy in place

The ambitious vision of Birmingham has been clearly set out in the Strategic Framework "Cutting CO₂ for a Smarter Birmingham" (June 2008), the "Sustainable Community Strategy; Birmingham 2026" (September 2008), the "2015 Birmingham Declaration" (December 2009) and the "Council Plan 2010-13" (February 2010).

- All these affirm the overarching commitment by the City Council and the BeBirmingham partnership for a 60% reduction in carbon dioxide (CO₂) emissions produced in the City by 2026 based on 1990 figures.
- This is an accelerated commitment compared to the current government target which requires a 34% reduction by 2022 and an 80% reduction by 2050.
- The City's actions have been guided to date by the Local Area Agreement (LAA) which has adopted two National Indicator targets (NI 186 and NI 188). These are targets for the period 2008/11. These targets will be reviewed to enable more effective evaluation and monitoring arrangements on progress to be undertaken from 2011 onwards.
- This Action Plan will provide the framework for Birmingham to prepare its more detailed targets from April 2011 onwards.

The Action Plan is also designed to ensure that the increasing obligations which have been put in place over the last two years in national, regional and local legislation and strategic planning and economic policies are effectively addressed. Key elements of this policy framework lie not just in the work of the Committee on Climate Change, but also in the current Regional Spatial Strategy, the Regional Economic Strategy, and in the preparation of Birmingham's new planning

framework – the Core Strategy. The review of the City's building, transport and land use planning policies will provide a new direction of travel for Birmingham in planning the city for low carbon living.

Climate Change Action Plan

This Action Plan is designed to act as the co-ordination tool to ensure that the City's responsibilities are taken forward in a transformed, managed and comprehensive fashion.

The Action Plan will guide Birmingham as a city:

- Providing strategic leadership – through articulating the city's needs, opportunities and solutions
- Providing strategic influence – through stimulating activity and actions to commit partners to shared strategic objectives
- Securing access and leverage on the finance for delivery of the actions identified in this Plan
- Creating confidence in the city's prospects for economic growth and improved quality of life
- Achieving alignment and inter-locking of the priorities and investment plans across the City Council and partners.

The City Council and their partners have already undertaken, prepared and delivered a significant number of key projects which demonstrate that Birmingham has the experience to meet the challenging targets set.



The Action Plan sets down the key priority areas along with a set of “Early Actions”. These describe:

- Birmingham’s trajectory towards its new role as a **“Low Carbon Transition”** City
- Improving the energy efficiency of the city’s **“Homes and Buildings”**
- Reducing the city’s reliance on unsustainable energy through **“Low Carbon Energy Generation”**
- Reducing the city’s impact on the non-renewable resource use through **“Resource Management”**
- Reducing the environmental impact of the city’s mobility needs through **“Low Carbon Transport”**
- Making sure the city is prepared for climate change through **“Climate Change Adaptation”**
- Making sure that this action plan **“Engages with Birmingham Citizens and Businesses”**

These key areas will provide the co-ordinating programme to deliver the necessary priority actions with clear accountability to meet their pertinent targets and milestones.

Meeting the Birmingham 2026 target

The Birmingham target is ambitious. The 60% carbon reduction target by 2026 is significantly ahead of the Government’s agreed 15 year carbon reduction plan (figure 3). The Action Plan has identified carbon savings contributions against homes and buildings, and from transport. These are inevitably indicative.

The preparation of the identified “early actions” will undertake more detailed carbon reduction trajectories. While there has been significant progress made in understanding the city’s energy consumption and its carbon emissions, we still don’t know enough to be absolutely certain on the precise impact of each action.

In shaping the “early actions” through their design and the setting up of delivery arrangements, we will put in place effective measurement and evaluation of energy efficiency and carbon savings as key decision-making criteria, which will be reflected in City Council report templates and the new governance arrangements.

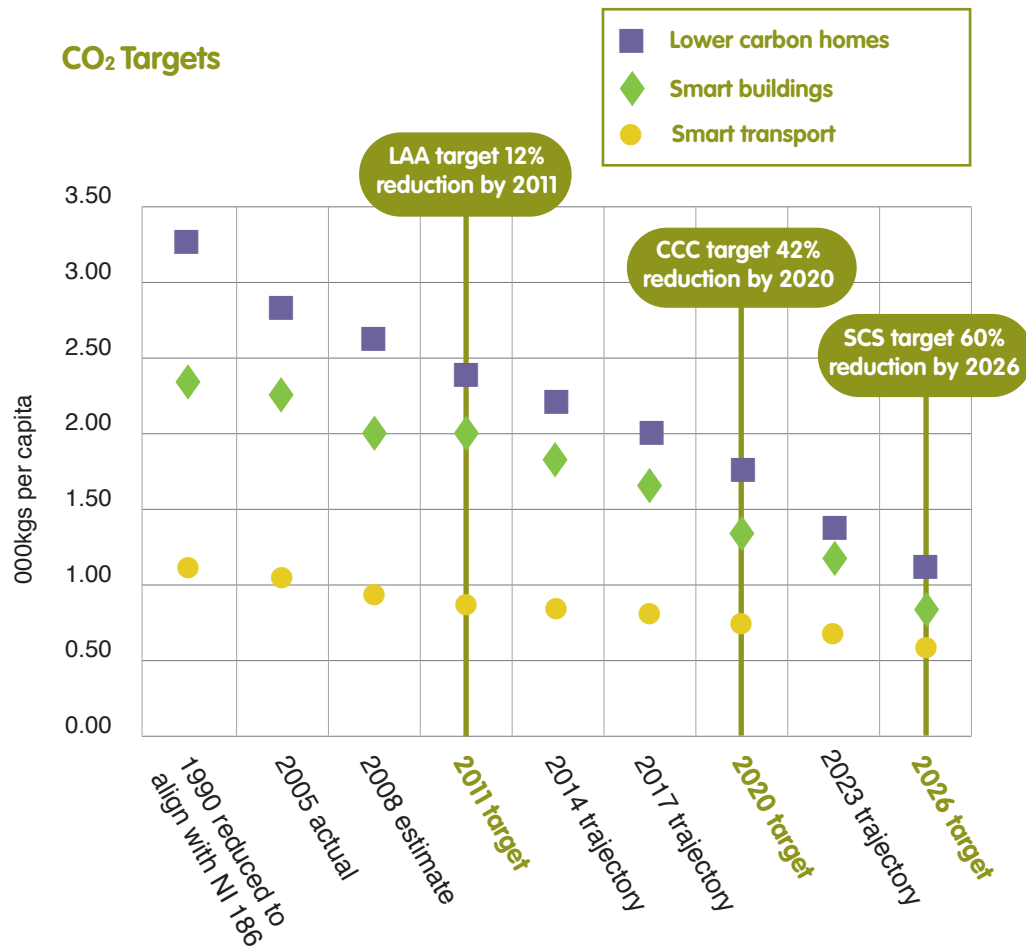
It is critical that an early action for each section of this Action Plan is to agree baseline emissions and potential savings to be defined in line with the programme actions and contributions.

Adapting to climate change will require proxy measures in line with national guidance. Birmingham is well advanced in both understanding the potential impact of climate change on the city and in setting up processes to monitor and mitigate its effects.

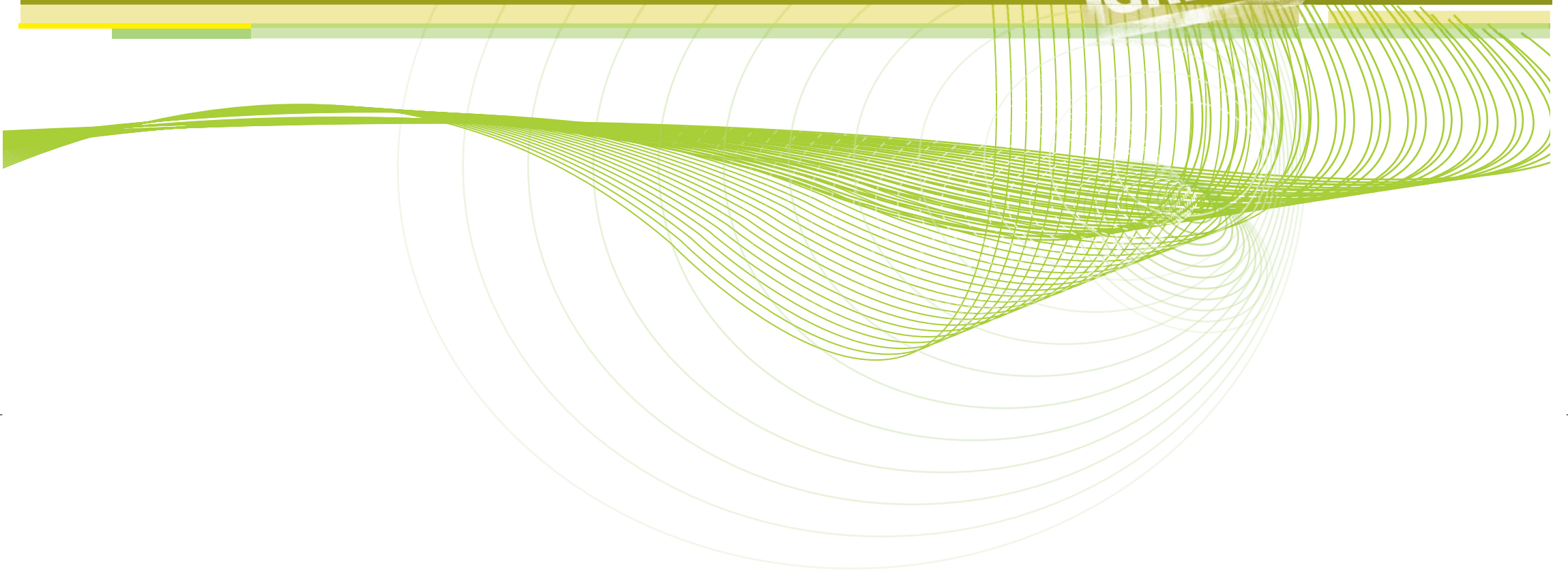
The formation of new governance arrangements will ensure that there is effective evaluation and monitoring in place. The establishment of a new “Cabinet Committee on Climate Change”, which will work with the city’s partners through the BeBirmingham partnership arrangements will oversee the strategic shape and direction of travel of Birmingham in delivering the actions identified in this Plan.

This is set down in more detail in “Making it Happen and Keeping on Track” (Section 9)

Figure 3



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Section 2 The Low Carbon Transition City

Evolving Birmingham from a fossil fuel based economy to a low carbon economy lies at the heart of this Action Plan.

This is a significant challenge to the city. But it is also an opportunity. We will require a behavioural shift from individuals, private and public sector organisations to make the necessary carbon reductions from our homes, transport and business.

This can only be achieved through all partners and agencies in the city embracing this approach. The "Total Place" initiative is a progressive approach to delivering Birmingham as a "low carbon Transition City". Key partners will include all government agencies, and the business community, our universities and of course our communities.

This transition to a low carbon society and economy will also present a number of opportunities for the business sector to both manage their risk and provide services and infrastructure required for the UK to adapt and thrive to changes as a direct response to either climate or the policy framework. Key to this will be in understanding and exploiting the opportunities from our existing expertise in science, manufacturing and engineering.

The "Total Place" initiative also provides a real opportunity for all public sector partners to address how Birmingham moves towards a low carbon society and economy. All public sector partners for example will have to comply with carbon reduction emission targets. They will all have to consider the impact of climate change on service delivery. And they will all have to consider more comprehensively how services are delivered sustainably and with a reduced impact on the city's

environment and use of natural resources. The "Total Place" approach is therefore an opportunity to take this forward.

Building a low carbon economy requires new infrastructure, innovation, products and services, which will be driven by a shift in the way we approach our decision making. In Birmingham we have the existing skills base to promote, grasp and stimulate the market development advantages and for green technology companies and organisations to locate in the city, and provide new additional job opportunities. The West Midlands has recently been declared a "Low Carbon Economic Area for Advanced Automotive Engineering".

In our low carbon Transition we will aim to

- Minimise, reduce, reuse and recycle all waste
- Energy to be produced using low carbon energy sources and methods
- All resources (in particular energy) to be used efficiently – more energy efficiency devices, combined heat and power, etc
- Wherever practical, local needs should be served by local and regional production – food, material, energy, services, etc
- There is a high awareness and compliance with environmental and social responsibility initiatives – industry, commerce and citizens.

Many of the actions set out in this Action Plan will require a portfolio of skills to deliver these changes to meet the challenging targets and for Birmingham to become a Sustainable Global City. It is our intention to develop the skills necessary to meet the needs of the city and beyond.



- Contribute to Birmingham's economy by increasing job opportunities and innovation in delivering sustainable energy
- Promote growth in energy related businesses
- Stimulate the market to attract new investment into Birmingham for low carbon technologies and services

Many of the actions set out in this Action Plan will require a portfolio of skills to deliver these changes to meet the challenging targets and for Birmingham to become a first Sustainable Global City. It is our intention to develop the city and prepare for the future by,

- contributing to Birmingham's economy by increasing job opportunities and supporting innovation in delivering sustainable energy
- promoting growth in energy related businesses
- stimulating the market to attract new investment into Birmingham by low carbon technologies and services.

Birmingham's transition to becoming a low carbon city

Birmingham has commissioned work to identify the risks and opportunities from the low carbon economy. Emerging findings reveal that the sectors that have high contribution to economic productivity such as "Gross Value Added" are low energy users, however around 30% of employees within the City are within sectors that are exposed to future energy prices and carbon legislation. These sectors also have good opportunities to either decarbonise (produce existing goods more efficiency) or diversification (produce new low carbon products and services).

A range of programmes are in place. For example piloting certificated training in carbon reduction in buildings has been developed by Birmingham Chamber of Commerce and Industry with Groundwork and Be Birmingham. The output from this will be 940 staff and managers to be trained in skills to deliver reduced CO2 from existing buildings by 2013. The challenge remains to improve the coordination of support available and lever in more support to increase the changes required.

Strategic Action

Develop a programme to develop Birmingham's transition to a low carbon economy. Identify the opportunities that exist and ensure that Birmingham has the necessary skills and education to compete effectively in the UK, deliver the services and be in a strong position to attract new industry into the city and export both products and services.

Ownership: Strategic Director Development
Key Strategic Support: AWM, Environment Agency, Chamber of Commerce, Carbon Trust

First Phase Milestone

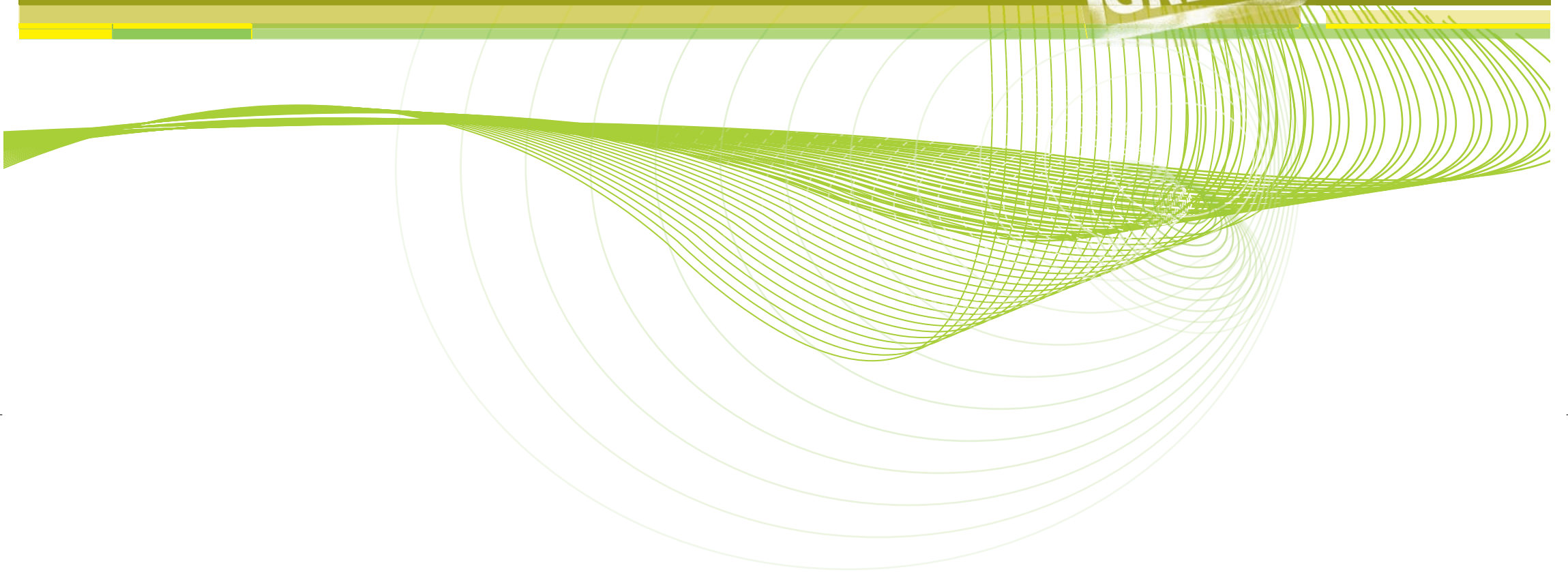
	year	quarter
Delivery Team established	2010	3rd
Resources and partners identified and confirmed	2010	3rd
Determine the investment costs and partnership options for the Programme	2010	3rd
Outline delivery programme for 2012, 2017 and 2022 targets and measurements	2010	3rd

Early Action 1 Create a framework to grow our low carbon business opportunities through decarbonisation, diversification and innovation, for example environmental goods, renewable energy and waste and promoting the application of ICT. This would form a series of policies and actions for Birmingham's economic policy and delivery.

Early Action 2 Identify the skills gaps in Birmingham to deliver the actions in all sectors of the Climate Change Action Plan on products, systems and services. For example this should include the skill base in energy efficiency, sustainable procurement and low carbon technologies. This should encompass capacity and skills building for CERT programme managers, installation companies, building inspectors, housing and planning staff.

Early Action 3 Develop and implement the inward investment offer for low carbon business

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Section 3 Homes and Buildings

Improving the energy efficiency of the city's building stock is a major first priority for Birmingham. In Birmingham, over 440,000 homes account for approximately 33% of the city's carbon emissions.

The Council is committed to improving energy efficiency in homes, while recognising that this will be a long term task. This is essential as it will bring substantial benefits through

- Reducing the energy bills of householders and tenants which will increase disposable incomes
- Reducing the numbers of people affected by fuel poverty which will improve quality of life
- Improving health outcomes for those who are vulnerable by improving insulation standards
- Improving educational outcomes by providing warmer and more comfortable learning places for children in their homes.

Over the period to 2026, and working through the City Housing Partnership, and with other agencies we will endeavour to undertake a sustained reduction in CO2 emissions from our homes to meet the 60% reduction in CO2 emissions from Birmingham's homes by 2026.

* The 1990 baseline for NI 186 was 6,891 with a population of 1.003m (i.e. 6.87T per person). 60% per person reduction results in 2.75T per person. Population is expected to grow to 1.1m, so actual target of 3,023kT. ARUP trend analysis predicts that emissions due to homes would represent 34.7% of total emissions = 1,049kT. ARUP extrapolate that homes were responsible for 2,347kT in 1990, so target reduction from 1990 is 1,298kT

The 2015 Birmingham Declaration included the following targets:

- 10% of Birmingham homes linked to district heating systems (by which date, the locations to be linked will have been identified and programmed)
- 10% of Birmingham homes have extended retrofit insulation (which continues to build on the Decent Homes and Kick Start programmes)
- There will be at least 10 "low carbon communities" similar to the successful example of Summerfield Eco-neighbourhood.

In terms of CO2 emissions from Birmingham's homes the 60% target equates to a saving of approximately 1.3million tonnes of CO2 (allowing for population growth to 1.1m) In Birmingham the single biggest cause of our CO2 emissions is energy used in

CO2 emissions from Homes (Domestic) (T of CO2 per capita)

1990	→	2005	→	2007	→	2011	→	2026
2.34 tons		2.21 tons		2.15 tons		1.91 tons		0.94 tons

non-domestic buildings and businesses, such as offices, retail, hospitality and public buildings including schools and hospitals. The non-domestic building emissions relate to both the energy consumption of the buildings themselves and the business processes within those buildings.

In terms of CO2 emissions from Birmingham's non-domestic buildings the 60% target equates to a saving of approximately 1.8million tonnes of CO2.



projected CO₂ emissions from non-domestic (tons of CO₂ per capita)

1990	→	2005	→	2007	→	2011	→	2026
3.28 tons		3.02 tons		2.84 tons		2.42 tons		1.13 tons

In the 2015 Birmingham Declaration the City Council will itself endeavour to reduce Council's own energy consumption by 25% by 2015, to assist in achieving the overarching 2026 reduction target. This is being pursued through the Council's Business Transformation Programme "Working for the Future".

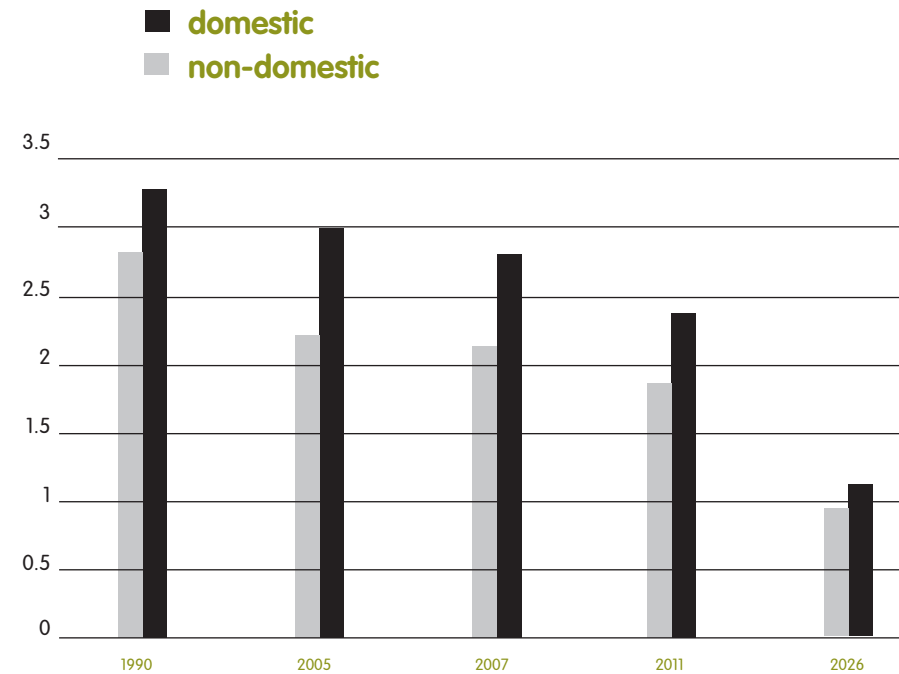
The Benefits of Carbon Reduction from our Homes and Non-domestic buildings

These goals will be achieved principally through a combination of increases in the insulation and efficient heating systems (the thermal efficiency) of buildings, on-site renewable energy generation or renewable energy procurement and greater efficiencies with which natural resources are used in building development.

By reducing the carbon impact of our homes and buildings this can provide a higher standard of living for residents in line with UK's best cities and economic benefits and more competitive business for Birmingham. The standards for housing will increase through more energy efficiency which in turn will reduce energy bills and lead to an improved resilience of housing stock and communities to the risks and severe weather that will result from climate change.

Through refurbishment and standards for new build and a gradual decarbonisation of electricity including more on-site renewable energy generation this will ensure a fundamental reduction in Birmingham's emissions.

Projected Carbon Reduction for Birmingham's Homes



Social and Private Homes

To date we have taken significant steps in delivering carbon emission reduction in our homes (eg Kick Start, Warm Front and Decent Homes), and as such we approach our priority actions in a strong position to meet our targets. This has been made by a number of individual groundbreaking schemes and projects across the city. Such schemes have included large investment in technologies resulting in a range of best practice and developments that can be expanded upon. For example the pioneering Summerfield Eco Neighbourhood, at the time the largest renewable energy eco-housing project in the UK included the installation of 329 homes with solar panels. This has helped significantly reduce fuel bills by up to £150 per year and it is estimated that the systems will deliver 60% of each households domestic hot water requirements per annum.

A start on linking Birmingham homes to district heating schemes has also been made with

Homes and Community Agencies funding for the Cambridge Street/Civic centre scheme and the Holte School BSF/Manton & Reynolds Towers scheme

Financial and advisory support has been available to residents through programmes including Warm Zones in Northfield and Affordable Warmth as well as the Energy Saving Trust (EST) Advice Centre. Carbon and financial savings have been made in our social housing networks, including nearly 100% of housing stock meeting Decent Standards for BCC and RSL as part of the Decent Homes Programme and eco-renovations.

Many lessons have been learned from these individual developments which will benefit the roll out of a co-ordinated approach the city will make to prioritise actions and developments through our partnership working led by the City Housing Partnership.

Strategic Action

Develop a Heating and Insulation for Homes Fifteen Year Implementation Plan The objective of the Implementation Plan will be for it to be the central tool to co-ordinate and prioritise projects and developments to radically accelerate improvements on all aspects of thermal efficiency in private and social housing in Birmingham.

Ownership: Strategic Director of Housing and Constituencies
Key Strategic Support: Director of Development, Homes and Communities Agency, AWM

First Phase Milestone

	year	quarter
GND Delivery Team Established	2010	1st
Resources and identified and confirmed	2010	2nd
Baseline carbon emissions data for social and private homes established	2010	2nd
Identification of key tools and support mechanisms including potential roll out of Green New Deal for retrofit developments	2010	3rd
Identification of barriers to city private and social homes	2010	3rd
Outline delivery programme for 2012, 2017 and 2022 targets	2010	1st

Early Action 1 Deliver the agreed "Green New Deal" pilot programme for retrofitting 6,000 private and public housing.

Early Action 2 Establish a 15 year retrofit programme for private and social housing to deliver measurable savings in carbon emissions, reduce fuel poverty and increase health benefits.

Early Action 3 Identify and programme the locations for District Energy schemes for Birmingham Housing

Early Action 3 Establish a communications plan for householders and landlords to ensure all are fully engaged of the financial and technical support and tools available.



Non-domestic buildings – leadership in the public and private sector

Government planning policy and building regulations set the policy framework for energy efficiency and low and zero carbon building developments and it is critical that we encourage and support developments to meet and exceed these standards in order for our goals to be achieved.

Birmingham City Council and partner buildings account for about 12% of the total emissions, which presents significant potential for the Council to make strides to meeting the target and showcase leadership in low carbon buildings. To date progress has been made in the areas of energy management, through obtaining baseline emissions and developing carbon management programmes for various organisations including the City Council, Primary Care Trusts and Universities and excellent BREEAM standards for exemplary developments including WM Fire HQ. The BSF (Building Schools for the Future) Programme is setting significantly higher BREEAM standards to replace older schools and

undertake major refurbishment with greater energy efficiency standards.

The greatest challenge for the private sector is the large number of smaller and often less efficient buildings owned and / or occupied by smaller enterprises and third sector organisations. Tackling the energy efficiency of these buildings provides both the greatest challenge and the greatest opportunity to make a significant improvement in the CO2 emissions due to non-domestic buildings. Similarly this is a large potential market for micro-generation and other low carbon products and processes.

There is good practice on “green roofs” in the city and the new Library of Birmingham will have installed water attenuation measures on Centenary Square. There is nevertheless the need to extend the capability to promote climate change adaptation across the city in future development opportunities

Strategic Action

Establish Birmingham as the leading city for energy efficient buildings and onsite renewable energy generation through the development of a co-ordinated programme of actions delivered through public private sector partnerships.

Ownership: Strategic Director of Development
Key Strategic Support: AWM, WMCCE

First Phase Milestone

Delivery Team Established

year

quarter

2010

1st

Resources and partners identified and confirmed

2010

2nd

Programme targets and timescales confirmed

2010

2nd

Baseline carbon emissions data for public sector and private sector buildings

2011

1st

Outline delivery programme for 2012, 2017 and 2022 targets

2011

1st

Early Action 1 Establish a Public Sector Wide Carbon Management Programme with a costed opportunities database and feasibility of financial support mechanisms as a key component of the “Total Place” initiative

Early Action 2 Establish a Better Building Partnership support programme for low carbon upgrading and to consider how climate change adaptation can be built into refurbishment to promote and show a portfolio of best practice in the private sector and third sector.

Low Carbon Energy Generation for Buildings

The development of low carbon on site and off site renewable energy for buildings (domestic and no-domestic) has considerable potential to reduce carbon emissions within our city and provide more affordable and sustainable electricity and heating. There has been progress made on combined heat and power projects and district energy schemes as at Aston University and Children's Hospital and also on the wider renewable energy

technologies – eg solar panels installed on Alexander Stadium.

The payback on investment for small scale (on-site) renewable energy technologies is now more attractive through the "Feed in Tariffs" (April 2010) and "Renewable Heat Incentive" (April 2011) to support renewable energy take-up. Further support and advice is required to promote the uptake within Birmingham.

Strategic Action

Support the generation of renewable energy for homes and buildings through a programme of financial and best practice schemes.

Ownership: Strategic Director of Development

Key Strategic support: Strategic Director of Housing and Constituencies, WMCCE, AWM, Carbon Trust, Energy Savings Trust

First Phase Milestone

City Energy Plan Steering Group established

year

quarter

2010

1st

biomass resource mapping

2010

4th

city wide district energy procured

2011

2nd

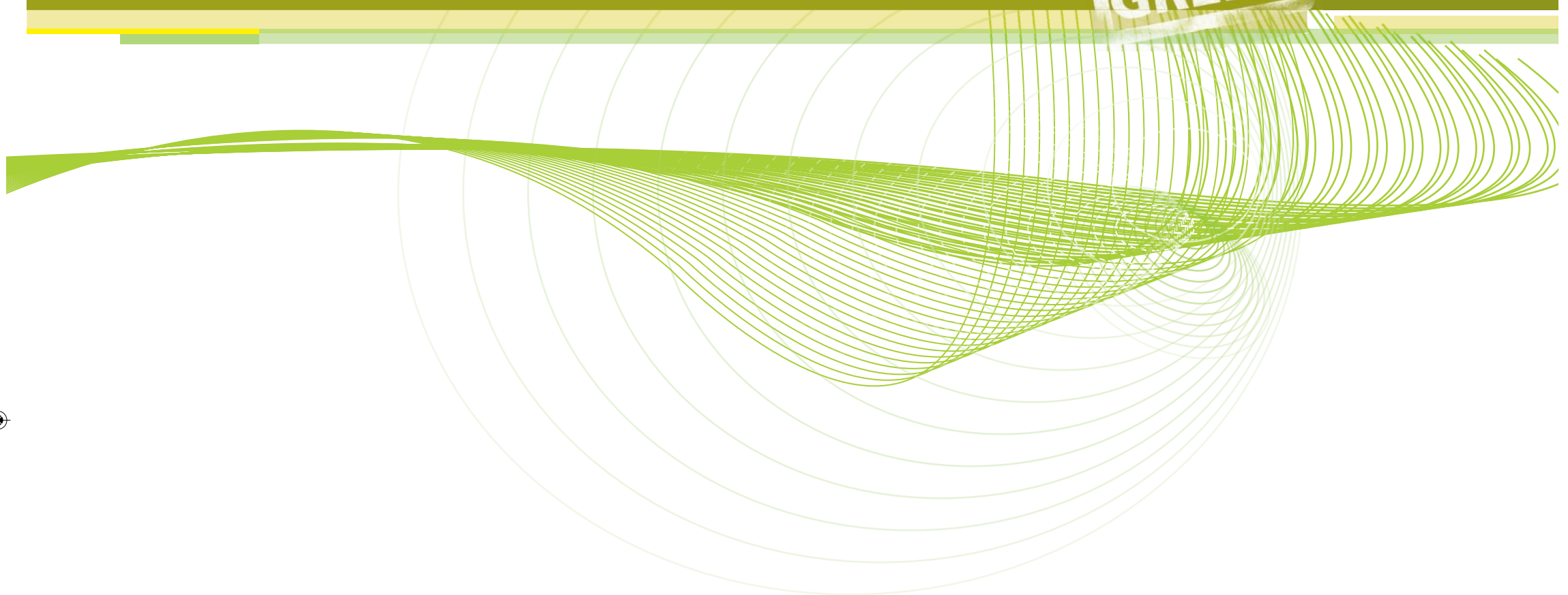
Early Action 1 Develop a City Energy Plan for Birmingham, which includes the identification of current and planned energy demand and supply for heat, power and cooling. And the mapping of the City's renewable energy potential. The City Energy Plan will also promote a city-wide district energy network building on the success of the city centre schemes and the emerging pilot schemes from the BSF programme.

Early Action 2 Establish a programme to develop large scale pilot eco community schemes to integrate micro-renewable technology on existing homes and buildings to facilitate investment and innovation of low carbon technology in the city and be used as best practice for the proposed Energy Advice Programme. This will enable a model for delivery and give evidence to the city on a coordinated approach to rolling out improvements to homes and communities.

Early Action 3 Development of a micro-renewable technology project for SMEs to encourage uptake of technologies through increased awareness of options and support, including shared energy schemes and business park/industrial estates.

Early Action 4 Map the City's biomass potential from BCC owned land and also from more effective biomass management city-wide and identify early wins as part of the City's Asset Management Plan

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Section 4 Low Carbon Energy Generation

How our energy consumption and generation contributes to the Birmingham carbon dioxide reduction target?

Birmingham, like every other city in the UK is reliant upon imported fossil fuels for the generation of power, heat (hot water and steam) and transport fuels. For us to become the first sustainable Global City we need to dramatically increase our deployment in low carbon energy generation technologies, which will cut across all of our targets relating to commercial and industrial (C&I), domestic and transport emissions, and improved energy security.

Our strategic approach will entail a cultural and technological shift in the way we design and build new developments to source and use energy for power, heating and cooling. This will require a co-ordinated cross department/sector response to encourage, remove barriers and regulate effectively.

In addition to the wider national and international climate change policy framework, the UK has signed up to the European Renewable Energy Directive, which sets a target of 15% of all energy generated to be sourced from renewable sources by 2020. This in turn has led to further financial drivers and support mechanisms to enable the roll out of low carbon technologies to the domestic, transport and C&I sector.

Low carbon technologies can include:

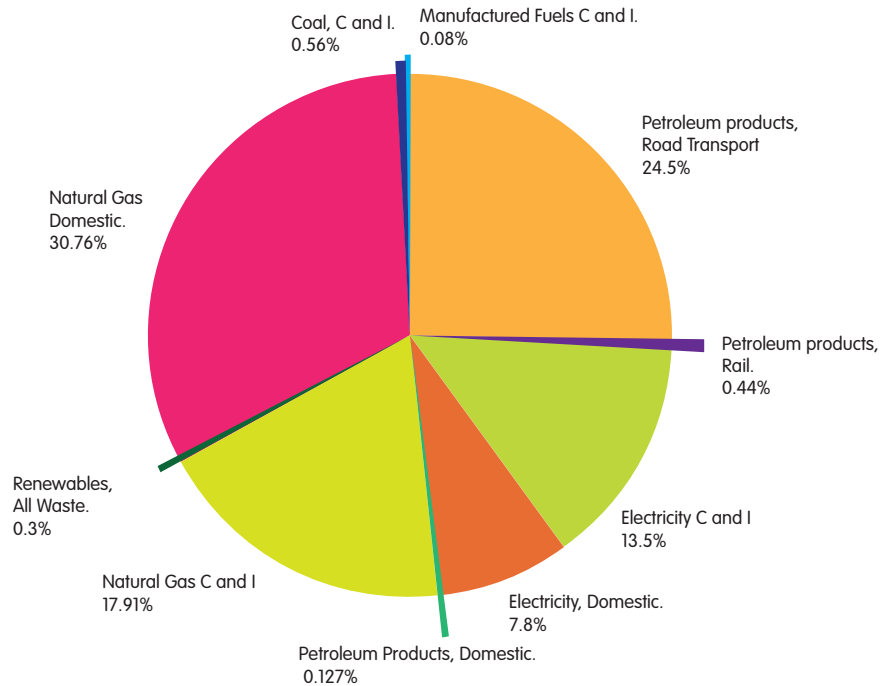
Heating	Power	Combined heat and power and combined cooling, heat and power
Solar Thermal	Solar PV	Biomass
Ground and Air Source Heat Pumps	Wind	Waste
Biomass Heat	Biomass	Gas Fired
	Hydropower	
	Energy from Waste	

Current renewable and energy from waste generation is around 6,000 tonnes of oil equivalent compared with the mix of fossil fuels and their respective use, this represents 0.3% of all energy generated in Birmingham. This does not include renewable energy purchased from the National Grid, which is included in the electricity consumption figure.

Wind and hydropower renewable energy are not a priority for Birmingham due to our geography. However, there are opportunities for low carbon energy generation projects to be integrated into ongoing developments and stand alone generation facilities in addition to energy users increasing their renewable consumption through their purchasing decisions, such as buying renewable electricity. Understanding our own renewable energy generation is a key element of planning the city's energy for the future.



Energy Consumption measured in Oil Equivalent



The Benefits of Low Carbon Generation

Each low carbon generation technology has its advantages and disadvantages dependent upon a range of factors, however in the main they provide the following benefits to Birmingham:

- Reduce the carbon footprint of Birmingham and contribute to the reduction in emissions
- Birmingham people and businesses have access to low carbon energy and heat
- Provide security of supply of energy
- Eradicate fuel poverty, by giving Birmingham’s people, particularly the most vulnerable groups, access to affordable warmth,
- Reduce the energy and heat costs for Birmingham’s businesses
- Contribute to Birmingham’s economy by increasing job opportunities and innovation in delivering sustainable energy
- Improve the environment and air quality by ensuring that the disposal of waste, the generation of energy and heat and the proliferation of microgeneration technologies are planned and controlled

Our Birmingham Declaration Targets

- 50% of electricity used by the Council from renewable sources
- 10% of Birmingham homes will be linked to district heating systems by 2015, which is in the region of 41,000 homes (by which date, the locations to be linked will have been identified and programmed)

There are a wider set of benefits to the region surrounding the investment in low carbon economy through research, commercialisation and manufacturing of low carbon technologies in support of the low carbon economy. In time it is considered that this can help deliver new jobs with high skills levels, develop more secure supply chains and afford opportunities for diversification and new markets from the traditional manufacturing sector in the region.

Low Carbon Energy Generation

Birmingham has set the benchmark for low carbon energy generation and community scaled combined heat and power infrastructure through development of the district energy schemes such as Broad street, Aston University and the Children's Hospital. The Board Street District Energy Scheme serves many of the City Centres most prominent buildings including the ICC, NIA, REP, Council House and Town Hall. The project utilises a large Combined Heat and Power (CHP) engine in the ICC boiler house and heating mains linking the various buildings to the energy centre. The scheme has resulted in cost savings for those linked to it and will reduce the City Centre's CO2 emissions by

20% over the next four years.

There has been progress made on renewable energy technology developments, including Solar Photovoltaic (PV) at Alexander Stadium, biomass at Special Care Centres and ground source heat pumps at BASLIFT health centres.

It is critical that Birmingham builds on this progress through a co-ordinated approach of low carbon technology development, incorporating independent assessments and subsequent promotion of technologies alongside planning and regeneration frameworks.

Strategic Action

Develop a Low Carbon Energy Generation Strategy and Implementation Plan. on the uptake of renewable energy and in planning and prioritising projects for investing in low carbon technologies and the infrastructure required in Birmingham.

Ownership: Strategic Director of Development
Key Strategic support: Director of Environment and Culture, AWM

First Phase Milestone

	year	quarter
Delivery Team Established	2010	3rd
Resources and partners identified and confirmed	2010	3rd
Establish links with Homes and Building Implementation Plan – for embedded energy generation	2011	1st
Determine the investment costs and partnership options for implementation of the Energy Strategy	2011	2nd
Outline delivery programme for 2012, 2017 and 2022 targets	2011	2nd

Early Action 1

Complete the Energy Strategy and Implementation, including the assessment and mapping the existing supply and demand for energy in Birmingham.

Early Action 2

Expand the existing decentralised energy infrastructure capacity across the city centre.

Early Action 3

Establish local district energy networks supported by public investment opportunities, such as Building Schools For the Future.

Early Action 4

Develop a co-ordinated communications programme to encourage the uptake of decentralised micro-renewable technology options, incorporating community schemes, funding options and project development. A key audience for this programme should be SMEs

Early Action 5

Secure provision of renewable energy for new developments and encourage renewable micro-generation through the planning framework.

Early Action 6

Evaluate the feasibility for heat and power from waste management facilities existing and planned, for example the Tyseley incinerator and the proposed Anaerobic Digestion facility.

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Section 5 Resource Management

Resource management cuts across many of the actions presented in this Plan, from procurement decisions to energy generation and as such we have drawn out the key actions that the City needs to implement in addition to the obligated requirements.

Managing our resources impacts upon climate change in a number of ways, such as;

- the design and material use of a product or packaging,
- from emissions through processing wastes and materials such as in transport and recycling, and
- the treatment and disposal of waste, such as landfill gases and emissions generated from energy from waste technologies.

It also plays a key role in avoiding emissions through reuse, recycling and generating energy, for example recycling an aluminium can eliminates the need to mine raw materials and thus avoids the significant carbon impacts associated in the mining and smelting process. Whilst most of the avoided emissions may not be directly measurable as part of the data captured in the Action Plan targets it is critical that this is not overlooked as part of the wider carbon management in Birmingham.

Councils in England spend over £40 billion each year undertaking capital projects and buying in goods and services. Across the public sector as a whole the figure is closer to £150 billion each year. Sustainable procurement is how the public sector's

immense buying power can be used to make rapid progress toward its own goals on sustainable development.

Sustainable Procurement will enable the City Council and other public sector partners in Birmingham to meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, while minimising damage to the environment. The public sector can lead by example and ensure that when spending taxpayers' money it is not inadvertently causing social or environmental harm – thereby also avoiding the additional financial costs of those harms.

Birmingham generates about 4 million tonnes of waste every year, of which 48% is derived from construction and demolition, 36% from industry and commerce and 15% from municipal sources. Whilst we do not send large volumes of municipal waste to landfill we need to ensure that actions are in place to drive materials up the waste hierarchy, and therefore influence the design of goods through sustainable procurement, stimulating markets and improving technology and products to allow greater reuse and recycling of materials and to be more efficient in recovering waste for heat and power. In particular the heat generated at Tyseley needs to be utilised, and the potential to generate even more energy realised. Non-municipal waste provides an even greater opportunity for energy generation and there is a clear need to develop further Waste to Energy initiatives as part of Birmingham's Sustainable Energy planning (see section 4 "Low carbon Energy Generation")

A fundamental long-term change is required to establish a secondary materials economy where components of the waste stream are automatically considered as potential products for new industries and as a source of energy as the last resort.

The City Council's Business Transformation "Environment" programme is currently being finalised. This will set down a more effective and efficient use of the city's waste streams.

Benefits from more efficient Resource Management

- The amount of residual waste produced in Birmingham is reduced
- The amount of Municipal Waste recycled or composted in Birmingham rises to 40%
- 30 kilo-tonnes of Carbon emission savings generated from energy recovery from waste.

Resource Management

In line with the UK's progress on waste there has been significant advances made in Birmingham, such as targeted support to SMEs and commitments made by large businesses to reduce raw materials and packaging and thus save on costs, whilst also utilising more recycling materials in the manufacturing. Our Waste Management Strategy and NI 191 delivery plan include a number of proposals to increase recycling of household waste to 34% by 2011/2 and to 40% by 2026,

which will be achieved by:

- Extending kerbside collections of recyclables to cover all households and the full range of priority materials
- Developing recycling at a wider range of facilities including schools
- Encouraging home and community based composting
- Establishing paper and food waste recycling at schools

Strategic Action

Develop a co-ordinated Resource Management Programme to deliver carbon savings throughout the life cycle of products and waste. The programme will establish links with ongoing climate change activities and actions to ensure that waste is incorporated into procurement and design criteria of products produced in Birmingham, recycling and reuse is further encouraged and the most effective and efficient use of energy is used in the recovery of waste.

Ownership: Strategic Director of Environment and Culture
Key Strategic support: Director of Development, BeBirmingham/BEP Waste Partnership, Environment Agency

First Phase Milestone

	year	quarter
Delivery Team Established	2010	1st
Resources and partners identified and confirmed	2010	2nd
Identify the baseline carbon impacts from waste and resources	2010	2nd
Establish the collaborative actions with procurement and energy generation programmes	2010	
Outline delivery programme for 2012, 2017 and 2022 targets	2010	3rd

Early Action 1 Complete a Total Waste Strategy for Birmingham to include municipal, commercial and construction and demolition waste to maximise carbon and economic benefits.

Early Action 2 Identify mechanisms to assist businesses in reducing their waste disposed of to landfill and continue the downward trend towards the lowest possible landfill ratio.

Early Action 3 Review and transform energy from waste facilities in line with the Birmingham Energy Strategy.

Early Action 4 Assess the potential to develop biofuels from waste materials for transport.

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Section 6 Low Carbon Transport

How do our transport activities contribute to the Birmingham CO2 reduction target?

In Birmingham road transport accounts for approximately 24% of carbon emissions and consequently transport developments have a key role to play in achieving climate change and sustainability targets.

For transport in Birmingham, we will aspire to meet a 60% reduction in tonnes of CO2 per capita from 1990 to 2026. We will also aspire to encouraging the adaptation of Birmingham's transport systems to mitigate the effects of climate change.

projected CO₂ emissions from transport (tons of CO₂ per capita)

1990	→	2005	→	2007	→	2011	→	2026
1.25 tons		1.57 tons		1.54 tons		0.89 tons		0.66 tons

In the Birmingham Declaration targets for sustainable transport to be met by 2015 were:

- All vehicles procured by the Council should be electrically powered or run on liquefied petroleum gas.
- At least 500 electric cars running on the streets of the city as we develop the electric charging infrastructure.

In addition, WM Travel are introducing new "green buses" on selected routes following the winning of funds from the government's "Green Bus Fund". There

should be a more active policy to move towards all buses being "green buses" and promote the use of electric and very low emissions vehicles.

The City Council has a "Walking Strategy", which is being reviewed to support active travel which will help to reduce carbon emissions and also promote improved health working with the PCTS. A Pedestrian Task Force has been established to improve the walkability of the city.

The Benefits of Carbon Reduction from Transport

Birmingham's transport strategy is being refreshed and this will provide a local framework for improvements to cut emissions, improve connectivity and reduce congestion. Wider development plans such as the Core Strategy and Big City Plan will help reduce the need to travel in the city and will therefore lead to a better quality of life, freeing up time. Modal shift from cars to public transport, cycling or walking will contribute to improved local air quality and reduced congestion.

While the city's overall air quality is no worse than most other urban areas, there is an opportunity with the move toward low carbon transport to dramatically improve the overall air quality of the city. This will provide real health benefits for citizens of Birmingham. Coupled with improved information about alternative transport choices working with public transport operators and in line with Centro's planned "Green Charter", and the active promotion of cycling and walking then additional health benefits would be achieved. It is already evident from health and well-being evidence that, especially in priority neighbourhoods, improvements to lifestyles which could be promoted would bring improvements.



Sustainable Travel

Providing more sustainable travel choices to Birmingham is a strategic priority that should reduce transport carbon emissions while improving quality of life and reducing congestion in the City. Already more than 50% of commuters travel to work by public transport, but further work is needed to encourage Birmingham people of the benefits of sustainable transport options, making better use of public transport, choosing more efficient cars and driving more efficiently. Progress is being made towards better quality and more accessible transport choice information, for example through Birmingham's Digital City agenda.

Ambitious plans for greening public transport are already underway combining the implementation of new strategies with planned major infrastructure projects. Centro have recently been out to consultation on their Draft Integrated Transport Prospectus and work on the 3rd West Midlands Transport Plan is now underway. The City Council is developing a comprehensive Parking Policy and is taking forward a wide variety of initiatives to support cycling and walking and improve non-motorised access to community facilities.

Substantial investment is being channelled into Birmingham's public transport network. Work is underway to improve commuter experiences at New Street Station and the final approval to the development of the Metro extension in the City Centre is expected shortly. Centro are

leading a comprehensive set of initiatives to upgrade bus travel. The recent announcement of the HST2 (High Speed Rail) to and from Birmingham also offers a step change in the city's sustainable connectivity with London and Europe.

Tackling congestion continues to be a priority for both the city and the region. The Birmingham Congestion Task Force has played a leading role in taking forward practical measures to reduce congestion in key locations across Birmingham contributing to the West Midlands Targeted Congestion Programme and the delivery of its NI167 congestion management target.

Technology can also provide individuals with more sustainable travel choices. Teleconferencing for example can reduce the need to travel, whilst real-time travel information (RTI) can make public transport more attractive and give drivers the opportunity to change their plans to avoid traffic queues.

Careful land use planning can reduce the need to use motorised transport for work, education and leisure. The City Council continues to promote sustainable travel in exercising its obligations and powers as Local Planning Authority for example, in the way that it deals with planning applications and in the development of Birmingham's emerging Core Strategy

Strategic Action

Continue to Develop more Sustainable Travel Choices for Birmingham. Joined up implementation of newly revised transport strategies, infrastructure projects and better information provision should enable Birmingham to provide more sustainable travel options to all. The City Council will support the development of the 3rd West Midlands Local Transport Plan (LTP3) and the integration of transport initiatives with Birmingham's wider sustainability agenda

Ownership: Strategic Director of Development **Key Strategic support:** AWM, Centro, National Express WM, Network Rail, Chamber of Commerce, PCTs

First Phase Milestone

Complete the Sustainable Transport Strategy for Birmingham

year

2010

quarter

4th

Early Action 1 Complete the Sustainable Transport Strategy for Birmingham based on a comprehensive review of transport demand and congestion. Policy areas include developing accessibility and mobility, incentives for lower carbon travel choices, reducing the need to travel and improved walking and cycling provision.

Early Action 2 Develop advice and information provision so that people can make more sustainable choices based on real time travel information, including the promotion of travel planning, car club programmes and fuel efficient driving.

Early Action 3 Promote agile and flexible working practice as part of carbon management planning.

Transport Technologies

We will support Birmingham's universities and businesses to engage with low carbon vehicle technology and facilitate the roll out of electric vehicles and the corresponding vehicle charging infrastructure. Our universities and businesses are at the forefront of automotive innovation with expertise in body manufacture, especially use of lightweight materials, and emerging capability in other new higher-value-added technologies.

Progress rolling out electric vehicle technology is underway, as the Coventry and Birmingham Low Emission Vehicle Demonstrators consortium (CABLED) is launching the largest electric vehicles trial in the

UK, trialling 110 vehicles on the roads of Birmingham and Coventry. The Mitsubishi i-MiEV used in the trial is a fully electric city car with zero emissions. Birmingham is also a key partner in the West Midlands' application to 'Plugged in Places' for extended electric vehicle charging infrastructure.

By 2011 we are set to have 20 new low carbon hybrid buses in operation in Birmingham, funded by the Green Bus Fund, which will emit a third less carbon than conventional buses.

Strategic Action

Roll out low carbon vehicle technology. Seek new opportunities and build on secured electric vehicle initiatives and current university research activity to ensure Birmingham becomes an exemplar City for innovative low carbon vehicles. This should be coupled with developing the required fuelling and recharging arrangements.

Ownership: Strategic Director of Development **Key Strategic support:** AWM, OLEV

First Phase Milestone

Promote electric vehicles in the city

year

quarter

2010

1st

Secure additional funding for EV charging infrastructure

2010

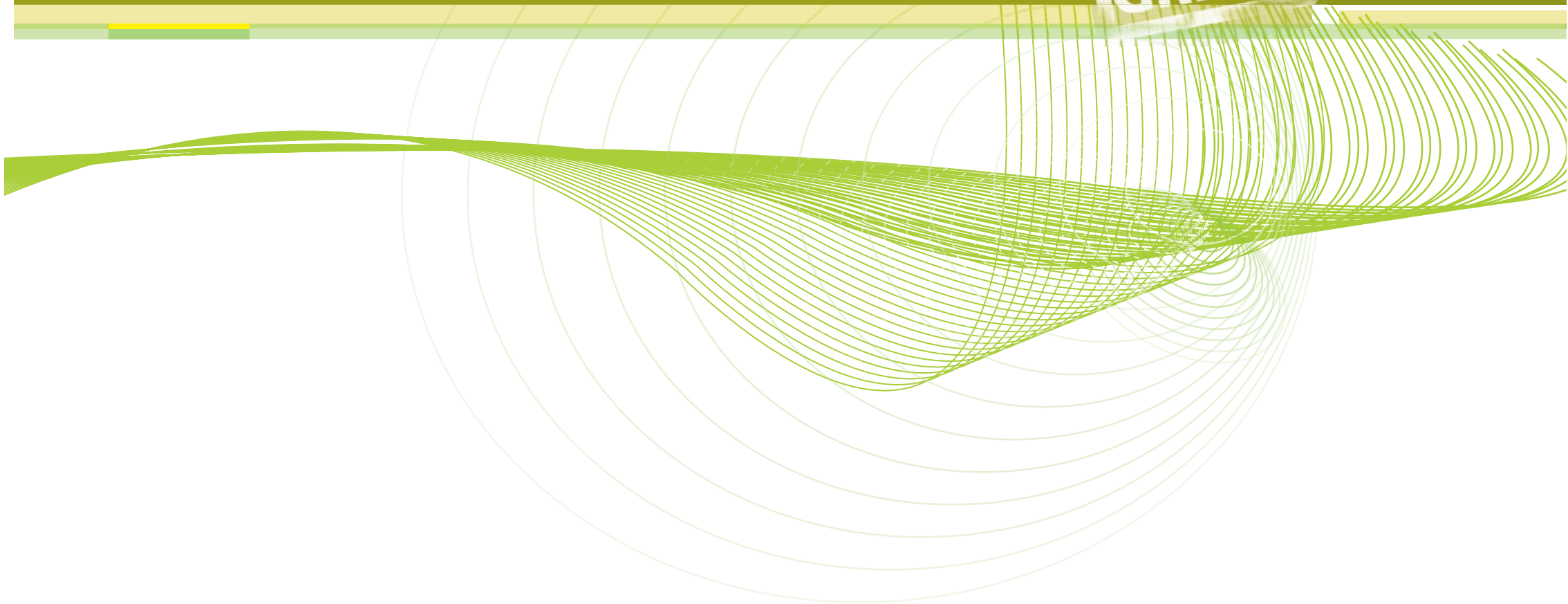
4th

Early Action 1 Develop Low Carbon vehicle fleet and enable installation of re-fuelling or recharging stations for alternative fuels, such as electricity, biofuels and gas, beginning with CABLED electric vehicle trial in 2010

Early Action 2 Support Birmingham's universities and businesses in developing new technologies that reduce carbon emissions from transport through procuring locally developed innovative vehicles where practicable

Early Action 3 Promote fuel efficient driving in buses, taxis and private hire vehicles and encourage the use of lower carbon vehicles, to include the delivery of 20 new low carbon hybrid buses.

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Section 7 Climate Change Adaptation

Climate change will have varying degrees of impact upon our society and our environment, for example a community's physical and economic susceptibility to flood risk and individuals vulnerability to increased temperatures. Minimising these impacts by adapting our natural and built environment to these changes requires a thorough understanding of the current risks and any risks from future climate change. Our planning system and building standards must ensure new buildings and developments are designed and built in resilient ways to minimise future CO2 emissions and cope with, or minimise, the likely effects of climate change, such as flood risk: and, while we have not experienced extreme heat in Birmingham since 2003, also ensure that we prepare for extreme heat impacts in future years.

We are in the process of preparing and implementing Birmingham's adaptation strategy, which prepares us for the risks and severe weather events that will result from climate change. By 2011 we have committed to be at level 3 of the Government's approach in delivering the strategy. Our evidence-based approach is assessing the impacts in terms of:

- Our city – assessing the impacts on critical infrastructure such as transport, buildings and natural resources.
- Our economy – examining the local impacts, the resilience and opportunities on the business sector
- Our communities – engaging with communities and individuals to show the potential impacts from climate change on their neighbourhoods
- Our environment – mapping the natural and built environment to determine areas of constraint, redevelopment and impacts upon our biodiversity

These will be brought together at a neighbourhood, area, city and sub-regional level to identify risks and opportunities and to become the basis for area based option regeneration and strategic spatial planning. The resultant Action Plan will consider the high-level issues that arise from this approach in four main areas;

1. Coordination
2. Raising awareness and changing attitudes
3. Grey infrastructure
4. Green infrastructure

The Action Plan will inform emergency planning for extreme weather and inform future planning and policy development will be informed by the plan and tools, such as predictive GIS mapping will enable planners and developers and communities to better understand and mitigate the environmental and socio-economic impacts of new development and existing neighbourhoods, whilst adapting to a changing climate.



Adaption

Through the development of the Adaptation Strategy our progress in understanding the issues and communicating them is strong. Our Adaptation Partnership meets regularly as a sub-group of the Birmingham Environmental Partnership and we have a number of projects ongoing that is adding to our evidence base which will allow Birmingham to plan and be prepared for any detrimental impacts. GIS mapping studies and a Birmingham economic assessment examine local opportunities arising from climate change. Birmingham has also set up a Knowledge Transfer Partnership with University of Birmingham to improve the evidence base and analytical tools providing valuable forward planning for planning, resilience and health purposes.

An annual programme of flood risk awareness raising and enhancement is being delivered to our communities which have incorporated practical demonstration

projects such as Birmingham's first Wetlands Reserve and a RHS Chelsea Flower Show demonstration project - a sustainable garden.

To mitigate localised flood risk and to increase insulation and biodiversity a "Green Roof" Group has been established between BCC and Birmingham University to promote green roofs - up to 43 green roofs have been planned for the city to date.

Innovation in the construction sector has been driven by the Birmingham Construction Partnership. This has promoted exemplary standards of design and construction to adapt to climate change especially by Be Birmingham partners, for example through the adoption of BREEAM Sustainability Criteria on all Council new build.

Strategic Action

Develop the Action Plan as set out in Birmingham's Adaptation Strategy

Ownership: Strategic Director of Development.

Key Strategic support: Director of Environment & Culture, Environment Agency

First Phase Milestone

	year	quarter
Complete the Action Plan in order to achieve Level 3 of the approach to producing the Adaptation Strategy	2010	4th
Create a "Green Infrastructure" framework and resources and partners identified and confirmed	2010	4th
Outline delivery programme for 2012, 2017 and 2022 targets	2010	4th

Early Action 1

Complete the Action Plan in order to achieve Level 3 of the approach to producing the Adaptation Strategy.

Early Action 2

Working with the Resilience Team, develop neighbourhood / area action plans for local climate adaptation and responses, based on geographical modelling.

Early Action 3

Ensure that adaptation awareness is co-ordinated and fed into "Making Birmingham Green" Climate Change communications.

Early Action 4

Undertake a programme of co-ordinated strategic review of all critical infrastructure to map risks and develop a risk based spatial strategy.

Early Action 5

Prioritise and identify adaptation and resilience risks / issues in key strategies such as the Sustainable Community Strategy, Local Development Framework and the Places for the Future Supplementary Planning Document (SPD).

Early Action 6

Ensure major developments and "eco-neighbourhood" areas include mitigation and adaptation to climate change as key components.

Early Action 7

Create a "Green Infrastructure" framework covering open spaces and parks and green roofs.



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Our Needs: Support for Change

- Awareness about the issues of climate change as they relate to business and the public sector
- Engagement with these issues and understanding of the potential benefits of change
- Assessment of the impact of current behaviours
- Commitment to change their current behaviours
- Information about what they can do that is appropriate to their circumstances and makes a significant difference
- Support to make difficult choices.

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Section 8 Engaging Birmingham to Take Responsibility

Climate change is a complicated, emotive and, with the recent debate on the evidence base, a somewhat controversial subject. It is acknowledged nevertheless that without action being undertaken by all stakeholders we will not be in a position to reverse any detrimental impacts from climate change, both locally and globally. It is all the important that timely information, advice, support and skills are given to our residents, workers, visitors and businesses and all our leaders, for them to confidently make informed decisions so that they can take responsibility in undertaking their own actions to reduce their carbon footprint and consecutively support the City in meeting our 60% reduction targets.

Supporting our community to respond to the impacts of climate change and take individual and collective action will have cross cutting benefits in delivering our carbon savings. This can be achieved from energy efficiency in the home, procurement in low carbon generation technologies, products and services in the workplace, through to more sustainable transport decisions (including Travel Wise) and improved health and well being.

In terms of our commercial and industrial sector this is the single biggest cause of Birmingham's CO₂ emissions which is responsible for 43% of our total emissions. Yet climate change poses a number of opportunities for this sector to both manage their risk and provide services and infrastructure required for the UK to thrive and adapt to changes as a direct response to either climate or the policy framework. Key to this will be in exploiting the opportunities from our existing expertise in science, research and engineering.

Benefits of Continued Engagement and skills development

As society moves towards low carbon living and the need to conserve the consumption of the worlds' non-renewable resources increases, there will be real opportunities for Birmingham citizens, communities and businesses. A comprehensive programme of communications, support and skills will be necessary to ensure that we are ready to take advantage of this new world and way of living.

This is particularly relevant to the 34,600 workplaces in Birmingham of which the vast majority are small and medium sized enterprises. These are most likely to need advice and support, for example in how their operations and their markets might change because of climate change and possible severe weather events that might ensue and more generically on buildings and carbon management.

- Behavioural change actions in the homes through simple energy efficiency actions and procurement
- Behavioural changes in commercial and public sector by actions undertaken at individual level and management, including operational and procurement improvements
- A large number people actively participate in educational programmes designed to promote awareness raising and behaviours change to address climate change impacts and sustainability issues.
- Staff and managers participate in learning programme by 2013 and receiving accredited training in climate change management and innovation.
- Enable carbon to be saved as a result of better building efficiency and better business processes



Supporting individual and collective responsibility

Birmingham has established and delivered a range of support and advice services across the city that have captured the attention of a considerable number of individuals, for example:

- Climate Change Festival, held in 2008, with 181 events including a Hothouse discussion involving 135 people, and a Green Day for schools involving a large number of pupils, walking tours and a city centre “Dare to Dream” event.
- The ‘cutting CO2’ pledge web site that has secured over 24,000 pledges from individuals.

With regards to an advice service the Energy Saving Trust (EST) has launched its West Midlands Advice Centre providing support on energy efficiency, micro-

generation, personal transport, water efficiency and waste reduction. As part of their encouragement to households they are delivering 1000 display monitors into homes across Birmingham. Community based initiatives include the Summerfield Eco-Community development, the Faith and Climate Change event, a network of local sustainability forums and the EST Green Communities network promoting energy based projects in the community. Whilst it is recognised that there are pockets of good initiatives, it is key for best practice to be understood and promoted as part of a co-ordinated and consistent programme, this enables more value to be realised in our wider community, which incorporates our commercial and public sectors.

Strategic Action

Develop a Communications Programme on Climate Change To provide support, independent advice and encourage stakeholders to make informed decisions over actions and enable behavioural change to allow the most cost effective carbon reductions to be realised in our community. This should be in the form of a co-ordinated, branded, consistent and comprehensive communications campaign aimed at householders, workers, business leaders and visitors.

Ownership: Director of Corporate Communications
Key Strategic support: Director of Development, Environment & Culture, Environment Agency, Energy Savings Trust

First Phase Milestone

	year	quarter
Delivery Team Established	2010	1st
Resources and partners identified and confirmed	2010	2nd
Identify the barriers to decision making and behavioural change in the domestic and business environments	2010	3rd
Establish the opportunities with the intersects with home and buildings and transport initiatives	2010	2nd
Outline delivery programme for 2012, 2017 and 2022 targets and measurements	2010	2nd

Early Action 1 Co-ordinate the ‘Making Birmingham Green’ Communications Programme, integrating existing communications, celebrating the successful actions undertaken and utilises the Customer Knowledge Programme.

Early Action 2 Deliver an interactive web portal for Making Birmingham Green.

Early Action 3 Develop constituency based Climate Change and Sustainability Forums through the Constituency Strategic Partnerships to promote local climate change and sustainability actions.

Early Action 4 Work with the Homes and Buildings Programme to develop a communications campaign on the support and advice available for energy efficiency in the home. To include financial incentives, technology options and information to landlords.

Carbon Reduction Support for the Non-domestic Sector

It is recognised that many private and public sector organisations have some form of carbon management in place, such as the many Carbon Disclosure and Management Programmes adopted within public and private sector companies that includes the identification of baselines, disclosure of carbon emissions, planning of actions to reduce emissions. This coupled with the existing support functions from organisations such as the Carbon Trust, Business Link, Business in the Community and business sector energy and carbon forums can lead to growing emission reductions. However, there is a significant gap in business taking up the current support offering and in many cases this is not in a sufficient form or tailored for a company's need. Best practice is encouraged through the

Business in the Community 'C+ Carbon Positive Footprint' awards and 'roll of honour' and shown in such initiatives as the Brindleyplace and Calthorpe estate and the Smart metering pilots.

Sustainable procurement is a key tool to reduce emissions and overall carbon impact of an organisation, in Birmingham we operate a 'Going for Green' scheme that assesses the green credentials of potential suppliers and we have committed to adopting the Flexible Framework with the target of reaching Level 3 standard by 2011. In addition a Forward Commitment Procurement initiative has commenced to develop procurement practices that will support sustainable developments in key economic sectors.

Strategic Action

Develop a public and commercial sector carbon reduction programme. The programme will focus on ensuring that a co-ordinated tailored support campaign is developed for the non-domestic sector from all aspects of energy efficiency, low carbon technologies to the procurement of goods and services.

Ownership: Chamber of Commerce
Key Strategic support: Director of Environment & Culture, Environment Agency

First Phase Milestone

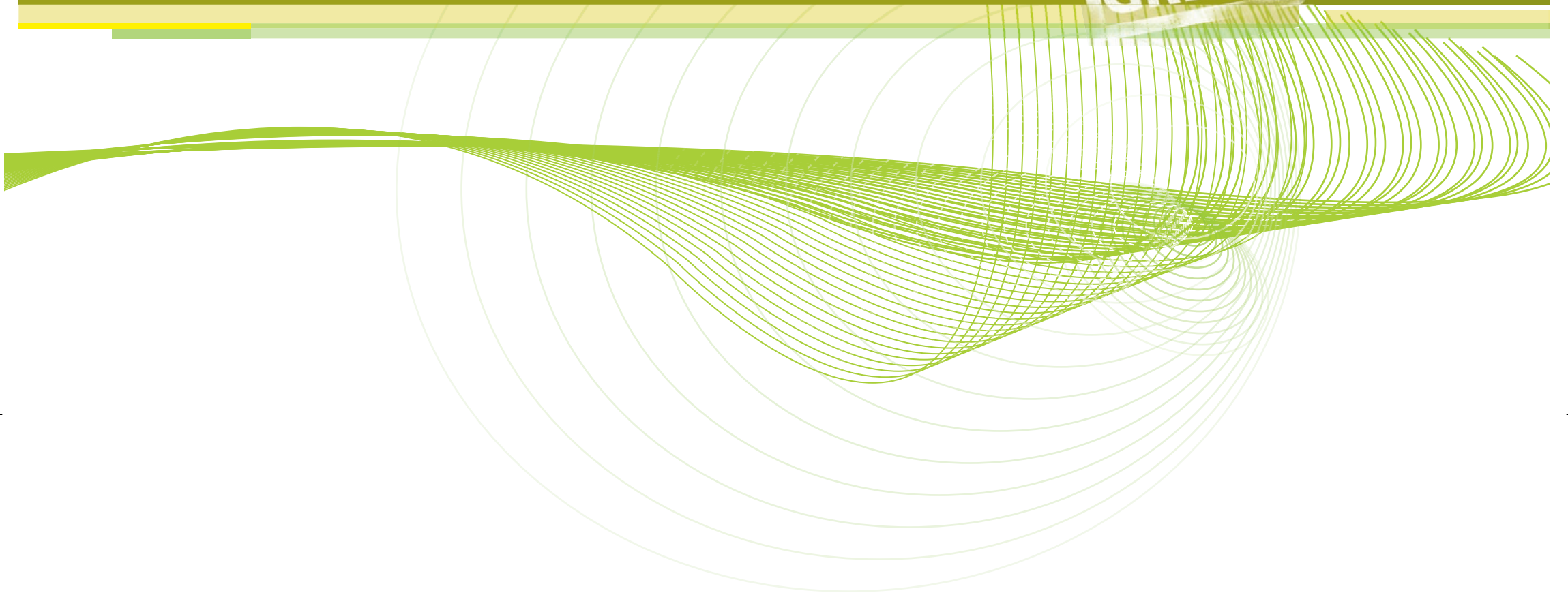
	year	quarter
Delivery Team Established	2010	3rd
Resources and partners identified and confirmed	2010	4th
Determine the investment costs and partnership options for the Programme	2010	1st
Outline delivery programme for 2012, 2017 and 2022 targets and measurements	2010	2nd

Early Action 1 Birmingham Environmental Partnership to take leadership role in delivering the carbon reduction programme and monitoring of the public sector approach and actions.

Early Action 2 Birmingham Environmental Partnership to develop a sustainable procurement programme for the public sector. This is to build on the progress made in the Procurement Compacts and adoption of the Flexible Framework. The programme will agree baselines, improvement targets and robust systems of monitoring and reporting on progress, whilst also leading a project to establish sustainable procurement standards and an incentives policy for contracting all public sector goods and services, based on an assessment framework and to include catalogue of low carbon priority products.

Early Action 3 Identify and support Climate Change Champions programme for organisational change and sharing good practice across all sectors.

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Section 9 Making it Happen and Keeping on Track

Governance

Birmingham is rightly proud of its partnership working. The delivery and implementation of this Action Plan will only be achieved through all sectors working together. The Audit Commission awarded a "Green Flag" for our partnership work to date in addressing climate change.

This approach will be sustained and enhanced by the City Council working with its partners through BeBirmingham. This Action Plan details the ownership responsibilities of the City Council's Strategic Directors taking forward this responsibility working through the BeBirmingham thematic partnerships as well as the BeBirmingham Executive.

It is also vital that the City Council's Cabinet has oversight of the strategic delivery of these actions. The City Council is the major provider of capacity to make sure that the key actions are promoted, designed and delivered for citizens and business in the city.

This does not mean that the City Council will necessarily be the direct means of delivery. But it will be in a central position to ensure that there is cohesion.

The Council is committed to a "commissioning" approach to future service delivery. In this Action Plan there are major opportunities to create new "commissioning partnerships" to deliver long term programmes for action. This is inherent in the City's approach through the "Total Place" analysis. Some of these are in effect already in place through for example:

- Service Birmingham – for example through the Business Transformation Programmes addressing the Council's green IT impact, and Working for the Future
- Digital Birmingham Partnership
- Highways PFI with Amey plc
- Buildings Schools for the Future with Catalyst Lend Lease

However, it is also evident that new partnerships are required

- with the energy companies providing power to the city need rapid development to drive forward the city's energy efficiency and "smart grid" ambitions, including district energy networks.
- to deliver the building retrofit agenda across all communities of the city.

The City Council will therefore be establishing a new Cabinet Committee which will

- provide strategic leadership oversight of the Birmingham Climate Change Action Plan
- take a strategic oversight of progress on the key actions contained in this Action Plan.
- drive the development of, oversee and monitor progression of the Birmingham Climate Change Action Plan to achieve the 2026 target of a 60% reduction in carbon emissions, and to ensure the city is adaptable to climate change.

The Be Birmingham Local Strategic Partnership will also play a key role through the both the Birmingham Environmental Partnership (BEP) and the City Housing Partnership.



BeBirmingham will receive annual reports on overall progress, and quarterly reports on high risk, high impact actions.

The Climate Change Carbon Reduction Partnership meets on a bi-monthly basis as one of four sub-groups of BEP. It will have the key monitoring role for Targets and timescales, outputs, outcomes and benefits identified in the Action Plan. It will also have a delivery responsibility for some of the broader communications, good practice and community actions. In most cases, however, the delivery responsibility for the various activity areas rests with another partnership or sub-group, with individual actions delegated to specific partner or retained by that partnership who will then commission a third party to deliver them as necessary.

The Delivery Structure is different for the various themes within the Climate Change Action Plan – with a clear owner within the City Council, working with an appropriate partner or partnerships to oversee the delivery and reporting on progress on that area. These will usually be existing mainstream delivery mechanisms. However learning from other Cities we will also explore potential joint delivery mechanisms if they help to lever in other funding, provide clear and accountable delivery, and deliver efficiencies and advantages beyond existing mechanisms.

Keeping on Track

All the Actions have measurable benefits, but, in many cases the first action is to update the baseline and update the monitoring. The City Council working with the BeBirmingham BEP will agree targets and timescales and surrogate measures to enable real time monitoring.

It is evident that with the increasing pressure of monitoring and evaluating actions, that this is an area which will need some additional support. This is especially important in reviewing the effectiveness of key actions.

The City Council's Cabinet Committee on Climate Change and the BeBirmingham BEP will receive quarterly reports on the progress of the Action plan.

The City Council will also ensure that performance is effectively monitored through the Council's Performance Plan.

The Action Plan will be refreshed on an annual basis and a full review will be commissioned in line with the 5 yearly national Carbon Budgets timetable.

October 2010 - First review of Action Plan progress (and quarterly updates thereafter)

June 2011 - First annual review of Action Plan

June 2012 - Second annual review and 1st major update of the Action Plan (in line with the Committee on Climate Change 1st 5 year plan period 2008-12)

June 2017 - 2nd major update of Action Plan (in line with CCC 2nd 5 year plan period 2013-17)



GLOSSARY

10:10 Campaign

A national campaign promoting up to a 10% reduction in carbon emission by end of 2010 by individual, business and other organisations including local authorities

Adaptation

Enabling organisations, local authorities to adapt to the effects of present and future extreme weather events, such as increased risk of flooding, adapting buildings for extreme heat and also in certain cases for greater likelihood of extreme wind event

Action Plan

A series of steps taken to accomplish a particular goal. Generally includes steps, milestones, measures of progress, responsibilities, assignments, specified resources and a time line.

Be Birmingham

The local strategic partnership that brings together partners from the business, community, voluntary, faith and public sectors to deliver a better quality of life in Birmingham.

<http://www.bebirmingham.org.uk>

BEST (Belief, Excellence, Success, Trust)

The set of values that Birmingham City Council aspires to when providing council services.

Biodiversity

General term to describe the variety of life forms (flora and fauna) in an ecosystem

Biomass

General term to cover potential of creating energy from wood reject parts, bark, tree wood

waste, vegetable and food waste, sewage sludge, plant material

Business Transformation

A set of programmes making fundamental changes to the way the Council works. It will help us deliver better services to citizens first time every time. It is not simply looking at how we do things, but reviewing what we actually do.

Carbon Footprint

A measure of overall contribution of carbon dioxide and other greenhouse gases into the atmosphere. It can relate to individuals, families, communities, companies, industries, products or services. It takes into account energy use, transportation methods, consumption of products and services and procurement.

Climate Change

Changes in weather patterns, rising sea levels and increased frequency and intensity of extreme weather. It is commonly attributed directly or indirectly to human activity.

CAA (Comprehensive Area Assessment)

A new way of assessing local public services in England. It examines how well councils are working with other public bodies to meet the needs of the people they serve.

CHP (combined heat and power)

A boiler that simultaneously produces electricity and heat through consumption of fuels.

Climate Change Act

The Act received parliamentary approval in November 2008. It sets a national target of a 80%

reduction in carbon emissions by 2050, set up the Climate Change Committee which determines the 5 yearly carbon budgets for the UK, and also sets down the obligations on climate change adaptation.

Constituencies

Birmingham is divided into 10 constituencies. Each has four wards with three councillors who sit on the constituency committee. Constituency committees enable local residents to influence the services they receive, and participate fully in running their local community.

CO2 (and CO2 equivalent)

A metric measure to compare the emissions from various greenhouse gases based upon their climate change potential. Methane has a CO2 equivalence of 21 and Nitrous oxide of 310

Core Cities

The core cities group is a network of England's eight major regional cities - Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle, Nottingham and Sheffield. Working in partnership with the Government to enable each city to improve economic performance and to be regarded positively as places to live, work, visit and do business.

Core Strategy

A framework for new development and land-use change in Birmingham up to 2026. The Core Strategy is expected to be adopted by 2011 and will be central to delivering the Growth Agenda. It is a statutory plan and will be subject to extensive public consultation and involvement, including an independent examination.

Council Plan 2010+

This is the City Council's Council Plan which explains how the Sustainable Community Strategy will be turned from vision into reality and also defines the sub-outcomes to help achieve the long term strategic outcomes.

Covenant of Mayors

A European Commission initiative to encourage local communities and cities to take action to deliver the European carbon emission, renewable energy targets. Birmingham signed the Covenant in January 2009.

"Cutting CO2 for a Smarter Birmingham"

This set down the city's ambitious target of a 60% reduction in carbon emissions by 2026. It was published during the Climate Change Festival held in June 2008

Ecological Footprint

The ecological footprint is a measure of 'load' imposed by a given population on nature. It represents the land area necessary to sustain current levels of resource consumption and waste discharged by that population into the indefinite future. Basically, it converts 'environmental space' into an area of land (footprint) and provides a useful, visual model to understand the impacts of our lifestyles on the environment.

Eurocities Declaration on Climate Change

Birmingham is a member of the Eurocities Network, an alliance of over 180 European cities to lobby for urban policies at the European level. The Eurocities Network has published a Declaration which shows how European cities are at the vanguard of addressing climate change mitigation and adaptation. Birmingham signed up in October 2008.

'fair share' of the Earth's resources

Worked out by dividing the sustainable global availability of energy and resources by the expected world population for a given year. In a fair and sustainable world, each country would consume more or less the same amount of resources relative to its population size.

Feed in Tariff

These are payments made to people and businesses which have installed solar electric

installation on their buildings. The first feed in tariffs will be paid from 1st April 2010

Green Roof

An installation on the roof of a building to reduce water run off during heavy rainfall. This helps to reduce the strain on drainage systems and help minimise localised flooding

Green Digital Charter

This a european wide initiative to encourage local authorities to reduce their carbon emissions through the use of digital technologies in the more efficient management and supply of energy. Birmingham signed in the Charter in November 2009.

Local Area Agreement

A three-year delivery framework for helping to deliver Birmingham 2026, the Sustainable Community Strategy. It is a set of targets agreed with local partners and with government. It allows local flexibility and freedom to use new ideas and schemes to achieve the city's vision.

Nottingham Declaration

By signing the Declaration councils and their partners pledge to systematically address the causes of climate change and to prepare their community for its impacts. Birmingham signed the Declaration in 2001

Partnership working

Working with different organisations towards a given cause.

Priority Neighbourhood programme

A programme to improve service delivery and overall quality of life for residents of the most deprived areas of Birmingham. 31 geographic neighbourhoods have been identified for the delivery of intensive neighbourhood management support.

Procurement

Planning, obtaining and purchasing the best services, supplies and construction work to meet the needs of citizens and service users.

Regional Spatial Strategy

Along with Local Development Frameworks, part of a two-tier plan system to determine how the regional planning system will help to shape communities. It sets out the broad spatial planning strategy of how a region should look in 15-20 years' time.

Renewable Energy

Energy coming from sources that are naturally renewable (eg biomass, hydro, wind, solar)

Sustainable communities

Communities where people want to live and work now and in the future

Sustainable Community Strategy – Birmingham 2026

The long-term partnership vision for the city

Working Neighbourhood Fund

Part of the Government's drive to tackle worklessness and low levels of skills and enterprise, focusing on areas of high deprivation.