



sustainableknowsley
Low carbon and renewable energy

Climate Change Strategy for the Knowsley Partnership

2012 - 2016

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Environmental Sustainability Service
Knowsley Council

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Foreword

Foreword from the Chair of the Knowsley Partnership

The Knowsley Partnership recognises that climate change is one of the greatest long term challenges facing the world today. A future of uncontrolled climate change will mean that flooding, heat waves and unpredictable weather will create upheaval in our borough, with already vulnerable residents most at risk.

Local authorities and their local partners are at the forefront of the UK's efforts to cut carbon dioxide emissions in their areas. We have a position of influence and a 'duty of care' to set our own houses in order and encourage the local community to follow in reducing their carbon emissions and preparing for the effects of climate change.

Knowsley's Sustainable Community Strategy (SCS) 2008 – 2023 includes action on climate change under the key driver 'Improving the offer and quality of place' and is also directly relevant to 'a well connected Knowsley', 'safer more cohesive communities' and 'a diverse and prosperous economy'. The SCS states:

'By 2023 we want to have a borough with low carbon emissions, and we will mitigate and adapt to climate change through the Borough's Climate Change Strategy, monitor and manage flood risks and address the environmental and health impacts of increased heat waves.'

Addressing climate change also has an impact on other areas and can contribute to the Social Growth agenda by empowering communities to take action, in addition to taking advantage of the opportunities arising from the move towards a green economy.

This strategy sets out our proposals, but our vision and objectives will only be achieved by recognising that everyone has a role to play, working in partnership to secure a better future for Knowsley.

Councillor Round

Chair of the Knowsley Partnership and Leader of Knowsley Council

[Photos and signature to be inserted once foreword has been approved](#)

Executive summary

Our vision

By **2023** Knowsley will be a borough with low carbon emissions from its businesses, organisations, communities and homes, will have prepared for the effects of climate change and have in place a strong and thriving low carbon economy.

Our target

We will aim to reduce CO₂ emissions by 31% from 2005 levels by 2020 from the following:

- Energy use in domestic, industrial and commercial properties (excluding those within the EU Emission Trading Scheme); and
- Road transport (excluding motorways).

Our current CO₂ emissions

From energy use and transport (excluding industrial installations that are covered by the European Union Emissions Trading Scheme and motorways)

Year	Total CO ₂ emissions (k tonnes)	Per capita CO ₂ emissions (tonnes)
2005	1239	8.3
2006	1196	8.0
2007	1138	7.6
2008	1045	7.0
2009	971	6.5
% reduction from 2005	22%	22%

Sector	Proportion of emissions
Energy use in industrial/commercial sector	46%
Energy use in residential properties	30%
Transport	24%

Our key objectives, actions and performance indicators

No.	Objective	Key projects	Performance Indicators	Targets
1	Embed carbon management and adapting to the effects of climate change across the work of the Knowsley Partnership	<ul style="list-style-type: none"> Partner Carbon Management and Climate Resilience Plans 	No. of partners with Plans in place	90% of partner organisations by April 2015
2	Ensure that the whole community (including residents and businesses) are prepared for the future effects of climate change	<ul style="list-style-type: none"> Development of a Knowsley Climate Resilience Plan 	Knowsley Climate Resilience Plan in place	Plan developed by April 2014
3	Reduce carbon emissions from energy use	<ul style="list-style-type: none"> CESP Schemes Stockbridge Village and Kirkby Cosy Knowsley Programme Business Environment Network Knowsley Industrial Park heat and power infrastructure 	Carbon emissions from energy use in Knowsley	Reduce CO ₂ emissions by 31% from 2005 levels by 2020 from energy use and transport
4	Reduce carbon emissions from travel	<ul style="list-style-type: none"> Local Sustainable Transport Fund scheme in Kirkby Knowsley Smarter Choices Programme Knowsley LTP3 Implementation Plan 	Carbon emissions from transport in Knowsley	Reduce CO ₂ emissions by 31% from 2005 levels by 2020 from energy use and transport
5	Reduce carbon emissions from waste production	<ul style="list-style-type: none"> Joint Recycling and Waste Management Strategy Knowsley Council Waste Management Action Plan 	Amount of residual waste from households in Knowsley	Delivery of 50% household waste recycling target by 2020 (Waste Framework Directive) Reduce the landfilling of Municipal Solid Waste to

No.	Objective	Key projects	Performance Indicators	Targets
				10% by 2020 and 2% by 2030 (Resource Recovery Contract target) Reduce the amount of Biodegradable Municipal Waste going to landfill by 65% of 1995 levels by 2020 (European Landfill Directive)
6	Reduce carbon emissions from water use	<ul style="list-style-type: none"> Water efficiency behaviour change programme 	Volume of water used per person in Knowsley	No target set
7	Develop and utilise our natural environment to reduce carbon emissions	<ul style="list-style-type: none"> Provision of quality green corridors Tree planting programme 	Carbon emissions as a result of direct, human-induced land use, land use change and forestry activities	No target set
8	Ensure new development is low carbon and adapted to climate change utilising the Local Plan	<ul style="list-style-type: none"> Development of an SPD 'Sustainability in Design and Construction' 	Adoption of the SPD	Adopted by December 2013
9	Develop a low carbon economy including skill development with the local workforce	<ul style="list-style-type: none"> Low Carbon Skills Hub Community Energy Fit Green Energy Task Force 	To be developed	N/A
10	Develop local community capacity for self-help on climate mitigation and adaptation including behaviour change programmes and environmental education	<ul style="list-style-type: none"> Social Growth Strategy Environmental Education Programme Community Energy Fit 	To be developed	N/A

1. Introduction

The global challenge of tackling climate change presents both major opportunities and risks for Knowsley. Economies that move now towards a low-carbon model will be well placed to benefit from new investment in so-called 'green collar' jobs and markets. However, a future of uncontrolled climate change will mean flooding, heat waves, and unpredictable weather creating upheaval in the UK, particularly affecting the vulnerable and poor.

Climate change is the result of the greenhouse effect: a naturally occurring system of retaining heat within our atmosphere which is enhanced by our activities on earth. Our activities (such as energy use) produce greenhouse gases such as CO₂ which form a layer around the earth and retains the sun's heat within our atmosphere.

The UK Climate Impacts Programme based at Oxford University released data in 2009 containing probabilistic information on the likely impacts of climate change.

Key findings for the North West in 2020 include:

- Warmer winters with increased precipitation;
- Hotter summers with decreased precipitation; and
- Increased severe weather events and storminess

The 'Stern Review' in 2006 concluded that the economic benefits of tackling climate change far outweigh the costs of dealing with the effects. According to Stern the cost of tackling climate change will amount to 1% GDP (gross domestic product) per year where the cost could amount to 5% per year.

The purpose of developing a strategy for the Knowsley Partnership is to agree a practical approach to tackle climate change that supports Knowsley's objectives to boost the local economy, protect us from severe weather, secure our energy supply, improve the health and wellbeing and the quality of life for our residents.

The coalition government, elected in May 2010, reinforced a national commitment to addressing climate change and announced that it would retain the Carbon Reduction Commitment Energy Efficiency Scheme, a key piece of legislation introduced by the previous administration under the Climate Change Act 2008. However, spending cuts as a result of the global financial crisis 2008/09, efficiency programmes and other policy decisions have changed the landscape within which we address climate change. For

example, the National Indicators and Local Area Agreements have been abolished and the North West Development Agency will be replaced with Local Enterprise Partnerships.

Government proposals on climate change are beginning to emerge, and a national Carbon Plan was launched in December 2011. The plan sets out how the Government will play its part in the global effort to tackle climate change and build a green economy.

In March 2011, a Memorandum of Understanding between the Local Government Group and the Government's Department of Energy and Climate Change (DECC) was agreed in acknowledgement of the pivotal role local government and its partners have in tackling climate change.

Knowsley is already carrying out a number of powerful initiatives to deal with climate change and examples are outlined throughout this strategy. Latest government data shows that Knowsley's per capita carbon emissions have reduced between 2005 and 2009 and remain slightly below the national average. Knowsley's Sustainable Community Strategy 2008 – 2023 also underlines the Knowsley Partnership's commitment to act on climate change, stating that by 2023 we want to have a borough with low carbon emissions, and that we will mitigate and adapt to climate change, monitor and manage flood risks and address the environmental and health impacts of increased heat waves.

Further to this, in October 2007, Knowsley Council signed the Nottingham Declaration on Climate Change and produced a Climate Change Strategy in October 2008. This 2008 Strategy included action on community CO₂ emissions in relation to the Council's role as a service provider and community leader. These actions have now been integrated into this Partnership Climate Change Strategy complemented by a separate Carbon Management Plan for Knowsley Council (2011-2016).

In developing this Knowsley Partnership Strategy, consultation has been undertaken with Thematic Partnerships within the Knowsley Partnership, businesses, residents, environmental groups, staff, young people, and elected members. An Equality Impact Assessment has also been undertaken.

Our approach to developing this strategy

This strategy sets out our vision for addressing climate change in Knowsley, along with a set of underlying objectives. Whilst developing the strategy, it has become evident that addressing climate change has become increasingly embedded within other strategies and action plans (see page 9). This strategy will, therefore become Knowsley's overarching document on climate change, referring to other relevant action plans where appropriate, to avoid duplication. Links to all relevant documents will be posted on the climate change pages of Knowsley Council's web site (www.knowsley.gov.uk) once finalised.

As stated above, Government proposals on addressing climate change are only starting to emerge, with the Carbon Plan published in December 2011. Each chapter outlines the relevant key Government proposals from the Plan. These proposals will be integrated within the relevant Action Plans as further details are outlined by Government.

Also identified are the key partnerships and fora relevant to each area. It will be the responsibility of the partners within these groups to ensure that the objectives of this strategy and Government proposals on climate change are integrated within

their plans.

Climate Change Policy Landscape 2012

National

Climate Change Act 2008	Energy Act 2011	Flood and Water Management Act 2010
Carbon Plan	Green Deal	
Climate Change Risk Assessment	Carbon Reduction Commitment	

City Region

Liverpool City Region Mini Stern Review	LCR Low Carbon Economy Action Plan	Mersey Forest Plan
LCR Sustainable Energy Action Plan	Local Transport Plan 3	Joint Recycling and Waste Management Strategy for Merseyside

Local

Knowsley Sustainable Community Strategy		
Knowsley Partnership Climate Change Strategy		
Knowsley Economic Regeneration Strategy	Sustainable Knowsley Low Carbon and Renewable Energy Action Plan	Merseyside LTP3 Knowsley Implementation Plan
Joint Recycling and Waste Management Strategy for Merseyside – Knowsley Plan	Knowsley Green Space Strategy	Knowsley Local Plan
Knowsley Climate Change Risk and Resilience Plan	Knowsley Housing Strategy	NHS Knowsley - Joint Strategic Needs Assessment

2. Vision and Objectives

Our Vision is:

By **2023** Knowsley will be a borough with low carbon emissions from its businesses, organisations, communities and homes, will have prepared for the effects of climate change and have in place a strong and thriving low carbon economy.

Our ten Key Objectives for this strategy are:

1	To embed carbon management and adapting to the effects of climate change across the work of the Knowsley Partnership
2	To ensure that the whole community including residents and businesses are prepared for the future effects of climate change
3	To reduce carbon emissions from energy use
4	To reduce carbon emissions from travel
5	To reduce carbon emissions from waste production
6	To reduce carbon emissions from water use
7	To develop and utilise our natural environment to reduce carbon emissions
8	To ensure new development is low carbon and adapted to climate change utilising the Local Plan
9	To develop a low carbon economy including skill development with the local workforce
10	To develop local community capacity for self-help on climate mitigation and adaptation including behaviour change programmes and environmental education

3. Overarching Policy Context

This section gives an overview of the policy context in respect of addressing climate change at international, national, regional and local levels. Both aspects of climate change are considered separately – adapting to the future effects of climate change and mitigating greenhouse gas emissions.

Government policies and proposals for specific areas (for example energy, waste, transport etc.) are considered separately in the relevant sections of this strategy.

3.1 International Policy

ADAPTATION

An international **Adaptation Framework** was established at the **Cancun Climate Change Conference** in December 2010. The objective of the framework is to enhance action on adaptation through international co-operation and coherent consideration of matters relating to adaptation under the United Nations Framework Convention on Climate Change (an overall framework for intergovernmental efforts to tackle the challenge posed by climate change which includes a requirement for governments to co-operate in preparing for adaptation to the impacts of climate change).

In April 2009 the European Commission presented a **White Paper on adapting to climate change** which presents the framework for adaptation measures and policies to reduce the European Union's vulnerability to the impacts of climate change. The White Paper highlights the need "to promote strategies which increase the resilience to climate change of health, property and the productive functions of land, inter alia by improving the management of water resources and ecosystems." The European Commission will launch its Adaptation strategy in 2013.

MITIGATION

The **Kyoto Protocol** is an international agreement to reduce greenhouse gas emissions such as carbon dioxide. It came into force in February 2005 and is legally binding to those countries that have ratified it (like the UK). The UK's target is to reduce emissions by 12.5% below 1990 levels between 2008-2012. Following an international climate change meeting in Copenhagen at the end of 2009, a summit was held in Cancun, Mexico in December 2010, to further international agreement on climate change away from the Kyoto protocol. Key agreements from the high profile event included:

- an agreement to limit peak emissions;
- an overall 2°C degree target to limit temperature rise; and
- an established Green Climate Fund to help developing countries become low carbon and adapt to climate impacts.

The Kyoto Protocol was to be renegotiated in December 2011 at the 17th Conference of the Parties of the United Nations Framework Convention on Climate Change (COP17) in Durban. The agreement of all countries involved in the talks was that a universal legal agreement on reducing emissions would be reached as soon as possible and no later than 2015.

3.2 National Policy

ADAPTATION

The Government recognises that it has a role to play in supporting people and businesses to overcome the barriers encountered with respect to adapting to the effects of climate change (for example lack of information, complexity of decisions required, financial constraints). However, action at a local level is paramount. In March 2010, the **Environmental Audit Committee** published the results of their inquiry into **Adapting to Climate Change**. In its evidence to this inquiry, the Local Government Association said: *'it is Councils, rather than central Government, who should take the lead in deciding what changes are needed in their local area. The specific needs of local communities cannot be understood, prioritised and planned for at a national level.'*

The **Coalition Government** agreed with this in their **response to the inquiry** in August 2010. The response also set out the principles of the Government's approach to adaptation:

- clarity that work will be based on evidence and the best information that science can provide;
- transparency and a willingness to invite scrutiny and challenge, including from the independent Adaptation Sub Committee;
- a continued emphasis on adaptation which is governed by the principles of sustainable development; and
- recognition that adaptation needs to be addressed at a much more local level, without the heavy hand of bureaucracy or the outdated thinking of centralisation and top-down control.

The **Climate Change Act 2008** also created a framework for building the UK's ability to adapt to climate change. This included:

- a UK wide climate change risk assessment that must take place every five years;
- a national adaptation programme which must be put in place and reviewed every five years to address the most pressing climate change risks to England; and
- a mandate giving the Government the power to require 'bodies with functions of a public nature' and 'statutory undertakers' to report on what they are doing to address the risks posed by climate change to their work.

The UK Government's first Adaptation Programme is expected in 2012.

MITIGATION

The **UK Climate Change Act 2008** sets legally binding carbon budgets with the long term goal to reduce CO₂ emissions by a very challenging 80% by 2050. As part of the Act, the **Carbon Reduction Commitment Energy Efficiency Scheme (CRC)** has established a new mandatory carbon reduction scheme designed to drive public and private organisations to improve energy efficiency and reduce the amount of carbon dioxide emitted in the UK.

The CRC covers all organisations whose electricity consumption was equivalent to an annual electricity bill of £0.5m in the qualification year of 2008. Therefore, Knowsley Council along with partners including Merseyside Police, Merseyside Fire and Rescue Service and Merseytravel must comply with the scheme (KHT and Villages Housing are

not included in the CRC due to the scale of their activities not being large enough). Carbon allowances must be purchased for each tonne of carbon dioxide (CO₂) emitted from energy use in buildings (currently £12 per tonne).

The Government's **Carbon Plan**, released in December 2011, gives even greater detail about how the Government intends to achieve the challenging targets set out in the legally binding carbon budgets. The Plan states that the Government is determined to address the twin challenges of tackling climate change and maintaining our energy security in a way that minimises costs and maximises benefits to our economy. Sectoral plans are presented for:

- Low carbon buildings – energy efficiency and low carbon heating;
- Low carbon transport;
- Low carbon industry;
- Low carbon electricity; and
- Agriculture, land use, forestry and waste

The detail of these plans is presented further in Chapter 6 of this Strategy.

Other specific policy and legislation is beginning to emerge, for example the **Energy Act 2011** mainly concerns the roll out of the 'Green Deal' to householders (enabling householders to invest in energy efficiency improvements at no upfront cost – this will be recovered from energy bill savings). The renewable heat incentive (RHI) has been launched (providing premium payments for the purchase of green heating systems) and a roll out of smart energy meters to all households (gas and electricity meters to monitor and manage energy consumption) is proposed, whilst a White Paper on sustainable local transport has been published.

In 2008 the European Parliament voted through the **EU Renewables Directive**. This breakthrough agreement committed the EU to sourcing 20% of its energy from renewable sources by 2020. Under the legislation, the UK has a target of sourcing 15% of its energy from renewables (such as wind power and solar energy) by 2020. The Government has introduced incentive schemes for small scale renewable electricity and heat generation in the form of the Feed in Tariff (FIT) and Renewable Heat Incentive (RHI) respectively. Both schemes consist of a guaranteed amount per kwh produced and a generation fee creates an income stream for the owner which can be used by residents, communities and businesses.

A **Memorandum of Understanding** (MoU) between the Local Government Group and the Government's Department of Energy and Climate Change (DECC) was launched in March 2011. This was agreed in acknowledgement of the pivotal role local government has in tackling climate change. It set out the partnership arrangements between DECC and the Local Government Group and how the local government offer on climate change would be progressed over the subsequent twelve months.

One of the key milestones of the MoU is to develop and launch a new Nottingham Declaration for Councils called 'Climate Local'. This will enable councils to re-state their commitments to action on climate change both within their own estate and in the local community. The package will include the development of a council framework on climate change - a resource that sets out a 'journey' that councils could undertake to strategically tackle the issues of climate change mitigation and adaptation, in addition to a suite of indicators and resources.

3.3 Regional Policy

ADAPTATION

To date, regional work on climate change adaptation has been taken forward by the North West Climate Change Partnership and NW Climate Change Adaptation Group. The Partnership developed the **North West Climate Change Action Plan 2010 - 2012: 'Rising to the Challenge'** which set out as a priority that the North West of England is to become 'well-adapting by 2020'.

In March 2011 the North West climate change adaptation framework (**Adaptation for Sustainable Economic Growth**) was published by the Environment Agency and North West Development Agency. The document:

- sets out the national context for climate change adaptation;
- outlines the expected broad climate change impacts the North West's businesses, communities and environment will face;
- highlights the significant thinking and activity to manage these that is already happening;
- summarises the initial assessment of the adequacy of our current climate change activity; and
- identifies gaps in our capacity and preparedness and possible areas for further action and support needed to address these.

In 2012, as part of the Government's National Climate Change Adaptation Risk Assessment, a report was produced which analysed the risks and opportunities for the North West as a region. The document was developed by Climate UK and the North West Climate Change Partnership.

MITIGATION

In 2010, the Government announced the abolition of the North West Development Agency (NWDA), whose Climate Change Unit had previously endeavoured to coordinate action on climate change in the North West of England in the context of the Regional Economic Strategy. The North West Climate Change Partnership has continued to operate, coordinated by Climate Change Northwest (part of Climate UK and supported by the Environment Agency). The Liverpool City Region is represented on this partnership by the Merseyside Environmental Advisory Service and Liverpool City Council.

In the Liverpool City Region (LCR) one of the partnership platforms established through the Multi-Area Agreement signed in 2009 was the Low Carbon Economy Committee. This Committee produced a LCR Low Carbon Economy Action Plan in 2011, which concluded that the Merseyside area has some significant potential assets to exploit the opportunities from the low carbon economy, which could see up to 12,000 new jobs created in energy and environmental technology and service sectors in the next few years. Building on this work, a Sustainable Energy Action Plan (SEAP) for the LCR has been prepared with assistance from the Government's Climate Change Skills Fund. Work has been coordinated by Merseyside Environmental Advisory Service with the support of Arup, Local Enterprise Partnership and six City Region Councils. The first edition of the SEAP was launched in July 2012 and provides a vision and programme for the City Region to co-

ordinate its energy sector ambitions, advance projects and bring greater resilience to its energy networks.

3.4 Local Policy

ADAPTATION AND MITIGATION

Knowsley's Sustainable Community Strategy 2008 – 2023 includes action on climate change under the key driver 'Improving the offer and quality of place' and is also directly relevant to 'a well connected Knowsley', 'safer more cohesive communities', 'unlocking the potential and raising aspirations' and 'a diverse and prosperous economy'. The strategy states that by 2023 we want to have a borough with low carbon emissions, and we will mitigate and adapt to climate change through the Borough's Climate Change Strategy, monitor and manage flood risks and address the environmental and health impacts of increased heat waves.'

As outlined in the introduction above, there are a range of other sector specific local policies and strategies that address climate change such as the Knowsley Local Plan, Housing Strategy, Local Transport Plan for which more detail is given in the following chapters.

4. Addressing climate change across the Knowsley Partnership

Key Objective 1:

To embed carbon management and adapting to the effects of climate change across the work of the Knowsley Partnership

4.1 Governance

Climate change is an issue that is relevant to all partners within the Knowsley Partnership (LSP), for example:

- NHS Knowsley – reducing carbon emissions from NHS buildings, health impacts of future climate change, fuel poverty;
- Knowsley Chamber – supporting businesses to reduce their carbon emissions and adapt to future climate change;
- Knowsley Housing Trust and Villages Housing – reducing carbon emissions from domestic properties;
- Merseyside Recycling and Waste Authority – reducing carbon emissions from waste management, treatment and disposal;
- Merseytravel – reducing carbon emissions from the transport system; and
- All – reducing carbon emissions from their own organisations and ensuring their buildings and services are resilient to future climate change.

In addition, all partners within the Knowsley Partnership have a role to play within Thematic Partnerships and Area Partnership Boards' delivery planning which should respond to the climate change agenda. There are also a number of other partnerships, groups and networks across the borough that can contribute to addressing climate change.

Knowsley Council has taken a lead co-ordinating role in developing the strategy, working in a collaborative manner with partners. The Council will also provide support to partners in meeting their obligations under this Strategy and take the lead responsibility in monitoring progress and undertaking reviews of the Strategy.

This will be overseen by the Knowsley Partnership Board who will approve the strategy and oversee its implementation. Thematic Partnerships and groups will oversee individual plans relevant to their remit and this is outlined in the following chapters.

Development of the Strategy is a key project within the Sustainable Knowsley Programme. This has been established by Knowsley Council to provide a single programme approach

to implementing Knowsley's low carbon and renewable energy initiatives in conjunction with partners and progressing the transition to a low carbon economy. The Sustainable Knowsley Low Carbon and Renewable Energy Action Plan is key to achieving the objectives of this strategy and is attached at Appendix A.

4.2 Embedding action across the Knowsley Partnership

To ensure that real progress is made in addressing climate change we need to ensure that organisations across the Knowsley Partnership set the lead in taking action to reduce their own carbon emissions and to adapt to climate change. We also need to ensure that when decisions are taken by agencies within the Partnership, the impacts of those decisions on climate change are also addressed, and the priorities and targets in this strategy are translated into the relevant operational plans.

All partner organisations within the Knowsley Partnership will be requested to make a commitment to:

- Put Carbon Management Plans in place which include a baseline review of emissions, setting of carbon reduction targets, action plans and monitoring arrangements (target: 90% of partner organisations by April 2015);
- Assess the risks to their organisations from future climate change and develop strategies to reduce this risk (target: 90% of partner organisations by April 2015); and
- Assess the impact of climate change in their decision making processes (target: 90% of partner organisations by April 2014).

Examples of partner action on carbon management

Knowsley Council's Carbon Management Plan - Cutting Carbon, Cutting Costs

In 2010, Knowsley Council joined the Carbon Trust's Local Authority Carbon Management Programme and have developed a five-year Carbon Management Plan to April 2016. An interim target of a 22% reduction in carbon emissions from the 2009/10 baseline has been set, with an aspirational target of a 41% reduction by 2016. Identified projects include voltage optimisation, lighting replacement, asset rationalisation (reducing the number of buildings owned by the Council from 122 in 2009 to 62 in 2011) and a staff behaviour change programme. Knowsley Council have also produced a Greenhouse Gas Emissions Report 2010-11 which is available on their web-site www.knowsley.gov.uk

Merseytravel

Carbon Management, Environmental Strategy and the Local Transport Plan

In early 2009, Merseytravel became the first Passenger Transport Executive and Integrated Transport Authority to achieve certification to the Carbon Trust Standard, by reducing their carbon footprint by 7% in two years between 2006 to 2008. They have also developed a Carbon Management Plan with the Carbon Trust, with the aim of reducing emissions a further 24% by March 2016. An Environmental Management System certified to ISO 14001 has been in place since 2003. The current Merseytravel Environmental Strategy (2011-2016) sets emissions reductions from transport and travel as one of its six

priorities and includes behavioural change initiatives such as Smarter Choices as well as solutions to address the impact of public and private transport.

Merseyside Fire and Rescue Service (MRFS)

Merseyside Fire and Rescue Service was the first fire service to develop a formal Environmental Management System, receiving accreditation to the international standard ISO14001 in October 2004. Merseyside Fire Authority remains committed to the environmental agenda and the Chair of the Authority and Chief Fire Officer have both committed MFRS to the environmental policies that have been in place since 2003. MFRS signed up to the Nottingham Declaration on Climate Change in 2008 and entered a partnership with The Carbon Trust, which resulted in the approval of a Carbon Management Plan, committing the Authority to an ambitious 30% reduction in carbon emissions from a 2007/08 baseline to 2013. Such organisational commitment has driven impact reducing and cost saving work including high efficiency boilers, building management systems, cycle to work schemes, environmental champions (all sites), pollution prevention, waste minimisation, water efficiency, hazardous waste management and partnerships with North West and UK Fire Services, local authorities and public sector organisations.

Merseyside Recycling and Waste Authority (MRWA)

MRWA through its current Waste Management and Recycling Contract has ensured that all 16 Household Waste and Recycling Centres and Waste Transfer Stations are environmentally managed under the auspices of an Integrated Management System (IMS). In addition, the contract ensures that the carbon footprint of waste management is reported annually. Since the contract began in 2009, the carbon footprint has fallen by 16,000 tonnes. It is expected that when the Resource Recovery Contract begins in the near future the carbon footprint will be reduced significantly.

5. Adapting to Climate Change – Risk and Resilience

Key Objective 2:

To prepare for the future effects of climate change in Knowsley

5.1 Future impact of climate change in Knowsley

5.1.2 National Predictions

In 2002, the UK Climate Impacts Programme (UKCIP) published a range of climate change scenarios, derived from a series of climate modelling experiments (commonly known as the 'UKCIP Scenarios'). These have now been updated and in July 2009, the UK Climate Projections 2009 were released. The projections contain probabilistic information on the likely effects of climate change and the likely changes in weather patterns.

Key findings for 2020 (given a scenario of 'medium' carbon emissions) for the North West include:

- Warmer winters with increased precipitation;
- Hotter summers with decreased precipitation; and
- Increased severe weather events and storminess.

By 2080 the same trends continue but with higher temperatures, and steeper changes in precipitation patterns. The projections are very detailed and training has been received in order that the specific data for Knowsley can be analysed and fed into our on-going work on adapting to climate change.

Defra has recently published research into the potential risks and opportunities posed to the UK by Climate Change. The UK Climate Change Risk Assessment (CCRA) is a comprehensive analysis conducted using the latest information available and will be refreshed every five years. The key messages to emerge from the CCRA are as follows:

- The global climate is changing and warming will continue over the next century;
- The UK is already vulnerable to extreme weather including flooding and heat waves;
- UK water resources are expected to come under increased pressure;
- Potential health benefits and threats will affect the most vulnerable in society;
- Sensitive ecosystems are likely to come under increasing pressure; and

- Climate impacts across the world will be more significant but could have significant indirect impact in the UK (e.g. supply chains).

5.1.3 North West Predictions

The CCRA is a national study aimed at providing a broad view of risks faced by the UK over the next century. As part of the study information has been developed for the North West region by the organisation ClimateUK in its publication – ‘A summary of Climate Change Risks for North West England’. Some of the key risks highlighted are as follows:

- North West businesses will see an increase in damages from flood risk due to climate change, and this is the most significant threat to our economy unless continual action is taken;
- Health in the North West could be particularly impacted by climate change due to our high levels of deprivation and vulnerable households, particularly in our most dense urban areas at higher risk of flooding and heat island effect;
- 147,000 properties in the North West are currently at risk from river and coastal flooding. This will increase with climate change, and the value of property potentially non-mortgageable and uninsurable by 2080 is the highest outside of London; and
- Increased temperatures will impact on our dominant livestock farming sector particularly through animal health and pests/diseases, and increased rainfall will impact through increased waterlogging.

Climate Change will also present some regional opportunities:

- There is a significant opportunity to use green infrastructure to both manage climate impacts of health, promote healthy low-carbon lifestyles and to provide wider community benefits;
- The North West is likely to see a relatively lesser change in the agroclimate compared to the South East, however, due to the nature of our agri-economy there will still be opportunities for new crops and higher yields, and also increased vulnerability caused by water availability and extreme events; and
- Opportunities exist to build the North West’s ecosystem services through capitalising on the many benefits of effective management and improved green infrastructure to combat climate change.

5.1.4 Key impacts

Two of the key areas that will need to be addressed include the impact of climate change on health and the natural environment.

Health

In January 2012, Liverpool John Moores University released a study looking at the likely health impacts as a result of climate change in the North West. Some of the key findings were:

- High levels of air pollution and periods of hotter than average temperatures are associated with increased risk of respiratory illnesses;
- Exposure to warmer spells of temperature may increase the risk of cardiovascular disease;
- Increased exposure to UV radiation due to ozone layer depletion is associated with increased risk of skin cancers;

- Young children and individuals with impaired thermoregulation, including the elderly and those on medications, are believed to be particularly at risk during heat waves as their bodies are less able to regulate temperature and are therefore at risk of overheating, dehydration and heatstroke; and
- Heat waves may increase risk of mortality and psychological problems among people with mental health problems.

The study also outlines a framework for action that can be used as a basis for tackling the threats to health associated with climate change.

Natural environment

In addition to health, one of the major impacts of climate change will be on our natural environment including green spaces, biodiversity, geodiversity, access and landscape. Under Section 40 of the Natural Environment and Communities Act 2006, public authorities have a duty to have regard to the conservation of biodiversity in exercising their functions. A key action in this strategy is to develop a comprehensive, risk-based climate change resilience plan for Knowsley. This plan will fully assess the risks of climate change on the natural environment in Knowsley including the conservation of biodiversity.

5.2 Current impact of severe weather in Knowsley

A trawl of local media articles undertaken to compile a Local Climate Impact Profile (LCLIP) for Knowsley, highlighted some of the impacts on Merseyside. Below are just a few examples:

- “Business booms as the sun shines on Merseyside” (Liverpool Daily Post, 26/03/2012);
- “Flooding and high winds cause weather chaos in Merseyside” (Liverpool Echo, 7/02/2011);
- “Flash floods hit Liverpool and Merseyside after heavy rain” (Liverpool Daily Post, 21/07/2010);
- “City sizzles as mercury rises” (Liverpool Daily Post, 30/06/2009);
- “Driver dies after flooding crash” (BBC Merseyside News, 12/05/2008); and
- “Storms cause chaos across region” (Liverpool Daily Post, 18/01/2007).

In addition, research undertaken to date by Knowsley Council has highlighted some of the recent impacts of severe weather on the Borough which may increase in the future, for example:

- Flooding incidents causing damage to property and green spaces;
- Disruption to outdoor events;
- Uncomfortable working conditions during heat waves; and
- Closure of schools due to flash floods.

Therefore to fulfil the vision of Knowsley’s Sustainable Community Strategy for Knowsley to be the ‘Borough of choice’, it is essential that we ensure Knowsley is well adapted and resilient to cope with the future effects of climate change.

5.3 Action taken to address adapting to climate change

National Indicator 188

Local authority work on climate change adaptation has to date been governed by National Indicator 188 'Planning to adapt to Climate Change'. Knowsley Council achieved Levels 0 and 1 by April 2010. This involved identifying both the impacts and the opportunities/vulnerabilities presented by a changing climate and developing a Local Climate Impacts Profile. The National Indicators have now been withdrawn – see Section 5.4.

Managing Flood Risk

Knowsley Council, as the Lead Local Flood Authority under the provisions of the Flood and Water Management Act 2010 (FWMA), has prepared a Preliminary Flood Risk Assessment (PFRA) in order to meet the requirements of the Flood Risk Regulations (FRR) 2009. The main aim of the PFRA was to gather and review available information on past flooding incidents and their consequences and also assess the potential consequences of future flooding in relation to surface water, groundwater and ordinary watercourses. The PFRA report was approved by the Environment Agency in October 2011 and published on the council's website.

In addition, a Level 1 Strategic Flood Risk Assessment (SFRA) for Knowsley was completed in June 2009. It was prepared in accordance with government guidance in Planning Policy Statement 25 (PPS25) 'Planning and Flood Risk' (2006) and its associated Good Practice Guide.

The Council will produce a level 2 SFRA in 2012. This will give further detail in relation to the flood risk associated with key development and regeneration sites proposed by Knowsley's Local Plan.

Highways Asset Management Plan (HAMP)

Recent extreme weather events have accelerated the deterioration of the highway network. If more extreme weather events can be expected in the future it will put the transport system under increased stress. Knowsley Council's Highways Asset Management Team is currently preparing a Highways Asset Management Plan (HAMP). The HAMP will allow the better management of the highway assets based on their condition. The plan will be useful in setting priorities and will enable the identification and management of risks more effectively. Through the HAMP development, materials and maintenance treatments that are more resilient to climatic variations can be identified.

Knowsley Heatwave Plan

During a heatwave there is often a rise in mortality, particularly among vulnerable people

and certain at-risk groups. A prolonged heatwave may cause increased public health problems; for example, higher levels of respiratory and cardiovascular diseases, and also environmental problems; for example, increased pollutants from traffic congestion.

In order to prepare for heat waves, Knowsley Health and Wellbeing prepare an annual Heatwave Plan which is designed to ensure that the organisation can respond quickly to the needs of those who are most vulnerable during periods of extreme weather, and that all key health and social care professionals work together to reduce the risks to health.

The purpose of the Heatwave Plan is to:

- Identify lead managers with responsibility for responding to the plan;
- Explain the 'Heat Health Watch' system – a heatwave warning system with four levels, based on Met Office forecasts – and associated actions required by Knowsley Health and Wellbeing and Knowsley Integrated Provider Services (KIPS) at each level;
- Identify and disseminate advice and information issued to the local NHS by the Department of Health, before and during a heat wave;
- Ensure the identification of those individuals most at risk to ensure they are the first to receive advice on preventive measures; and
- Identify where non-statutory agencies and families can offer support, and be identified in an individual's care plan.

5.4 Key Government proposals

The Coalition Government abolished the National Indicators in 2010. This included NI 188 'Planning to Adapt to Climate Change' which had guided Knowsley's work in this area. However, following a report by the Climate Change Committee's Adaptation Sub Committee in late 2010, Defra wrote to all local authority chief executives urging them to continue the good work on climate change adaptation. The letter also urges organisations and businesses to 'climb the ladder' of adaptation.

The Government have outlined their commitment to adaptation further in the document "Government response to the conclusions and recommendations of the Environmental Audit Committee: Adapting to Climate Change, Sixth Report of Session 2009-10" (See Section 3.2 above).

In May 2011, the Government published 'Climate Resilient Infrastructure: Preparing for a Changing Climate'. This outlines the Government's vision and policy on adapting infrastructure to climate change in the energy, ICT, transport and water sectors.

The Flood and Water Management Act 2010 implements Sir Michael Pitt's recommendations requiring urgent legislation after his review of the flooding in 2007 and is central to reducing the flood risk associated with extreme weather. Local authorities will have new duties and powers under the Act through the new role of the lead local flood authority. However, working in partnership will be key and the Act enables effective partnerships to be formed between the local authority and other relevant authorities who retain their existing powers (with some enhancement).

5.5 How this work will be taken forward

In light of the significant risks to be managed as detailed above, we will develop the work undertaken to date to produce a **risk based climate change resilience plan for Knowsley**. Other strands of work will also address climate change resilience where relevant, including:

- Knowsley NHS Joint Strategic Needs Assessment;
- Knowsley Local Flood Strategy; and
- Liverpool City Region Green Infrastructure Framework.

Relevant Partnerships and Fora:

- Knowsley Resilience Action Group;
- Health and Well-being Partnership;
- Safer Knowsley Partnership;
- Environmental Hazards Committee; and
- Knowsley Joint Flood Risk Group.

6 Mitigating climate change - reducing our carbon emissions

6.1 The causes of climate change

A report by the Intergovernmental Panel on Climate Change (IPCC) in 2007 concluded that it was at least 90% certain that human emissions of greenhouse gases are warming the earth's surface rather than natural variations. Work on the IPCC's 5th Assessment Report is now underway and is expected to be published in 2013/14.

A publication by the Royal Society (Climate Change: A Summary of Science, September 2010) concluded:

“There is strong evidence that changes in greenhouse gas concentrations due to human activity are the dominant cause of the global warming that has taken place over the last half century. This warming trend is expected to continue as are changes in precipitation over the long term in many regions. Further and more rapid increases in sea level are likely which will have profound implications for coastal communities and ecosystems.”

The Government's recent Carbon Plan states that climate change is one of the greatest threats to both UK and global security and prosperity. There is almost 40% more carbon dioxide in the atmosphere than before the industrial revolution and 2000 – 2009 was the warmest decade on record since at least the 1850's (source: Met Office).

The process of climate change is as follows: as the sun warms the earth, some of the energy reflected back towards space becomes trapped by gases in the atmosphere, keeping the heat in. This is a natural process known as the greenhouse effect. When we use gas and electricity, travel in cars, send waste to landfill and make significant land use changes, greenhouse gases such as carbon dioxide (CO₂) and methane are emitted. There is strong scientific consensus that this human activity is making the greenhouse effect stronger, causing global warming and the earth's climate to change unnaturally.

It is therefore clear that to lessen the future effects of climate change, we need to reduce our greenhouse gas emissions.

6.2 Knowsley's CO₂ emissions and targets

6.2.1 Knowsley's total and per capita CO₂ emissions

In terms of quality information on the borough's Greenhouse Gas (GHG) emissions, the best available data relates to 'Scope 1' and 'Scope 2' CO₂ emissions (as defined under the IPCC's GHG Protocol).

Scope 1

GHG emissions that occur within the territorial boundary of the city or local region

Scope 2

Indirect emissions that occur outside of the city boundary as a result of activities that occur within the city, limited to only:

- Electricity consumption
- District heating, steam and cooling

Scope 3

Other indirect emissions and embodied emissions that occur outside the city boundary, as a result of activities of the city (e.g. solid waste disposal, wastewater handling, aviation, embodied emissions etc.)

CO₂ emission data for the calendar year 2009 was published by the Government's Department of Energy and Climate Change (DECC) in September 2011 and this is the latest data available. At the same time revised data was published for 2005, 2006, 2007 and 2008. Data for 2010 is expected September 2012.

Emission sources included in the DECC figures are energy use in domestic, industrial and commercial properties, road transport, changes in land use and forestry. However, it has been recognised that there are certain elements that local authorities and their partners have little or no control over. A separate set of data is therefore also published that solely relates to:

- Energy use from domestic and industrial/commercial properties, but excluding industrial installations that are covered by the European Union Emissions Trading Scheme; and
- Road transport excluding motorways.

Waste is not included within these figures. However, when waste degrades in landfill sites it releases carbon dioxide and methane, both greenhouse gases. Knowsley Council collates data on the amount of municipal waste sent to landfill and CO₂ emissions can be calculated from this data (see section 6.5).

Similarly, water use is also excluded from these figures. However, the treatment and supply of water results in the use of energy and carbon emissions (see section 6.6).

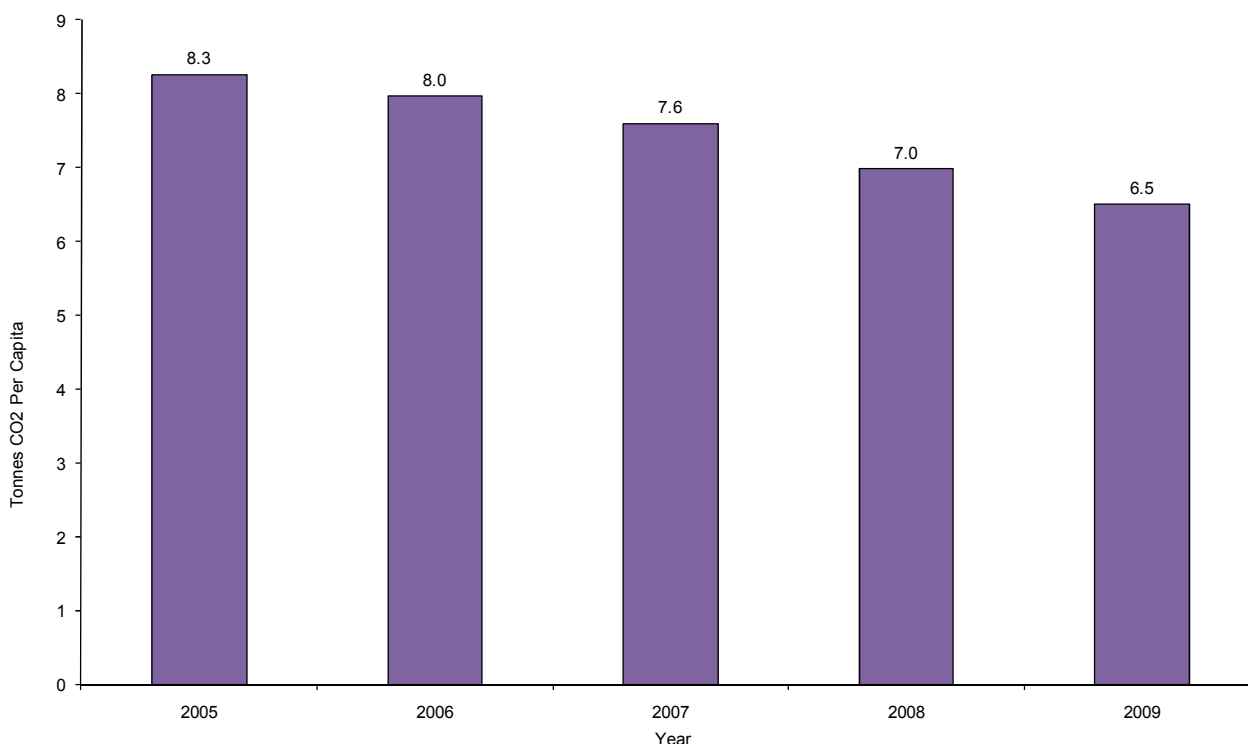
This data set was formerly used for the National Indicator 186 and the data will continue to be provided as a National Statistic. It will, therefore, be used as the main data set for this strategy.

In 2009, Knowsley's emissions in relation to this 'local' data set were 6.5 tonnes per head of the population and 971,000 tonnes in total. This highlights a continuous reduction since 2005 and 22% reduction overall (Table 1, Figure 1).

Table 1. Knowsley's CO₂ emissions 2005 to 2009

Year	Total CO ₂ emissions (k tonnes)	Per capita CO ₂ emissions (tonnes)
2005	1239	8.3
2006	1196	8.0
2007	1138	7.6
2008	1045	7.0
2009	971	6.5
% reduction from 2005	22%	22%

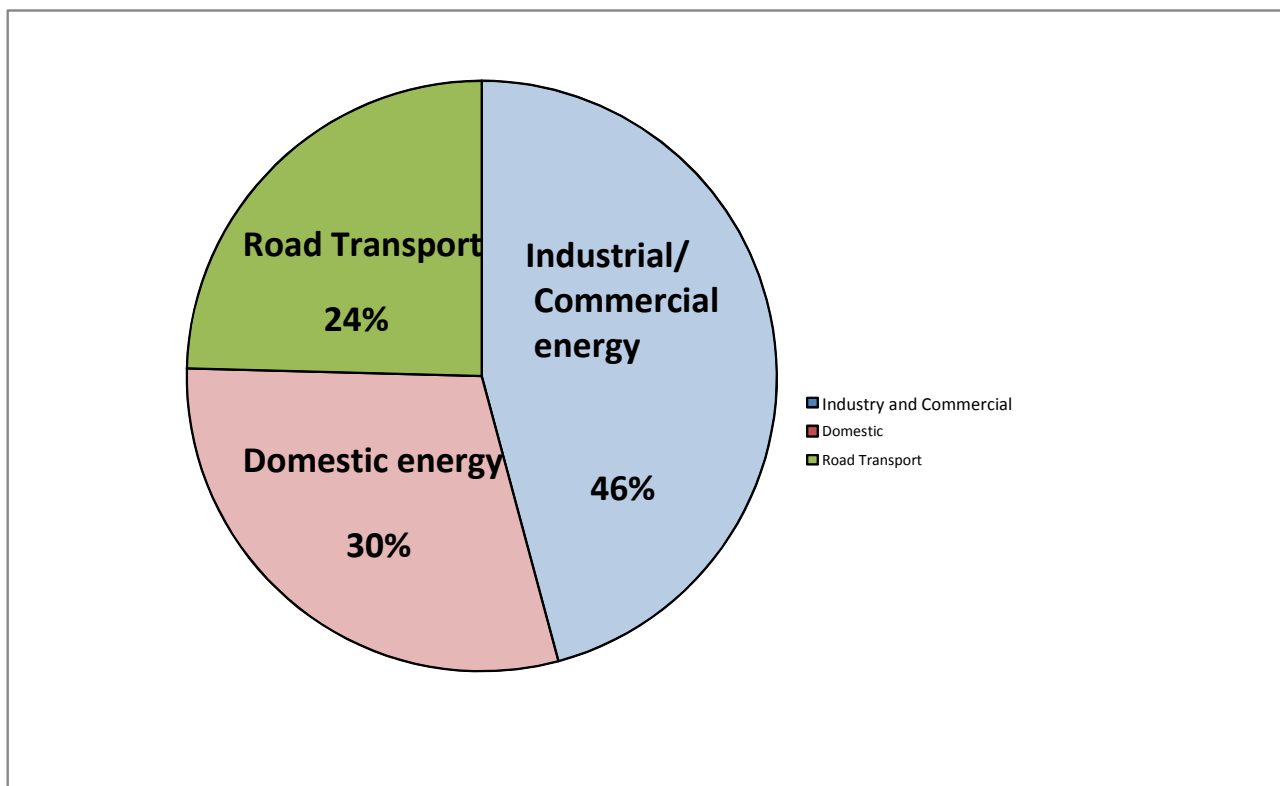
Figure 1. Knowsley's per capita CO₂ emissions 2005 - 2009



6.2.2 Knowsley's CO₂ emissions by sector

In 2009, the greatest proportion of emissions was from energy use in the industrial/commercial sector (46 %), followed by energy use in domestic properties (30%) and then transport (24%) (Figure 2). A comparison with other boroughs in the Liverpool City Region is highlighted later in this section.

Figure 2. Knowsley's CO₂ emissions by sector, 2009



Between 2008 and 2009 the greatest reduction in CO₂ emissions was from energy use in the domestic sector which saw a 10.9% decrease in emissions. Industrial and Commercial emissions were also reduced over the same period by 6.6%. Transport saw a decrease of around 3.0% on 2008 emissions. External factors such as changing economic conditions and fuel prices cannot be ignored as contributing factors to these figures. However, work in Knowsley around energy efficient housing, engagement with businesses on resource efficiency and work around travel such as school travel plans have also played a significant part.

The DECC report 'Local authority CO₂ emissions estimates 2009 – Statistical Summary' highlights Knowsley as the authority with the largest decrease in emissions from energy use in the domestic sector since 2005 - a decrease of 18%.

6.2.3 Knowsley's energy consumption by Middle Layer Super Output Area

At present, DECC only provide data on CO₂ emissions at borough wide level. However, data at the lower spatial level of Middle Layer Super Output Area (MLSOA) has recently been made available for energy consumption in both domestic and industrial/commercial properties from 2005 to 2009. Data for 2009 only is available at the Lower Layer Super Output Area (LLSOA).

Local energy maps have been produced using this data. These maps will be used to develop targeted programmes in areas of high energy use.

6.2.4 Knowsley's CO₂ emissions compared with the Liverpool City Region

When compared to other authorities in the Liverpool City Region, Knowsley has relatively high per capita CO₂ emissions (Table 2), however in terms of total CO₂, Knowsley emitted the lowest amount in the city region (Table 3).

Table 2. Tonnes CO₂ per capita in the Liverpool City Region, 2009

Local Authority	Per capita CO ₂ Emissions (tonnes)
Halton	8.8
Knowsley	6.5
St. Helens	5.8
Liverpool	5.6
Wirral	5.0
Sefton	4.6

Table 3. Total CO₂ emissions in the Liverpool City Region, 2009

Local Authority	Total CO ₂ Emissions (k tonnes)
Liverpool	2,489
Wirral	1,546
Sefton	1,259
St. Helens	1,033
Halton	1,049
Knowsley	971

This may be due to the fact that although emissions from domestic energy use are directly relevant to a 'per capita' calculation, industrial and transport emissions are not (for example a borough with a small population but disproportionately large industrial sector based there will have high per capita emissions).

Another issue for Knowsley is the way in which the transport data is collated by Government. Motorways are not included in the figures as vehicles may be passing through areas and there is no local control over emissions. However, dual carriageways are included. This means that traffic on the A5300 forms part of the borough's emissions when it is in fact an extension of the M57 used by many freight vehicles heading for the Port of Liverpool. In addition, the A580 East Lancs Road is used by traffic travelling to a number of destinations between Manchester and Liverpool.

6.2.5 Knowsley's existing carbon reduction targets

Carbon reduction targets (in line with NI 186) were set in Knowsley's Local Area Agreement (LAA) 2008 - 2010. The reduction targets in Table 4 below were agreed by the former Government Office NW in April 2008. The targets were based on the results of work commissioned by the previous Government to establish achievable targets for each local authority area over the period 2006 to 2010.

Table 4. Summary of annual targets to meet Knowsley's 10% NI 186 target from 2005 to 2010

Year	Overall CO₂ reduction from 2005 baseline
2006	-
2007	-
2008	4.72%
2009	2.68%
2010	2.68%
Total	10.08%

Knowsley achieved a 21.0% reduction in emissions from the 2005 baseline in 2009, so provided that emissions did not increase significantly in 2010, we will be on track to exceed our target.

6.2.6 Knowsley's future targets

No guidance has yet been provided by the new Government on setting local carbon reduction targets.

There is also inconsistency across the Liverpool City Region, with a range of different targets being set across the boroughs using varying baseline years and target years. Work is ongoing via the development of a Sustainable Energy Action Plan for the City Region to address this and a proposal is currently under consideration to undertake detailed carbon modelling and forecasting in order to create a consistent target.

In the interim, a CO₂ reduction target for 2020 has been set for Knowsley, based on the national targets in the Climate Change Act 2008. This has been derived as follows:

The Climate Change Act 2008 states a target to:

- Reduce CO₂ emissions by 34% by 2020 against a 1990 baseline

Unfortunately no local data is available from 1990. However, proposals to meet this target are outlined in the UK Low Carbon Transition Plan published in July 2009 which specifies the target reduction against a baseline year of 2008:

- Reduce CO₂ emissions by 18% by 2020 against a 2008 baseline

Knowsley CO ₂ emissions 2008 (NI 186 data)	1,032,820 tonnes
Target reduction by 2020	18%
Target reduction in tonnes	185,908 tonnes
Knowsley Target CO ₂ emissions 2020	846,912 tonnes

This has been extrapolated backwards to give a target reduction figure for a baseline of 2005, which is the earliest year for which reliable data is available. This would give us a target reduction of 31% from 2005 levels by 2020.

This would also satisfy the EU Covenant of Mayors requirement of a commitment to a reduction in CO₂ emissions of 20% by 2020 (using the earliest year that reliable data is available as a baseline), should Knowsley decide to pursue this.

Knowsley will aim to reduce CO₂ emissions by 31% from 2005 levels by 2020 from the following:

- **Energy use in domestic, industrial and commercial properties (excluding those within the EU Emission Trading Scheme)**
- **Road transport (excluding motorways)**

Further work needs to be undertaken to establish annual targets based on the projects outlined. Work will also be undertaken to establish the predicted carbon reduction from the projects outlined in this strategy and related action plans, to inform the development of separate targets for each of the themes (energy use, transport etc.).

6.3 Energy use

Key Objective 3:

To reduce carbon emissions from energy use in Knowsley

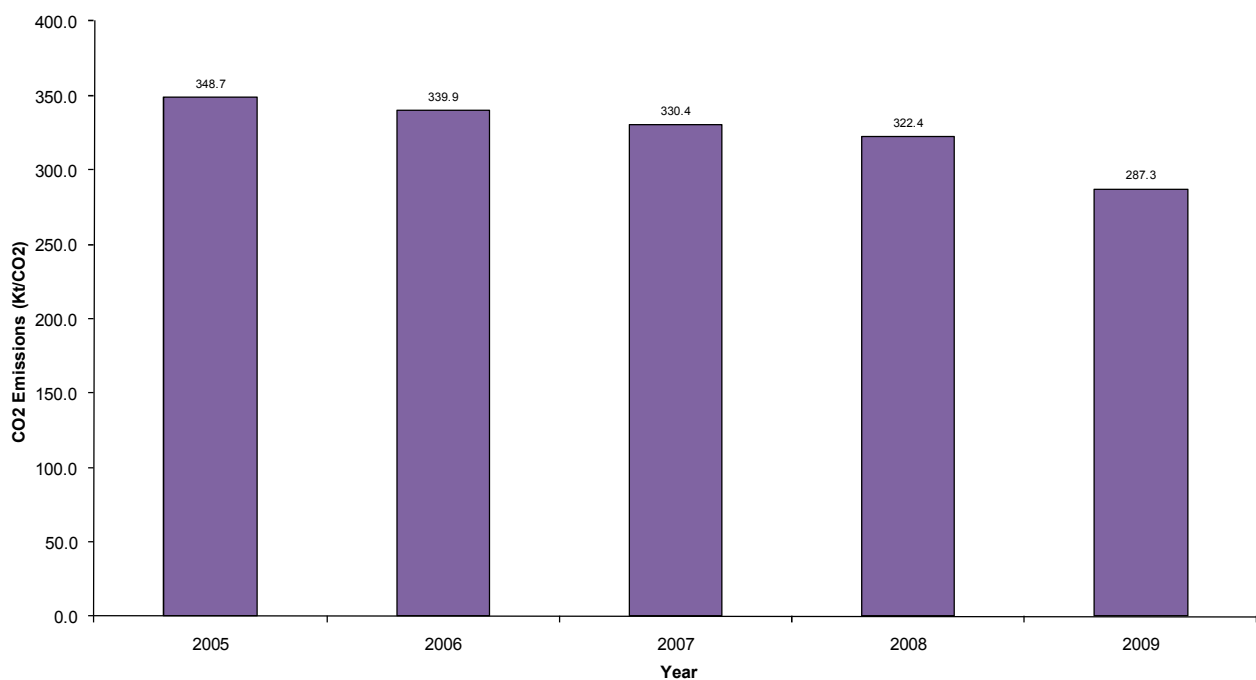
6.3.1 Carbon emissions from energy use

Housing

There are approximately 64,600 dwellings in Knowsley. Of these 72% are in the private sector and 28% managed by housing associations. Of the housing association dwelling stock, 74% is managed by Knowsley Housing Trust (KHT) and 10% by Villages Housing. The remaining 16% is divided between 19 different organisations.

According to DECC figures, 287,300 Tonnes of CO₂ was emitted in 2009 from gas and electricity use in Knowsley's domestic properties, equating to 1.92 Tonnes per head of population. 30% of Knowsley's emissions are from this source. The data shows that there has been a decrease in emissions from this source over the last four years as outlined in Figure 3 below.

Figure 3. Total CO₂ emissions from domestic properties in Knowsley, 2005 to 2009



In 2009 (i.e. the latest figures available from DECC), Knowsley had the lowest per capita emissions from energy use in domestic properties on Merseyside. The DECC report 'Local authority CO₂ emissions estimates 2009 – Statistical Summary' highlights Knowsley as the authority with the largest decrease in emissions from energy use in the domestic sector since 2005 - a decrease of 18%.

Fuel Poverty

Reducing carbon emissions from housing closely links to addressing fuel poverty. Fuel poverty is defined as:

'the need to spend more than 10% of household income to achieve adequate levels of warmth in the home and meet their other energy needs'

Fuel poverty affects around 23% of households in Knowsley, a figure slightly higher than the national average. Traditionally fuel poverty is viewed as an issue of warmth and insulation in a home, however appliances are beginning to account for more and more of household energy bills. Current work on fuel poverty consists of a number of projects, some of which are detailed in this strategy. The main projects are the CESP community retrofit insulation programme in North Huyton and the Cosy Knowsley programme, a borough wide free loft and cavity wall initiative. More information on these projects can be found in key projects section of this chapter.

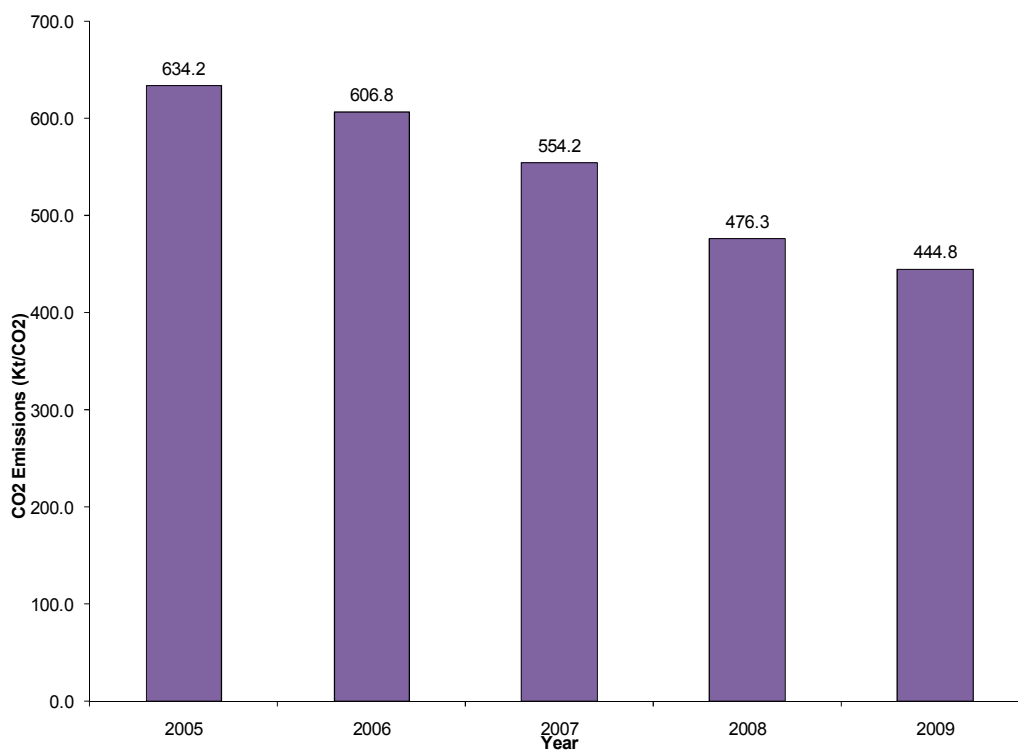
Businesses, organisations and schools

Knowsley has over 3,000 businesses, of which around 2,300 are small and medium enterprises (SMEs).

Data published by DECC indicates that 444,800 tonnes of CO₂ was emitted in Knowsley from energy use in the industrial/commercial sector in 2009 (excluding installations covered by the EU Emissions Trading Scheme). This equates to 46% of Knowsley's emissions.

The data shows that there has been a decrease in emissions from this source over the last four years as outlined in Figure 4 below.

Figure 4: Knowsley CO₂ emissions from gas and electricity use in the industrial/commercial sector, 2005 – 2009



Carbon emissions from energy use in organisations and schools within the Borough is included within the above overall figures for businesses. Many organisations are already taking action to reduce carbon emissions and further action regarding this is outlined in Section 4.2 above.

Reducing carbon emissions in schools is addressed by Knowsley Council's Carbon Management Plan. All of the borough's secondary schools have now been replaced with seven Centres for Learning as part of the Building Schools for the Future programme. In addition, two new primary schools opened in April 2011 with four more proposed by the end of 2012.

6.3.2 Examples of action taken

Warmstreets and Warmfront

Since 2003, Knowsley Council have been working in partnership with the Government and utility companies to improve the energy efficiency of residential properties, through schemes such as 'Warmstreets' and 'Warmfront'. In 2008/09, over 4,200 properties in Knowsley received energy efficiency measures such as loft and cavity wall insulation, saving on average 1 Tonne of CO₂ per household, per year.

Knowsley Housing Trust

Building on their stock wide average SAP (Standard Assessment Procedure – a measure of energy efficiency) of 74 (national average 56), KHT are now looking to the future by piloting solar thermal, solar PV and rainwater harvesting on a selection of their new build and existing homes. Installing new technologies without showing the residents how to use them does not allow them to perform to their potential so they are also providing ongoing advice and support through their affordable warmth programme “Save Energy Save Money”. Working with individuals and in association with local community groups and schools they aim to increase awareness and achieve financial savings across a series of environmental topics.

The Environment Network

There is a range of support available to assist Knowsley businesses in reducing carbon emissions and this is promoted via The Environment Network in Knowsley. The Network was formed in 2010 as a follow on to the Knowsley Business Environment Club which was a first of its kind in Merseyside. The Network is a partnership between Knowsley Chamber and relevant organisations such as Knowsley Council, Environment Agency, HSE, Knowsley College, Envirolink and business representatives. Training, workshops, environmental audits, advice and support is offered to local businesses via the Network.

Environmental Audits for Businesses

Free support to Knowsley businesses to help reduce their use of resources was made available via the ENWORKS programme, delivered by Groundwork Merseyside. From 2005 to March 2009 it is estimated that this programme achieved a reduction in carbon emissions from Knowsley businesses of nearly 1,200 Tonnes per annum. If businesses were to implement all other recommendations made as a result of this programme, an additional 4,000 Tonnes of carbon per annum could potentially be saved.

Renewable energy in Knowsley’s schools

Renewable energy is being introduced into Knowsley’s schools, with ground source heat pumps installed at all of Knowsley’s Centres for Learning to provide a renewable heat source and reduce carbon emissions. In addition, biomass boilers have been installed at the borough’s two new primary schools.

6.3.3 Key Government Proposals

The Government’s Carbon Plan (December 2011) states that by 2050, all buildings will need to have an emissions footprint close to zero. Buildings will need to become better insulated, use more energy-efficient products and obtain their heating from low carbon sources. Nearly a quarter of the UK’s total CO₂ emissions is from industry and by 2050 the Government expects reductions of up to 70% from 2009 levels.

Their proposals include carbon reduction via the following measures:

Green Deal	The Green Deal is the Government’s key energy efficiency project. The scheme will offer energy efficiency improvements to homes, community spaces and businesses at no upfront cost. Payment
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	will be recouped through savings made on energy bills. The golden rule for the Green Deal is that expected savings must be equal to or greater than cost of the measure. The Green Deal aims to create jobs locally, improve energy efficiency and reduce CO ₂ emissions across the UK.
Renewable Heat Incentive/Premium	The renewable heat incentive/premium will provide long term financial support for replacing traditional fossil fuel burning heating systems with renewable ones.
Changing consumer behaviour	The roll out of smart meters in the UK will see an estimated 53 million smart meters put in place saving the nation £7.3 billion over the next twenty years. Smart meters will give consumers real-time energy information allowing them to better control consumption of gas and electricity. They will also provide more accurate information to suppliers, which will not only lead to more accurate billing but also provide information to the grid, making it easier to ensure supply meets demand.
Carbon Reduction Commitment Energy Efficiency Scheme	The Carbon Reduction Commitment (CRC) is a mandatory scheme involving organisations responsible for 10% of the UK's emissions. The scheme incorporates financial and reputational measures to encourage organisations to reduce carbon emissions. Permits are required to cover carbon emissions, currently £12 per tonne.
Green Investment Bank	The Green Investment Bank will provide funding for investments in infrastructure projects that support the green economy where private sector investment is currently constrained.

6.3.4 How this work will be taken forward

Actions to reduce carbon emissions from energy use will be addressed by the following:

- Sustainable Knowsley Low Carbon and Renewable Energy Action Plan (Appendix A);
- Knowsley Housing Strategy 2011 – 2014;
- Knowsley Private Sector Housing Strategy 2011 – 2014;
- Knowsley Affordable Warmth Strategy;
- Knowsley Council Carbon Management Plan 2011 – 2016; and
- Knowsley Industrial Park Review.

These plans will take account of the government proposals outlined in section 6.3.3 as they are developed.

6.3.5 Key projects

- The Community Energy Saving Programme (CESP) scheme is being delivered in partnership with Knowsley Council, British Gas, European Regional Development Fund (ERDF) and Villages Housing Association. The scheme will provide energy saving measures such as external cladding, wet central heating systems and loft insulation for over 1,700 homes in the Stockbridge Village area in two phases to be completed in

2012. An additional CESP scheme is also being taken forward in Kirkby where external wall insulation will be installed to approximately 1,700 'no fines' properties (i.e. hard to heat);

- The Cosy Knowsley scheme - offering free loft and cavity wall insulation to Knowsley residents provided by British Gas under the Carbon Emissions Reduction Target (CERT);
- Promotion of the Government's Warm Front scheme, re-launched in April 2011 to provide assistance to the poorest households over the next two years, helping householders to install heating measures and insulate their homes;
- Pilot programme of business support measures for energy efficiency aimed at 30 SMEs ;
- Facilitation of proposals from major businesses to install low carbon/renewable energy facilities; and
- Programme of energy advice to schools.

6.3.6 Relevant partnerships/fora

- Knowsley Housing Partnership;
- Knowsley Housing Association Liaison Group;
- Sustainable Knowsley Programme Board;
- Landlords Forum;
- Knowsley LSP Executive Team and proposed Business Council;
- The Environment Network for Knowsley Businesses;
- Knowsley Partnership Children and Young Peoples Board; and
- Schools Asset Management Working Group.

Reducing carbon emissions from new development is addressed in Section 6.8

6.4 Transport

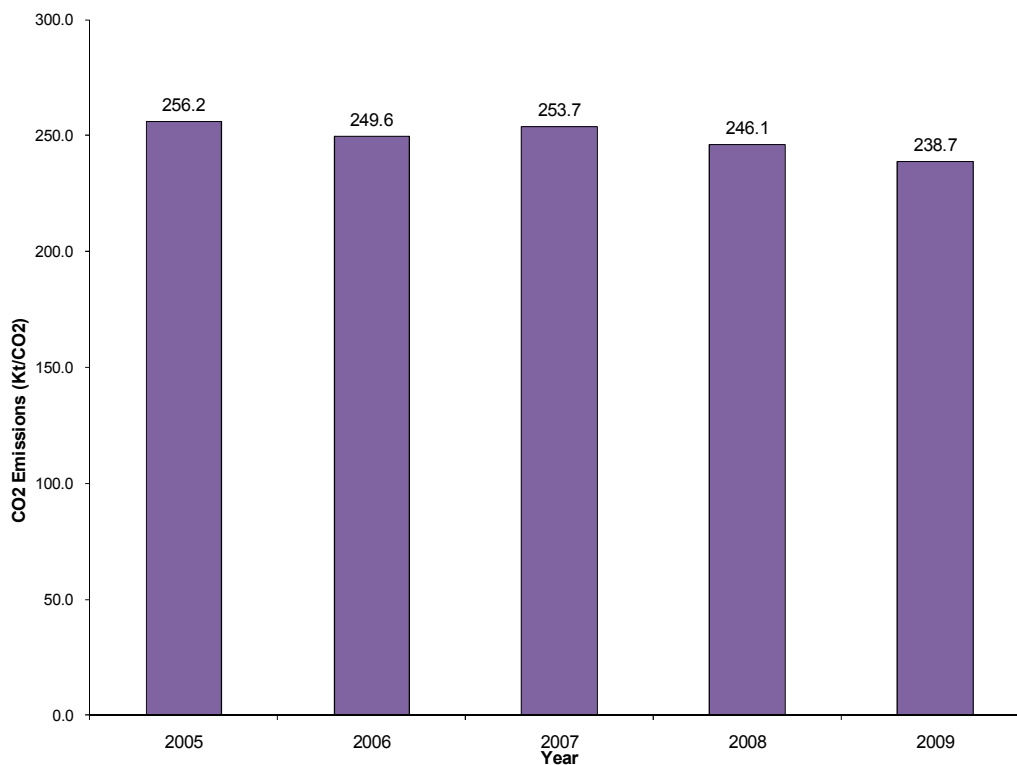
Key Objective 4:

To reduce carbon emissions from travel in Knowsley

6.4.1 Carbon emissions from transport in Knowsley

Data from DECC for each local authority area indicates that in 2009, 238,700 tonnes of CO₂ was emitted from local road transport in Knowsley (excluding motorways) (Figure 5). This equates to 1.6 tonnes per resident of Knowsley and represents a reduction on 2005 emissions of just over 6.8%.

Figure 5. Knowsley's total CO₂ emissions from transport



6.4.2 Forecasting future emissions from transport

The current Local Transport Plan for Merseyside (LTP3) provides details of estimated long term forecasts of CO₂ emissions from transport. It should be noted that this is an uncertain science. Using the data available, the following forecasts of changes in CO₂ on Merseyside have been estimated, if LTP3 is implemented effectively.

Table 5. Predicted changes in annual CO₂ emissions from transport in Merseyside for 2014 and 2024 (adapted from the Third Local Transport Plan for Merseyside 2011, Part 1, p.27)

Scenario	Year/change	CO ₂
Base year	2008	1,500 ktonnes
Do minimum	Change to 2014	5%
	Change to 2024	1%
Final Strategy	Change to 2014	3%
	Change to 2024	0%

The predictions indicate that the final LTP3 strategy, in the short term (to 2014) is likely to result in an increase in CO₂ emissions. However, through to 2024 this increase is tempered by advances in cleaner vehicle technology. CO₂ is predicted to fall back to 2008 rates in 2024. These figures are based on a forecast that traffic growth will be substantial. However, there is evidence that there has been a recent decline in traffic levels in Merseyside (similar to other urban areas in England). This is thought to be due to the recession and impact of increasing fuel prices.

It should be noted that the results modelled are considered to be a conservative estimation of environmental improvements to vehicle technology. There may be greater reductions in CO₂ emissions by 2024 as vehicle manufacturers are required to comply with EU regulations on the environmental performance of new vehicles. The regulations which begin to take effect in 2012 will require a significant decrease in the amount of CO₂ produced by new vehicles and will gradually become more rigorous.

6.4.3 Examples of action taken

Third Merseyside Local Transport Plan (2011-2024)

The Third Local Transport Plan for Merseyside (LTP3) commenced on the 1st April 2011. LTP3 is a long term transport strategy for Merseyside until 2024, and provides the statutory framework for the policies and plans that will guide the future provision of transport across Merseyside.

The LTP is presented in three parts:

- Part One sets out the long term strategy for Merseyside;
- Part Two provides an explanation as to how we aim to deliver the Goals which have been set to support the Strategy; and
- Part Three is the short term Implementation Plan, setting out the programmes that district councils such as Knowsley plan to deliver locally over the next four years, which will contribute to achieving the Goals of LTP3.

The LTP has six goals. Goal 2 of the Plan states – *‘Provide and promote a clean, low emission transport system which is resilient to changes to climate and oil availability’*.

This is accompanied by a series of actions which are intended to reduce carbon emissions from travel. In addition, a future Low Emission Strategy for Merseyside is introduced. Knowsley has produced a Local Implementation Plan (2011 – 2015) which is the delivery plan contributory to the strategy element of the LTP3.

School Travel Plans

All of Knowsley's schools have School Travel Plans in place, and Knowsley met the national target of all schools to have a travel plan by 2010. Monitoring shows a 4.5% reduction in car use for schools in Knowsley, with pupils switching to more sustainable modes such as walking and cycling as alternatives.

Joint Staff Travel Plan for Knowsley Council and NHS Knowsley

A Travel Plan Co-ordinator for Knowsley Council and NHS Knowsley was appointed in 2008 and a Staff Travel Plan has been developed with the aim of reducing car use across both organisations. Actions implemented include improvement of cycle parking facilities, provision of pool bikes, supply and promotion of conferencing facilities and implementation of a salary sacrifice scheme for cycle purchase.

Improving cycling infrastructure in the Borough

The Sustainable Travel Team has been working to secure investment to develop the cycling infrastructure within the Borough. Data from the cycle counters within the Borough record increases in the numbers of people cycling with an increase in the weekly average from 139 (baseline year - 2006) to 748 in 2010.

With plans to further develop the network, combined with cycle training and promotion activities, it is hoped that these figures will continue on a positive trend.

6.4.4 Key Government Proposals

Local Transport White Paper

In July 2009 the Department for Transport published 'Low Carbon Transport: A Greener Future' setting out its strategy for moving towards a more sustainable transport system. The themes set out within this paper have largely been continued, in the new Local Transport White Paper 'Creating Growth - Reducing Carbon' issued by the Government in January 2011 setting out in detail their approach to local transport. The paper demonstrates the Government's continuing commitment to addressing the 'twin peaks' of providing a transport system that supports economic growth and addresses carbon reduction. These are consistent with the local priorities set out within the LTP3.

Local Sustainable Transport Fund

In parallel to the above, detailed guidance on the Local Sustainable Transport Fund (LSTF) was issued. The aim of the LSTF is to fund sustainable transport projects which can help to support local economies and address the challenges of climate change. It reflects the Government's core objectives of supporting economic growth by improving the links that move goods and people and meeting its commitment to reducing greenhouse gas emissions. In July 2011, the Merseyside Transport Partnership were successful in receiving £4.87 million from this fund which further enhances an investment of £8.65million from existing public and private funds (£13.5 million total). The areas for investment are grouped into three main distinct, complementary elements, delivered over four years:

- Working with employers – A programme of support activity to assist employers as they seek to raise levels of sustainable access to their places of work for new and existing members of staff;
- ‘Travel Solutions’- Support for members of the public wishing to access employment and training, but who may currently experience barriers to accessing public transport or travel by other modes; and
- Sustainable Transport Infrastructure – A complementary package of infrastructure improvements aimed at addressing physical barriers to travelling to employment opportunities by sustainable modes.

In June 2012, the Merseyside Transport Partnership secured a further £19.99 million from the Local Sustainable Transport Fund for ‘Supporting Sustainable Access to Opportunity in Merseyside’. This will allow further sustainable transport initiatives to be developed in Knowsley.

Government’s Carbon Plan (December 2011)

The Carbon Plan states that by 2050, CO₂ emissions from transport will need to substantially reduce. Proposals include carbon reduction via the following measures:

Supporting the growth of the ultra-low emission vehicle market	The Government is providing around £300 million for consumer incentives, worth up to £5,000 per car, moving to mass roll out of ultra-low emission vehicles.
Promoting lower carbon travel choices such as walking, cycling or public transport	The Government is £560 million for projects via the Local Sustainable Transport Fund.
Reducing emissions from freight	The Logistics Carbon Reduction Scheme aims to reduce emissions by 8% by 2015 through improved efficiency and some modal shift to rail.

6.4.5 How this work will be taken forward

Actions to reduce carbon emissions from transport will be addressed by the following:

- Delivery of Local Transport Plan 3 and Knowsley Local Implementation Plan;
- Low Emissions Strategy for Merseyside (see key projects below);
- Knowsley Council and NHS Staff Travel Plan; and
- Delivery of the Local Sustainable Transport Fund.

6.4.6 Key projects

- **Local Sustainable Transport Fund** – in August 2011 the Merseyside Transport Partnership was awarded funding to help Knowsley residents to access jobs and town centre facilities in Kirkby. This includes a programme of support to local businesses in Kirkby to encourage their staff to use greener travel options and also improve cycle routes which will connect residential areas to employment sites. In June 2012, further funding was received to allow additional sustainable travel activities to be developed across the Borough.

- **The Low Emission Strategy for Merseyside** – with primary ambitions to provide a range of viable low emission travel options, educate about the travel options that are available and when they are most appropriate, incentivise low emission travel choices, remove financial barriers to low-emission technologies and build, maintain and manage the transport network in a way that minimizes emissions.
- **Active Travel Strategy** – reducing emissions from car trips through promotion of sustainable travel for example walking and cycling.
- **Knowsley ‘Smarter Choices’ Programme** - Knowsley Council supported by the Travelwise programme. Key activities in Knowsley will be the development of clear information for communities, organisations and individuals enabling them to make informed choices about travel. This includes cycle maps, information for school and business intranet sites and promotion of travel planning tools such as the DfT Transport Direct and Cycle Journey Planner tools.
- **Use of sustainable biofuels** - As part of the BIONIC project, Merseytravel is supporting a two year biofuel trial on six Stagecoach buses by providing refuelling infrastructure for the vehicles. The Stagecoach buses are running on a greener blend of fuel, and some will be servicing the 217 route between Kirkby and Halewood in addition to the Kirkby circular routes.. The trial results, which will be made available by Merseytravel following completion in 2012, will monitor vehicle reliability and fuel consumption. Lessons learnt from the trial will be used to help other bus operators who want to use sustainable biofuels.
- **Statutory Quality Partnership Scheme (SQPS) Corridor** - An SQPS corridor has been established on route 10 which passes from Liverpool, through Knowsley (via Liverpool Road, Warrington Road) to St Helens. Those vehicles servicing the route will meet a minimum environmental specification.
- **Electric Vehicle Infrastructure** - In May 2010, local authorities and other private and public partners from Merseyside came together to bid for funding through the Plugged-in Places programme. The bid, entitled ‘e- Live’, intended to install 300 charging bays at public locations and on partner premises across the whole of Merseyside. Although the bid was unsuccessful partners remain committed to delivering the project and are continuing to pursue alternative sources of finance.

6.4.7 Relevant partnerships/forums

- The Merseyside Transport Partnership and associated sub groups;
- Low Emissions Strategies Partnership - ‘Regional Groups Initiative’;
- KMBC/NHS Knowsley Travel Plan Steering Group;
- Active Travel Steering Group- KMBC/NHS Knowsley partnership; and
- E-Live (Electric Vehicle Infrastructure steering group).

6.5 Waste

Key Objective 5:

To reduce carbon emissions from waste in Knowsley

6.5.1 Carbon emissions from waste in Knowsley

Waste can have a huge impact on the environment and the management of waste up the 'Waste Hierarchy' has significant benefits in the reduction in carbon emissions.

The Waste Hierarchy

The best way to manage waste is to prevent it in the first place which will see a reduction in carbon emissions across product life cycles. This is followed by preparing for re-use and recycling which saves the embodied energy in a product when it is manufactured. This is then followed by recovering energy from waste. Disposal to landfill particularly of biodegradable waste is the least preferable option as this generates greenhouse gases when it decomposes which contributes to climate change and to air pollution.

In Knowsley, the Council is responsible for collecting waste and recycle from domestic properties, which is then passed to the Merseyside Recycling and Waste Authority (MRWA) for treatment/disposal. Data compiled for NI 186 did not include carbon emissions generated from domestic waste. However, there was a separate National Indicator 'kg of residual household waste per household' (NI 191).

Figure 6 below shows that the amount of waste per household and associated carbon emissions have decreased over the last six years (calculated using a conversion factor supplied by the Carbon Trust). This correlates with an increase in household recycling in the Borough.

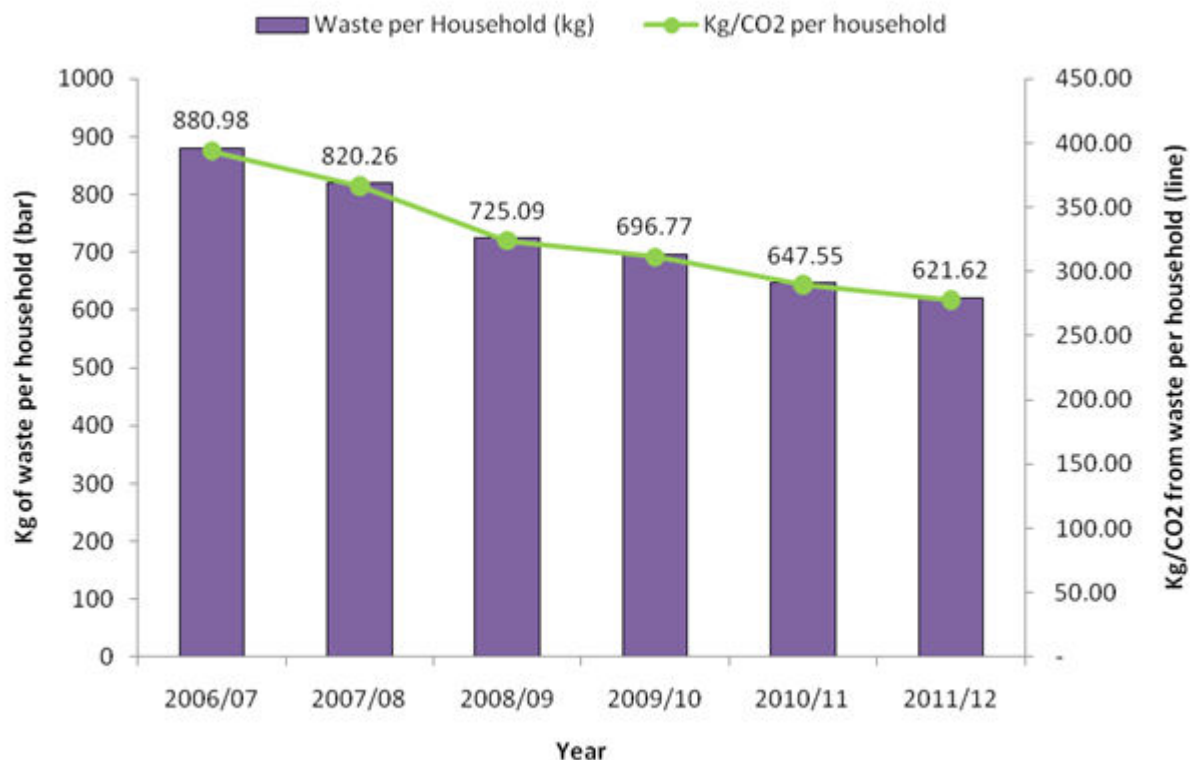


Figure 6. kg residual waste and CO₂ per household of Knowsley, 06/07 – 11/12

Trade waste (particularly biodegradable waste) that goes to landfill sites also generates greenhouse gases when it decomposes which contributes to climate change and to air pollution. Waste from industrial and commercial premises makes up around a quarter of all the waste produced in the North West.

Again data produced for NI 186 does not include carbon emissions generated from trade waste. It is not considered feasible to collect data on the amount of trade waste generated in Knowsley. This is due to the many private companies that are involved with collecting and disposing of trade waste from Knowsley businesses.

6.5.2 Examples of action taken

Joint Recycling and Waste Management Strategy for Merseyside

As a member of the Merseyside and Halton Waste Partnership, Knowsley have actively supported the development of a new strategy for the management of local authority collected municipal waste (LACMW) for Merseyside called 'RESOURCES Merseyside – A Place Where Nothing is Wasted'. Key objectives and targets include:

1. Reducing the climate change/carbon impacts of waste management by:
 - Demonstrating continuous improvement in the reduction of carbon emissions from the LACMW management service on Merseyside;
 - All waste management choices should seek to optimise carbon reduction wherever practicable; and
 - Commitment to review every five years that the CO₂ impact of the Strategy has

reduced;

Baseline: CO₂ impact is 33 million tonnes of CO₂ in 2011

2. Maximising waste prevention by reducing the total amount of waste arisings produced per household on Merseyside by 8% by 2030 to 1,227kg per household by 2020 and 2,280kg by 2030 (baseline 1,300kg of total waste arisings per household in 2009/10). The Strategy supports the objective of a pathway towards zero waste to landfill.
3. Achieve high recycling rates by recycling 50% of household waste by 2020.

Household Recycling

To reduce the amount of domestic waste sent to landfill Knowsley Council provide a comprehensive recycling service to its residents. This includes fortnightly kerbside collections of 'co-mingled' waste (paper, glass, cans, card and plastic bottles) and green waste. A weekly opted-in food waste collection service launched in 2009, and available across the borough.

Behaviour Change Programme

Knowsley actively supports the implementation of the Joint Recycling and Waste Management Strategy which promotes behavioural/cultural change to deliver the Strategy objectives. This includes the delivery of a Waste Prevention Action Plan which encourages behavioural change through awareness raising campaigns for 'Love Food Hate Waste', home composting, textile reuse and recycling, SMART Shopping, WEEE reuse and recycling and reuse in general. All of these changes in behaviour will actively support the reduction of carbon emissions.

Merseyside Recycling and Waste Authority (MRWA)

MRWA manages the local authority collected municipal waste from Knowsley Council and provide two Household Waste Recycling Centres (HWRCs) in Huyton and Kirkby for residents to take their own waste for recycling or disposal. A new modern Kirkby HWRC opened in May 2011 with a new Huyton site opened in 2012.

MRWA is currently in the latter stages of procuring new infrastructure through its Resource Recovery Contract. The technology being taken forward will be an Energy from Waste facility which is Combined Heat and Power enabled to maximise the recovery value from the residual waste.

6.5.3 Key Government Proposals

The Carbon Plan states that the Government is committed to working towards a zero waste economy. Their proposals include the following measures:

Preventing waste arising	Action includes a comprehensive Waste Prevention Programme by the end of 2013, reducing the embedded carbon within products and materials, continuation of the 'Love Food, Hate Waste' initiative via the Waste and Resources Action Programme (WRAP).
Reducing methane emissions from landfill	Action includes increases in the Landfill Tax, a consultation on restricting sending wood waste to landfill and a review of the case for restricting sending other wastes to landfill including textiles and biodegradable waste.
Efficient energy recovery from residual waste	Over the next decade, the Government is taking forward a range of measures through the Review of Waste Policy Action Plan and the UK Renewable Energy Roadmap to overcome barriers to deployment of energy from waste through a range of existing and more innovative technologies.

In June 2011, the Government published the findings of its Waste Policy Review along with a 4 year action plan. A number of principal commitments are outlined around:

- The Review has been guided by the EU Waste Hierarchy and the UK's EU obligations on waste management but very much highlights the need to balance this with working in partnership with local communities develop fit for purpose local solutions for collecting and dealing with household waste;
- A more sustainable approach to the use of materials, delivering environmental benefits and supporting economic growth; and
- Improving the service to householders and businesses while delivering environmental benefits and supporting growth.

6.5.4 How this work will be taken forward

Actions to reduce carbon emissions from waste will be addressed by the following:

- Delivery of the Joint Recycling and Waste Management Strategy (Resources Merseyside) 2011 – 2041 (approved by all members of the Merseyside Waste Partnership except Liverpool City Council and Wirral Council, who anticipate approval by July 2012);
- Knowsley Council District Council Waste Management Action Plan; and
- Joint Merseyside and Halton Local Waste Plan.

6.5.5 Key projects:

The work outlined above will continue through the delivery of the JRWMS and Knowsley's Waste Management Action Plan.

6.5.6 Relevant partnerships/fora:

- Local Authority Recycling Advisory Committee (LARAC);
- Merseyside and Halton Waste Partnership (incorporating the MWDA Board, Senior Officers Working Group (SOWG), Operations Group, and the Waste Action Project Team (WAPT);
- North West Recycling Forum (NRF); and
- Joint Liverpool City Region local authorities/ Merseyside Environmental Advisory Service (responsible for preparing Joint Merseyside and Halton Waste DPD).

6.6 Water

Key Objective 6:

To reduce carbon emissions from water use in Knowsley

6.6.1 Carbon emissions from water use in Knowsley

Water is often referred to as the 'forgotten utility' due to its relatively low cost when compared with gas and electricity. Waterwise estimate that each person in the UK uses approximately 150 litres of water a day - this takes into account cooking, cleaning, washing and flushing. Water consumption contributes to the carbon emissions of the borough as water is an energy intensive resource:

- Energy is used to treat and distribute potable water to homes and businesses; and
- The way in which homes and businesses consume water also consumes energy e.g. heating water to wash clothes (therefore saving water can also result in savings on energy bills).

Waterwise has carried out some research and found that the energy used to pump, treat and heat the water in the average family's home produces the carbon equivalent of a return flight from London to New York.

Due to the nature of water distribution in the region it is difficult to accurately present the amount of water used in Knowsley (Knowsley is part of United Utilities Integrated Resource Zone which spans most of the North West region, supplying approximately 6.6 million people). However United Utilities have provided an estimate that Knowsley uses 141 litres per person per day. This is slightly above the average within the resource zone of 140 litres.

Waste water treatment also produces emissions through the energy intensive process of preparing water for a safe return to the environment. A reduction in water consumption will therefore also reduce emissions from this source.

6.6.2 Examples of action taken

United Utilities

In order to achieve the water efficiency targets set by Ofwat, United Utilities has promoted and distributed shower regulators as well as continuing to promote the 'Save-a-Flush' cistern displacement devices to all of its customers. The devices, along with other water saving ideas, are promoted in the billing leaflet which is sent to all customers. United Utilities also promotes these on its website, through advertisements in local council magazines, local press, at community events and through road show activities using the 'Big Toilet' display. United Utilities provide a water cycle and water efficiency education programme for Key Stage 2 pupils. Prescot Primary School is participating in this programme.

Knowsley Council

The Council actively promotes water efficiency both on its own estate through the Council's Carbon Management Plan and with residents at community events

Knowsley Housing Trust

Knowsley Housing Trust promote water efficiency to their tenants, with the following projects that have been underway for the last year:

- Rainwater harvesting to 20 new build properties as a trial;
- Water meter advice through community events and home visits resulting in 700 new water meter installations over a 12 month period;
- Distribution of 'Save-a-flush' devices on behalf of United Utilities; and
- Behavioural usage advice through Eco teams for staff and residents

6.6.3 Key Government Proposals

The Environment Agency has responsibility to manage water resources in the UK, in line with the EU Water Framework Directive. At the end of 2011, DEFRA released a Water White Paper – Water for Life. Many of the recommendations come from the Environment Agency's support document 'Case for Change – current and future water availability'.

The White Paper indicates that the Government views climate change as a threat to water resources in the UK. Some of the environmental/efficiency measures put forward in the paper are as follows:

- Water efficiency measures are to be included in the Green Deal, enabling households to receive subsidies for specific water-saving technologies and retrofits;
- A water campaign will be launched in which the Government will raise awareness of the link between our personal water use and the quality of our surrounding water environment;
- Water companies will receive new guidance on introducing seasonal tariffs - whereby less is charged for water during winter, and more during summer (but there is no compulsion or incentive to do so);
- The Government will work with companies and industry to develop voluntary water labelling to help enable consumers to purchase more water efficient products; and
- Improved guidance to water companies will ensure that all demand management measures must be tested as part of options appraisal.

Finally, the White Paper commits the Government to a producing a draft Water Bill.

Ofwat, the water industry regulator have introduced mandatory water efficiency targets for water companies from 2010/11 to 2014/15. These targets will contribute to the Government's ambition to see a 20 litre reduction in daily per capita consumption by 2030 as set out in their 'Future Water' strategy. United Utilities as the provider for the North West produce a water resource management plan which spans a 25 year period and is reviewed annually in order to achieve these targets. The Ofwat target for United Utilities is to save one litre of water per property per day, which represents 2.95 million litres per day

each year between 2010/11 and 2014/15. In addition to this there is a requirement that United Utilities provide customers with information on how to use water more effectively.

6.6.4 Key projects

- United Utilities to work with Knowsley Council to raise the issue of water efficiency in Knowsley through awareness raising events and a continuation of current activities (such as promotion of water efficiency at internal events); and
- KHT will investigate the retrofitting of rainwater harvesting and flow restrictors to appropriate outlets.

6.7 The natural environment

Key Objective 7:

To develop and utilise the natural environment in Knowsley to reduce carbon emissions

6.7.1 Role of Knowsley's 'green infrastructure' in carbon reduction

Green infrastructure is described as our 'life support system – the network of natural environmental components and green and blue spaces that lie within and between our cities, towns and villages and provide multiple social, economic and environmental benefits' (North West Green Infrastructure Think Tank). It includes agricultural land, allotments, community gardens, cemeteries, derelict land, general amenity spaces, outdoor sports facilities, parks, private domestic gardens, street trees, woodlands and water bodies. All play a vital role in reducing CO₂ emissions.

In March 2011 a 'Green Infrastructure to Combat Climate Change – a framework for action in Cheshire, Cumbria, Greater Manchester, Lancashire and Merseyside' was published by Community Forests North West for the North West Climate Change Partnership. This is a guidance document for stakeholders across the region which addresses both carbon reduction and adapting to climate change. This framework will be assessed and used to inform relevant local strategies.

The Framework outlines the key areas through which green infrastructure can reduce carbon emissions:

- Carbon storage and sequestration – storing carbon in soils and vegetation;
- Food production – providing environmentally friendly sustainable food production that delivers food security;
- Material substitution – replacing materials such as concrete and steel (which involve high fossil fuel consumption in their production) with sustainably managed wood and other materials;
- Providing low carbon fuels – replacing fossil fuels with lower carbon alternatives, including bioenergy, wind and hydro; and
- Reducing the need to travel by car – providing local recreation areas and green travel routes to encourage walking and cycling.

Data held by the Mersey Forest indicates that Knowsley's soils store approximately 1,095,000 tonnes of carbon and our vegetation stores approximately 13,000 tonnes of carbon. Each year, the Government publish details of changes in carbon emissions as a result of direct, human-induced Land Use, Land Use Change and Forestry activities (LULUCF). The latest data available relates to 2005 to 2009 and shows that emissions from this source have decreased slightly since 2005 (Table 6).

Table 6. Knowsley's net LULUCF CO₂ emissions

Year	Net CO₂ emission/k tonnes
2005	6
2006	6
2007	6
2008	5
2009	5

6.7.2 Examples of action taken

Mersey Forest Green Streets Project

This programme improves the appearance and community cohesion of urban areas through the planting of street trees with local residents. Through Mersey Forest ERDF Objective One and Forestry Commission funded projects 120 new street trees were planted in Halewood, North Huyton and North Kirkby last year.

Review of Woodland Sites

Knowsley is moving towards Woodland Management Certification as an independently verified mark of a sustainable resource. The writing of UKWAS (UK Woodland Accreditation Scheme) compliant management plans has been completed which has resulted in the procurement of annual resources through the English Woodland Grant Schemes for woodland management works including regeneration planting.

Extension of Statutory Allotments and Other Growing Opportunities

At the Delaware Allotments, the site has been extended to increase the number of available plots and the allotment waiting list has been reduced by fifteen. The project was funded by £0.015m of developer contributions and £0.005m of Council funding. The project forms part of a series of improvements including new ancillary facilities and security gates funded £0.012m of external grants procured by the Delaware Allotment Association with support from the Council. In addition a number of supported allotment garden opportunities have been set up in Knowsley. Operated by both the Council and a series of voluntary and public sector partners there are now over five community gardens projects throughout the Borough.

Provision of Walking and Cycling Opportunities

Several green spaces have benefited from enhanced provision of walking and cycling opportunities, focussing on improved quality of pathways, signage, landscaping and associated maintenance. Sites include Mill Dam Park where £0.500m of Council investment has been utilised, part of the Valley Corridor in Kirkby.

Tree Planting in Parks

Funding has been secured in 2011 through the Community Forest North West fund to progress tree planting with green space areas. Tree planting will focus on both woodland and park sites throughout the Borough.

6.7.3 Key Government Proposals

The Government's Carbon Plan states that sustainable forest management can deliver significant emissions savings through carbon sequestration in new woodlands and through increased use of sustainable wood products. Soils, which naturally store carbon need to be managed in a way that protects and increases these stores.

It includes the following measure:

Increasing woodland cover and sustainable forest management	Support woodland creation through Rural Development Programme funding and the Woodland Carbon Task Force, implementation of the Woodland Carbon Code, publication of a revised UK Forestry Standard to promote carbon management in the UK's woodlands.
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Government agencies also provide various grant schemes, for example:

- English Woodland Grant Scheme (Forestry Commission) – Grant support for landowners wanting to create new woodland and carry out sustainable woodland management; and
- Energy Crops Scheme (Natural England) – Grants to farmers to grow crops for their own energy use or to supply power stations.

6.7.4 How this work will be taken forward

Actions to reduce carbon emissions via our natural environment will be addressed by the following:

- **The Knowsley Green Space Strategy (2010 –14)** - provides a vision and action plan for Knowsley's green spaces of 'A linked, preserved and enhanced network of good quality green spaces that excite and inspire communities and contribute towards the creation of vibrant, healthy and sustainable neighbourhoods across Knowsley';
- **The Mersey Forest Plan** - a Government approved thirty year strategic plan, to provide environmental, social and economic benefits for local people through the creation of a community forest;
- **The Mersey Forest Business Plan 2009-2014** - which details the key priorities and outcomes of; working in partnership, creating new woodland, delivering economic benefits, engaging people and improving biodiversity; and
- **Liverpool City Region Green Infrastructure Framework** –(draft document) will provide the basis for a programme of investment that will provide sustainable, environmentally focussed solutions to some of our most deep rooted economic and social issues.

In addition, the Local Transport Plan and Local Plan will have key roles to play.

6.7.5 Key projects:

- Enhancing connectivity by identifying, protecting and providing quality green corridors as important traffic free cycling and walking routes and as places for wildlife. Current and forthcoming projects include:
 - Work at Court Hey Park where £0.042m of Council funding has matched £0.050m of Community Spaces (Big Lottery) funding secured in partnership with the Friends of Court Hey Park to improve pathways, entrances and access for visitors with disabilities.
 - Works at Henley Park where £0.050m of Community Spaces (Big Lottery) funding secured in partnership with the Friends of Henley Park has been used to improve footpaths and create new access to the Park.
 - Work at Stadt Moers Park where the Council and Sustrans funded Connect 2 scheme has delivered a cycleway and footway at a cost of £0.300m.
- Improving landscaping and management practice on green corridor routes to ensure they are both safe and attractive to users.
- Further tree planting projects in green spaces across Knowsley to increase numbers of trees, age structure of tree stock and encourage community involvement. Current and forthcoming projects include:
 - The Northwood Woodland Creation scheme where £0.062m of NWDA, Marks & Spencer and Council funding has delivered basic improvements. A further £0.050m of Community Spaces (Big Lottery) secured in partnership with the Northwood Allotment Association and a further anticipated £0.185m from NWDA will deliver further woodland and site improvements.

6.7.6 Relevant partnerships/fora:

- Mersey Forest Partnership;
- Partnership with friends of park groups and other voluntary and charitable associations;
- Merseyside Biodiversity Group; and
- Merseyside Environmental Advisory Service.

6.8 New development

Key Objective 8:

To ensure new development in Knowsley is low carbon and adapted to climate change utilising the Local Plan

6.8.1 Carbon emissions from new development in Knowsley

Physical development and regeneration in Knowsley is governed by policies and strategies in the Unitary Development Plan (UDP), which was adopted in 2006. The UDP contains a number of policies on energy, transport and waste that will support the reduction of carbon emissions from development.

Since adoption of the UDP the planning system has changed and Knowsley's UDP will be progressively replaced by a Local Plan (formerly referred to as the Local Development Framework), from mid 2013 onwards. Development work on the Local Plan is in progress, including public consultations on 'Issues and Options' and 'Preferred Options' Reports. The various documents comprising the Local Plan will be subject to a Strategic Environmental Assessment and Sustainability Appraisal, Health Impact Assessment and Habitat Regulations Assessment.

A Supplementary Planning Document 'Sustainability in Design and Construction' is being developed as part of the emerging Local Plan. This provides further details on policies on sustainability in design and construction set out in the Local Plan to help reduce greenhouse gas emissions and better adapt to extreme weather such as through improved flood management, as well as minimise waste, protect biodiversity and promote sustainable modes of travel. The Local Plan is likely to include a policy which encourages new development to meet sustainable design standards such as the Code for Sustainable Homes and BREEAM. The Local Plan is also likely to cater for the Government's targets for zero carbon development and off-site 'Allowable Solutions'. Individual project or payments which are made as part of Allowable Solutions will contribute to Borough-wide carbon reduction, energy efficiency and renewable energy schemes and so will be a critical financial lever to resource the wider objectives set out in this strategy.

As outlined in Section 6.7 above, the Local Plan also has a key role in protecting the natural environment.

6.8.2 Achievements

Examples of action taken are outlined below:

10% Renewable Energy in New Developments

Policy MW7 of the current UDP requires that 10% of the energy requirements to be generated on-site by renewable energy for all new residential developments of over ten homes and for industrial/commercial developments over 1,000m².

SPD on Householder Development

A Supplementary Planning Document (SPD) on Householder Development was produced in November 2007 which promotes energy efficiency, renewable energy, re-use of building materials and facilities for recycling. A Supplementary Planning Document on the Design of New Development is in preparation which will promote sustainable forms of development.

Sustainability Statement

Since April 2008, a Sustainability Statement is required to be submitted with planning applications for large developments.

6.8.3 Key Government proposals

The Carbon Plan states that the Government is committed to successive improvements in new building standards through changes to Part L of the Building Regulations and zero carbon building standards. Proposals include the following measures:

Zero Carbon Buildings Standard	Introducing a zero carbon build standard for new homes from 2016 and new non-domestic buildings from 2019.
Building Regulations	Revisions to Part L 2013 of the Building Regulations 'conservation of fuel and power'.

The Government's new 'National Planning Policy Framework' was published in March 2012. The Framework sets out the Government's planning policies for England and how these are expected to be applied. One of the key aims of the policy is to achieve sustainable development as defined by the United Nations General Assembly. Under the new system the government views the planning system as contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy. This includes a statement that Local Planning Authorities should 'adopt proactive strategies to mitigate and adapt to climate change'.

6.8.4 How this work will be taken forward

Actions to reduce carbon emissions from new development will be addressed by the following:

- Application of policies within the emerging Local Plan via the planning application process.

Key projects:

- Development of the Local Plan; and

- Development of a Supplementary Planning Document 'Sustainability in Design and Construction'.

Relevant partnerships/fora:

Merseyside

District

Planners

Group

7. Transition to a low carbon economy in Knowsley

Key Objective 9:

To develop a low carbon economy in Knowsley

7.1 Development of a Low Carbon Economy in Knowsley

There are clear opportunities from taking action on climate change. The Treasury's 'Stern Review' made headline news in 2006 as it was the first comprehensive assessment of global economics and climate change.

Two main messages came out of the review:

- The economic benefits of strong, early action on climate change outweigh the costs. Therefore the costs incurred in reducing emissions must be viewed as an investment to avoid the risks of the future; and
- The stabilisation of carbon emissions and averting climate change is feasible and consistent with continued economic growth.

In July 2009, a mini-Stern review for the Liverpool City Region was published. The review concluded that by 2020, the costs to businesses and public sector bodies of not adjusting and adapting to climate change could amount to 1% of the area's GVA (a measure of economic value). Liverpool City Region has some significant assets to exploit the opportunities from the low carbon economy.

The Low Carbon Economy Action Plan for the Liverpool City Region published in March 2011, sets out the actions required to exploit the key opportunities for growth in the city region and estimates up to 12,000 jobs could be created by 2015 through the development of offshore wind infrastructure, tidal schemes and smart grid infrastructure.

Knowsley's contribution is recognised as an important part of the plan and examples include Knowsley Industrial Park being identified as a key opportunity area for the growth of the low carbon sector and the achievements around the CESP (energy saving) programme in Stockbridge Village to provide energy saving measures to 1700 homes.

7.2 Achievements

Knowsley Renewable Energy Action Group (KREAG)

The Council has worked in partnership with Knowsley Chamber of Commerce to establish the Knowsley Renewable Energy Action Group which brings together business, finance and planning specialists to support local Knowsley businesses seeking practical help with making choices over renewable technologies and maximising the benefits of them.

The group acts as a point of contact and shares intelligence over technological and financial developments and local businesses have access to specialists in specific areas which they can call on for support. Through local intelligence the group can also act to facilitate business to business contacts where there are mutual opportunities to exploit new business.

7.3 Key Government Proposals

The Coalition Government state that they are taking action to cut carbon emissions, create the conditions for green growth, and improve resilience to climate change, all of which contribute to the development of a sustainable green economy.

In order to deliver this, the one of Defra's priorities is to "Support a strong and sustainable green economy, resilient to climate change".

In 2011, Defra, the Department for Business, Innovation and Skills (BIS) and the Department of Energy and Climate Change (DECC) published a 'roadmap' to a green economy in the document 'Enabling the transition to a green economy: Government and business working together'. Their vision for a green economy is one which will;

- Grow sustainably and for the long term;
- Use natural resources efficiently;
- Be more resilient; and
- Exploit comparative advantages.

The document outlines how the Government will develop a green policy framework which will include:

- Encouraging investment;
- Protecting existing investments;
- Promoting the UK as a global leader in green exports and encourage green inward investment;
- Providing accessible advice and support to enable businesses to increase their resource efficiency, resource security and resilience to climate change;
- Ensuring that Government 'green policies' take into account the competitiveness of UK based companies;
- Ensuring the skills system responds to the demand for skills created by a shift to a green economy;
- Supporting the development of greener products, services and technologies through continued support for R&D and innovation;
- Encouraging investment in infrastructure and ensure that infrastructure supports the green economy, including through the Green Investment Bank;
- Enabling UK based businesses to compete in green, low carbon supply chains where the UK has expertise;
- Procuring products that meet cost effective sustainability standards; and
- Helping businesses understand the value of and their impact on the natural environment.

7.4 How this work will be taken forward

Actions to support the development of a low carbon economy will be addressed by the following:

- Development of Knowsley's Green Energy Task Force;
- Sustainable Knowsley Low Carbon and Renewable Energy Action Plan (Appendix A);
- Knowsley Economic Regeneration Action Plan; and
- Liverpool City Region Sustainable Energy Action Plan.

Key projects:

- Development of a strong renewable energy business sector within Knowsley, maximising the opportunities for renewable energy production as part of the development programme for Knowsley Industrial Park;
- Development of a low carbon investment brochure for Knowsley;
- Development of a Liverpool Low Carbon Skills Hub with Knowsley College as part of the new National Skills Academy for Environmental Technologies;
- Feasibility of joint Liverpool City Region resilient energy infrastructure delivery mechanism with neighbouring local authorities; and
- Ongoing discussions with major utilities and power companies, such as Scottish Power and E.On to establish a Green Energy Task Force to identify opportunities to deliver projects which are technically feasible and commercially viable and which meet the Council's regeneration and low carbon aspirations.

Relevant partnerships/fora:

- Knowsley LSP Executive Team and proposed Business Council;
- Knowsley Renewable Energy Action Group;
- The Environment Network;
- Liverpool City Region Sustainable Energy Steering Group; and
- Sustainable Knowsley Programme Board.

8. Developing community capacity and behaviour change

Key Objective 10:

To develop local community capacity for self-help on climate mitigation and adaptation

8.1 Introduction

To effectively address climate change by reducing our carbon emissions and making sure we are prepared for the future effects, it is vital that our local community take action. Through a wider strategy on Social Growth, we must ensure that communities have the knowledge, tools and support they need.

The Government has stated that they aim to help families and communities drive the revolution in energy efficiency. One of the ways that they are facilitating this is through the Green Deal (see Section 3.3). This will bring benefits to residents and businesses but will require strong local participation. They have also launched a 'Community energy on line portal' – a tool to help communities develop their own tailor made renewable energy projects and solutions.

With respect to adapting to climate change, the Local Government Information Unit have recently published a document on how this links with the Social Growth agenda. This was a project commissioned by the Local and Regional Adaptation Partnership (LRAP), made up of central and local government representatives. This gives guidance on engaging and empowering communities to take action in adapting to future climate change. The project concluded that local authorities would have to improve their communication and facilitation skills as well as explore new forms of finance and technology to support Social Growth groups. It also suggests that community groups would have to understand their position in wider society in order to advance adaptation work.

Behaviour change is an important element, in particular the elements of educating, encouraging and empowering. The Cabinet Office's Behavioural Insights Team have recently published a paper entitled 'Behaviour Change and Energy Use'. This includes the presentation of research around encouraging energy efficiency through social networks. It is stated that recent research suggests that engaging individuals as members of a community, rather than only as consumers of energy, is an important strategy for changing energy related behaviours.

8.2 Examples of action taken

The Bowring 'Green Neighbourhood Challenge' was launched in January 2011 with the Bowring Residents Group. The project supported residents to take action on reducing their household carbon emissions. This included assistance with calculating their household carbon footprint, loan of electricity monitors and advice from council officers and guest speakers. The project is currently being evaluated to determine the scope for rolling out to other areas.

Awareness-raising and Events

Knowsley Council and the Merseyside and Cheshire Energy Saving Trust Advice Centre have worked together to raise awareness on domestic energy efficiency, waste and water reduction and reducing carbon emissions from transport. Activities have included promotions at major events such as the Green Fayre and Flower Show, roadshows, talks to community groups and schools, mail shots, promotion in local media and resident engagement via door-knocking. The Energy Saving Trust now operate a centralised telephone advice service which includes promotion of grants available to householders to improve the energy efficiency of their homes. The Merseyside Recycling and Waste Authority has also supported waste minimisation education, awareness and communications programmes across the region.

Eco-schools

Knowsley schools participate in the Eco-schools programme administered by Keep Britain Tidy. In July 2011, there were 50 Eco-schools in Knowsley (78% of schools) – 35 with a bronze award, 14 with a silver, and one school achieving the prestigious Green Flag. Knowsley Council's Environmental Sustainability Service promote the Eco-schools programme and offer guidance to Knowsley's schools.

8.3 How this work will be taken forward

This cross cutting theme will be addressed as appropriate in conjunction with the Council's wider Social Growth strategy as the projects and action plans referred to in this strategy are developed. For example, the LGIU's document on social growth and climate change adaptation' will be used when developing the Climate Change Resilience Action Plan referred to in Section 5.5 above.

8.4 Relevant partnerships/fora:

- Area Partnerships;
- Children and Young Peoples' Board; and
- Youth Parliament

9. Funding Climate Adaptation and Carbon Reduction Initiatives

Despite the current challenges of financial austerity for the public sector, the Council is determined to undertake strategic external fundraising in the form of public grant, developer contributions or business inward investment for the objectives within the strategy. Likely funders include amongst others the European Commission, energy suppliers and distribution network operators and other private investors.

Knowsley may also benefit from financial contributions from developers in the future as set out in the emerging Local Plan and will continue to explore opportunities to 'invest as we save' noting there may be potential substantive cost-benefits from prevention measures on energy efficiency in particular, as evidenced by Knowsley Council's Carbon Management Plan.

10. Next Steps

This strategy sets out our vision for addressing climate change in Knowsley, along with a set of underlying objectives. Whilst developing the strategy, it has become evident that addressing climate change has become increasingly embedded within other strategies and action plans. This strategy will, therefore, become Knowsley's overarching document on climate change, referring to other relevant action plans where appropriate, to avoid duplication. Links to all relevant documents will be posted on the climate change pages of Knowsley Council's web site (www.knowsley.gov.uk) once finalised.

Government proposals on addressing climate change are only starting to emerge, with The Carbon Plan published in December 2011. Each chapter outlines the relevant key Government proposals from the Plan. These proposals will be integrated within the relevant Action Plans as further details are outlined by Government.

Also identified are the key partnerships and fora relevant to each area. It will be the responsibility of the partners within these groups to ensure that the objectives of this strategy and Government proposals on climate change are integrated within their plans.

Knowsley Council will take responsibility for monitoring and reporting progress against this strategy and will collate monitoring data available from the relevant action plans to produce an Annual Report. The report will be presented to the relevant partnerships and Knowsley Partnership Executive Team along with recommendations for further action where required.

This strategy will also be updated further as Government and sub-regional proposals are developed.

Appendix A – Sustainable Knowsley Low Carbon and Renewable Energy Action Plan

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
1. Policy and Strategy								
1.1	Development of the LSP Climate Change Strategy and Action Plan	<p>Sets out Knowsley-wide vision, objectives and targets for reducing carbon emissions, climate resilience and a low carbon economy.</p> <p>The Partnership will aim to reduce CO₂ emissions by 31% from 2005 levels by 2020 from the following:</p> <ul style="list-style-type: none"> • Energy use in domestic, industrial and commercial properties (excluding those within the EU Emission Trading Scheme); and • Road transport (excluding motorways). 	Local Strategic Partnership	N/A	<ul style="list-style-type: none"> ➤ Approval of draft Strategy by LSP Executive Team 17th September 2012, Cabinet 17th October 2012, Council 12th December 2012 and LSP Board February 2013; ➤ This project list is appended to the Climate Change Strategy. 	S/M	Overall target reduction 186 ktonnes by 2020 (includes projects below).	Dale Milburn
1.2	Development of the Knowsley Local Plan (formerly LDF)	Governs physical development and regeneration in Knowsley, to include SPD on Sustainable Design and Construction.	Knowsley Council	Yes	<ul style="list-style-type: none"> ➤ Core Strategy – publication (Oct. 2012); submission to Secretary of State (Jan 2013); adoption (Sept. 2013); and ➤ SPD on Sustainable Design and 	M/L	New development to be “zero carbon” by 2016 (housing) and 2019	Jonathan Clarke

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known) (commercial)	Lead officer
					Construction – adoption linked to Core Strategy.			
1.3	Knowsley's Economic Regeneration Strategy 2012-15	Framework to guide strong and sustainable economic growth including development of the low carbon economy.	Knowsley Council Economic Partnership		The Low Carbon Economy is a Key Growth Sector identified within the draft Strategy with key milestones identified as being: <ul style="list-style-type: none"> ➤ Undertaking a feasibility study into establishing KIP as a Green Energy Hub with a combined heat and power plant Enabling local Knowsley businesses to access supply chain opportunities for the future Irish Sea Offshore Wind Farm; and ➤ Working with training providers such as Knowsley Community College to support local residents to gain the skills needed to secure jobs in the low carbon and green energy business sector. 	S/M/L	TBC	Barry Fawcett

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
1.4	Joint Recycling and Waste Management Strategy for Merseyside	Strategy outcomes are focused on the delivery of the EU Waste Framework Directive's household waste recycling target of 50% by 2020 and maximising carbon reduction benefits in the long-term sustainable management of municipal waste 2011 – 2041.	The Merseyside Waste Partnership which includes Knowsley Council and Merseyside Recycling and Waste Authority.	Part	<ul style="list-style-type: none"> ➤ To meet a 50% recycling rate of household waste by 2020; ➤ To support a pathway towards zero waste to landfill and set a 10% landfill target for municipal waste by 2020 and 2% by 2030; ➤ To set carbon reduction targets to reduce the carbon footprint of municipal waste management service on Merseyside; ➤ To maximise waste prevention and set targets to reduce the kilograms of waste produced per household on Merseyside by 2020 and 2030; ➤ To raise awareness and understanding of waste management issues to encourage and support residents to change their behaviour and take 	S/M/L	From LCR baseline of 33,384 tonnes in 2011	John Flaherty

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
					part, particularly in waste prevention and resource efficiency activities; and ➤ To reduce the ecological footprint of waste management activities on Merseyside.			
1.5	Knowsley Council Carbon Management Plan (CMP)	Strategy for reducing the Council's carbon emissions 2011-2016. The Plan sets an interim target to reduce the Council's carbon emissions by 22% from 2009/10 levels by 2016, with an aspirational target of a 41% reduction.	Knowsley Council	Part	See CMP for the full list of projects which include building closures, use of voltage optimisation, energy efficient lighting, water use efficiency measures, staff behaviour change programmes and use of renewable energy technologies.	S/M/L	6,672 tonnes by 2016	Dale Milburn
1.6	Development and approval of a Liverpool City Region Sustainable Energy Action Plan (SEAP)	The development of a LCR Sustainability Energy Action Plan (SEAP) represents a key stage in collaboration at the LCR on low carbon / renewable energy as it will help the LCR to identify and exploit low carbon energy opportunities by facilitating private and public sector	LEP, Low Carbon Economy Board, MEAS and LCR local authorities.		<ul style="list-style-type: none"> ➤ Approval of draft SEAP by Low Carbon Economy Board and City Region Chief Executives; ➤ LCR Energy Summit on 12th July 2012; and ➤ Approval of final SEAP by the Council. 	S/M	20% carbon reduction across the LCR by 2020	Rupert Casey

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
		interventions and investment.						
1.7	Signing the Covenant of Mayors	EU initiative where local authorities sign a commitment to reduce energy use in their areas and through this are able to access EU funding to deliver identified projects. Requirement to adopt a reduction target and produce an action plan within 12 months of signing – the SEAP, LSP Climate Change Strategy and CMP will evidence this.	Knowsley Council (linked to City Region collaboration on low carbon)	N/A	<ul style="list-style-type: none"> ➤ Approval by Cabinet to sign the Covenant ➤ Adoption of the target and action plan ➤ To be approved alongside the LSP Climate Change Strategy. 	S/M	20% carbon reduction by 2020	Rupert Casey
1.8	Signing the LGA Climate Local Commitment	Successor to the Nottingham Declaration – local authority commitment to reduce carbon emission within our own estate and local area and ensure resilience to future climate change.	Knowsley Council	N/A	<ul style="list-style-type: none"> ➤ Approval by Cabinet to sign the Commitment alongside approval of the LSP Climate Change Strategy; and ➤ Publish the Council’s commitments, actions and progress. 	S/M	31% of 2005 CO2 emissions by 2020	Rupert Casey

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
1.9	Energy and Carbon Master Plan	To establish an energy baseline position for Knowsley to identify optimal energy solutions and distribution network capacity to accommodate local power generation. This is seen as a next step from the approval of the SEAP and the Council is seeking to pilot this approach for the City Region through the KIP Energy Centres and Heat Network Project.	Knowsley Council and Scottish Power as the Distribution Network Operator (DNO).	No	To investigate the potential for integration of low and zero carbon technologies at a strategic level as well as individual areas of the proposed development, with a view to maximising carbon savings and/or mitigating the potential for excessive greenhouse gas emissions.	M/L	TBC	Rupert Casey
2. Business								
2.1	Promotion of energy efficiency measures and funding sources for local businesses.	Programme of events via the Business Environment Network.	Knowsley Council Knowsley Chamber		Energy Network established	S/M/L		Barry Fawcett
2.2	Facilitate and introduce low carbon/renewable energy proposals to major businesses in Knowsley	Knowsley Council facilitating meetings where appropriate between utility companies/other appropriate agencies and businesses in Knowsley.	Knowsley Council Utility Companies	TBC	Opportunities identified through ongoing business liaison meetings with individual businesses. Introductions facilitated as appropriate on adhoc basis.	S/M/L		Barry Fawcett
2.3	SMART Grid	Develop the use of a SMARTgrid/meter trials.	Knowsley Council and energy	TBC	Linked to proposals to be developed through the KIP Energy Centres and			Barry Fawcett

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
			companies		Heat Network project.			
2.4	Jaguar Landrover Energy Requirements	Provision of infrastructure for the transition to low emission vehicles, including the supply chain.	Knowsley Council, Jaguar Landrover, Utility Companies	TBC	This project is currently on hold following initial discussions between JLR and Scottish Power facilitated by the Council & LEP. JLR are concentrating on production issues at present	M		Barry Fawcett
2.5	Biomass technology exploitation with local businesses	A number of local businesses have identified biomass as a potential energy solution. Further work needed around viability and security of supply.	Knowsley Council and energy companies	TBC	Currently biomass is not a viable solution due to cost and security of supply. This will be an ongoing piece of work as the market changes & matures in future years biomass may become viable	L		Barry Fawcett
2.6	Onshore wind	Feasibility study of 3 sites identified for turbines.		TBC	Part of the LCR low carbon action plan and will be taken forward in partnership with the LEP and private sector.	M/L		Barry Fawcett
3. Employment & Skills								
3.1	Developing business / school links to meet future low carbon employment opportunities.	Collaborative working with work with employers such as E.ON and Scottish Power so that school / college pupils and those of	Positive work progressing with the Council, Scottish	TBC	➤ Council officers and Scottish Power colleagues organising a visit to Rhosnere High	S/M	TBC	Barry Fawcett

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
		working age had the opportunity to develop their skills and experience to take advantage of new employment opportunities in the growing low carbon economy.	Power, Knowsley Chamber of Commerce and the City Region LEP.		<p>school in North Wales for Knowsley Head teachers to share learning;</p> <ul style="list-style-type: none"> ➤ Knowsley Head Teachers to be invited to attend a forthcoming half day workshop being organised by the City Region Business Forum; and ➤ Knowsley Chamber/Liverpool LEP to develop a Knowsley Business Forum. 			
3.2	E-on Energy Assessors Scheme	Delivery of 25 apprenticeships in Knowsley.	E.ON Knowsley Housing Trust					KHT
3.3	Low carbon skills hub at Knowsley Community College		Knowsley Community College		This will be developed by KCC as part of their commitment to support local growth opportunities	S/M		Barry Fawcett
3.4	Community Energy Fit	Provision of training to 160 unemployed residents in relation to energy efficiency to reduce carbon, fuel poverty and increase skills for future	E.ON, National Energy Action and Knowsley Council	Funded by E.ON	<ul style="list-style-type: none"> • Launch event; • Training events; and • Completion for December 2012. 	S	TBC	Rupert Casey

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
		employment.						
4. Regeneration Schemes								
4.1	Knowsley Industrial Park regeneration through the provision of heat and power infrastructure.	The development of opportunities for new energy generation and distribution infrastructure at Knowsley Industrial Park (KIP).	Knowsley Council	TBC	<ul style="list-style-type: none"> ➤ The Council considering procurement options for the selection of a partner who will be able to design, build, operate and maintain the new network; and ➤ Promotion of the project at the City Region and national level as a tangible first step in delivering the SEAP. 	S/M/L		Barry Fawcett
4.2	Stockbridge Village	Potential for renewable energy measures to be incorporated into the wider regeneration of Stockbridge Village.	Knowsley Council					Lisa Harris/ Steph Byrne
4.3	Kirkby Town Centre	Potential for renewable energy measures to be incorporated into the programme.	Knowsley Council and Tesco					Lisa Harris/ Steph Byrne
4.4	Prescot Town Centre	Potential for renewable energy measures to be incorporated into the programme.						Lisa Harris

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
5. Housing								
5.1	Stockbridge Village CESP Home Energy Efficiency Scheme	Energy efficiency measures to private and social rented stock. 1800 properties in total.	British Gas Villages Housing Knowsley Council					Lisa Harris/ Steph Byrne
5.2	Home energy improvements through the Decent Homes Standard and Green Deal.	Council working with Social Landlords.	Knowsley Council RSLs					Lisa Harris/ Steph Byrne
5.3	Kirkby CESP Home Energy Efficiency Scheme	External wall insulation to be installed to approximately 1,700 'no fines' properties (i.e. hard to heat).						Lisa Harris/ Steph Byrne
5.4	Cosy Knowsley Scheme	Offering free loft and cavity wall insulation to Knowsley residents provided by British Gas under the Carbon Emissions Reduction Target (CERT).	British Gas Knowsley Council					Lisa Harris/ Steph Byrne
5.5	Green Deal and Energy Company Obligation	Green Deal presents a number of options for Knowsley to choose in determining its role. There is an opportunity to consider a wider Liverpool City Region (LCR)	Knowsley Council	TBC	➤ Strategic Housing to identify how other LCR local authorities are preparing for the Green Deal and opportunities for collaboration through			Lisa Harris/ Steph Byrne

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
		approach which could benefit from the lessons already learnt from Birmingham and AGMA.			<p>the Housing and Spatial Planning Co-ordinating Group;</p> <ul style="list-style-type: none"> ➤ To identify how other LSP organisations are preparing for the Green Deal and opportunities for collaboration; and ➤ Report back to the SK Programme Board when the DECC / DCLG guidance is issued with a recommended way forward. 			
6. The Council's Estate and Services								
6.1	Installation of solar panels to Council buildings	Options assessment for the installation of solar panels on Council buildings and schools.	Knowsley Council	Yes	Solar panels currently being installed on the roof of the Huyton Municipal Building Annex.	S		Mark Butterworth
6.2	Installation of a range of energy efficiency measures in Council buildings in accordance with the Carbon Management Plan	Measures include voltage optimisation, energy efficient lighting and a behaviour change programme.	Knowsley Council	Part			See 1.5 above	Dale Milburn Mark Butterworth

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
6.3	Replacement of Knowsley's street and traffic sign lighting	Carbon reduction via energy efficient and flexible lighting.	Knowsley Council SSE	Funded			See 1.6 above	Lisa Harris
6.4	Reducing energy use in Knowsley's Learning Centres	Development of a Sustainable Energy Management Plan to reduce energy use in the Learning Centres, linked to the CMP.	Knowsley Council Transform Schools				See 1.5 above	Mark Butterworth
7. Partnership working and delivery mechanisms								
7.1	LCR Low Carbon Economy Board	Private sector led group established to drive forward the low carbon economy to deliver business growth and job creation on behalf of the LEP.	Scottish Power E.ON			S/M/L		Barry Fawcett
7.2	LCR Sustainable Energy Action Plan Steering Group	Steering Group established to develop an LCR SEAP.	MEAS LCR Local authorities	N/A	See 1.7	See 1.7	See 1.6	Rupert Casey
7.3	Sustainable Knowsley Programme Board	Established to co-ordinate Knowsley's, and wider Liverpool City Region, low carbon and renewable energy initiatives.	Knowsley Council Energy Savings Trust		This plan.			Dale Milburn

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
7.4	Merseyside Waste Partnership Senior Officers Working Group	Established to co-ordinate the delivery of the Merseyside Recycling and Waste Management Strategy and to deliver effective waste minimisation, recycling and disposal services through collaboration.	Merseyside local authorities, Halton Council and MRWA.	Part	<ul style="list-style-type: none"> ➤ Delivery of Recycling and Waste Management Strategy objectives; ➤ Procurement of Resource Recovery Contract; ➤ Waste minimisation and recycling community behavioural change; ➤ All waste management choices should seek to optimise carbon reduction wherever practicable 	S/M/L	Reduction against 2011 baseline of 33,384 tonnes.	Rupert Casey
7.5	Green Energy Task Force	Collaborative working to maximise the economic and social benefits that the low carbon economy offers to Knowsley.	Knowsley Council E-on Scottish Power Energy Saving Trust	TBC	<ol style="list-style-type: none"> 1) Kirkby Industrial Park Heat Network Feasibility Study and Strategic Partner Preparation; 2) Employment Skills for the Low Carbon and Renewable Energy Economy; 3) Development of a Sustainable Energy Action Plan for Knowsley; 	S/M	TBC	Dale Milburn

Ref	Title	Description	Lead partners	Funded	Key milestones	Timescales S (0 – 1 yr) M (1 – 2 yr) L (2 yr +)	Est. Carbon reduction (if known)	Lead officer
					4) Energy and Carbon Master Planning; 5) Policy Issues / External Funding.			
7.6	Knowsley Council and E.ON Memorandum of Understanding	Formalisation of the partnership working linked to the Community Energy Fit project and Energy Assessors Scheme.	Knowsley Council E-on		<ul style="list-style-type: none"> ➤ Knowsley Community Energy Fit; ➤ Primary Schools energy awareness; ➤ CMP project discussions; and ➤ Smart Cities actions. 	S/M		Dale Milburn
7.7	Collaborative Working with Scottish Power	Partnership working with the DNO at a strategic City Region Level.	Knowsley Council Scottish Power		<ul style="list-style-type: none"> ➤ Outcomes from Smart City conference (June 2012). 	S/M/L		Dale Milburn
8. Communications and behaviour change								
8.1	Sustainable Knowsley Communications Programme	Development of a communications programme to identify opportunities that can be publicised under the Sustainable Knowsley banner.	Knowsley Council	TBC				Catherine Sheel