Croydon Climate Change Mitigation Action Plan

Croydon Environment and Climate Change Partnership

Contents

Foreword

By the Chair of the Croydon Environment and Climate Change Partnership Cllr Jason Perry, Cabinet member for Planning Conservation and Climate Change

By 2040, Croydon's vision is to be one of the most enterprising and sustainable cities in the UK. This ambitious aspiration cannot be achieved by one organisation acting in isolation, but by a coordinated programme of activity from stakeholders across the borough. The Environment and Climate Change Partnership (ECCP) is one of the theme partnerships within the Local Strategic Partnership (LSP). The ECCP is comprised of environmental stakeholders including Transport for London, the Energy Saving Trust, local businesses, schools and representatives from the faith and voluntary sector. The ECCP works to deliver the key environmental priorities for Croydon and is responsible for the delivery of this action plan.

The ECCP has set a long term target for the borough of a 34% reduction in CO_2 emissions by 2025. This action plan seeks to not only meet this target but also to create opportunities for Croydon in doing so. We aim to make the transition to a low carbon economy and improve energy security by reducing our reliance on fossil fuels. It aims to increase the borough's energy generation capacity using decentralised and renewable energy technologies. Currently there are numerous initiatives to provide incentives for energy efficiency measures and renewables, unprecedented opportunities exist for homeowners and businesses to improve the comfort of their buildings and produce their own energy. We aim to better target these national initiatives and create local programmes which will help tackle long-standing challenges within the borough such as fuel poverty and social exclusion and improve the overall quality of life through the provision of cleaner, greener spaces and low carbon travel choices.

If you have any questions about this strategy or the work of the ECCP please contact Croydon Council's sustainable development service on **020 8760 5791** or email: **sustainability@croydon.gov.uk**

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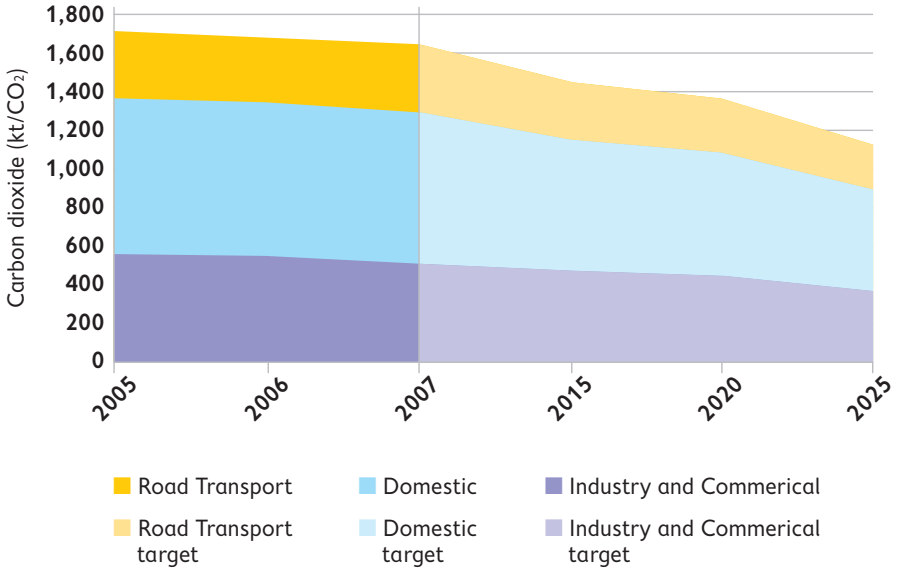
Executive Summary

The UK's Climate Impacts Programme's Climate Projections 2009 (UKCP) show that under a business-as-usual scenario temperatures are projected to rise up to 5°C by 2070. Under the same scenario, winter precipitation levels are forecast, to increase by up to 40% by 2070, while summer precipitation levels are likely to decrease. Globally, we have already seen a 0.7°C rise in temperature and this is set to rise as CO_2 emissions will continue to increase from the current level of 430 parts per million (ppm). Exceeding a concentration of 450 ppm will mean that limiting temperature rise to 2°C is unlikely to be achievable. Despite efforts to mitigate these climate change impacts it is therefore likely we will experience an increase in global temperature at or above 2°C. The evidence is therefore clear that a significant effort from local authorities needs to be made to reduce CO_2 emissions enough in order to limit the extent of climate change.

The proportional distribution of CO_2 emission trends based on NI 186 data from 2005 to 2007, extrapolated to show emission trends following Croydon's 2025 34% CO_2 emission reduction target



A CO_2 reduction target of 34% from a 2005 baseline by 2025 has been set for the borough by the ECCP. This target does not include national or regional contributions to CO_2 reduction but forms a realistic, and significant, local contribution to the Mayor of London's 60% reduction target by 2025 and the national target stemming from the 2008 Climate Change Act of an 80% reduction by 2050. Where possible the national contributions to local CO_2 reduction have been equated in order to calculate the required contribution that must come from local action if regional targets are to be met. The potential contribution from the decarbonisation of the national grid has been taken into account and we have used assumptions on the future energy mix in the UK based on government projections to assist us in the setting of the local targets. The overall carbon reduction target for the whole strategy has been set, and in some places this has been broken down for specific actions. This is an ongoing process and for some specific areas such as transport and the commercial sector the actions set out within this strategy will enable more refined and action specific targets to be set in the future.

From the graph above we are able to estimate overall CO_2 reduction in the borough since 2005 which includes reduction through national and local initiatives. Between 2005 and 2007 there has been a saving of 2.24% in the residential sector, an 8.57% reduction in the industrial and commercial sector and a 1.43% reduction in the transport sector. Through the assessment of how we are to meet the targets set this strategy has looked closely at the contribution that has been made locally to CO_2 reduction since 2005 which puts much emphasis on the requirement for significant CO_2 reduction over the next few years leading up to 2025.

The implementation of this strategy will be overseen by the ECCP. The Partnership has a strong focus on behaviour change related to energy efficiency, smarter travel and waste management and aims to co-ordinate marketing activity at a strategic level. A communications and marketing action plan is included in this document with the goal to develop a communications strategy through which the ECCP Board will coordinate marketing and behavioural change activity across residential buildings, waste management, smarter travel and sustainable business practices This focused work on behavioural change could contribute up to 20% of Croydon's overall CO_2 reduction target. The marketing strategy will focus not only on promoting the benefits of behavioural change with regards to CO_2 reduction but also the financial savings and health benefits that can be made as a result of targeted action.

Croydon's transport flow is characterised by high levels of private car use which is similar to the UK average, in contrast to the transport patterns in inner London where a high proportion of the population use public transport. This action plan focuses strongly on encouraging people to cycle, walk, join car clubs and invest in electric vehicles. Targeted action will be on the development of workplace travel plans and school travel plans. The actions are aligned with the aims set out in the draft Croydon Borough Wide Transport Strategy, The draft Biking Borough Strategy, The Mayor of London's Transport Strategy and The Mayor of London's draft Climate Change Mitigation and Energy Strategy.

A significant level of Croydon's overall CO_2 emissions (48%) are from the residential sector. Croydon has high a high proportion of properties with poor energy efficiency standards, meaning there is great potential to reduce carbon emissions from this sector. A detailed analysis of energy efficiency installations since 2005 and potential measures to 2015 has been carried out. So far partners within the ECCP have enabled a saving of 6.13Kt/CO_2/yr as a result of cavity wall, loft and top up loft installation measures in both private and council owned properties. Creative Environmental Networks (CEN) has equated that there are a further 48,701 potential measures in the borough for cavity wall, loft and top up loft insulation which we plan to complete by 2015. RE:NEW (explained in Chapter 8) will be launched in the Autumn 2010, starting a series of area-based home energy efficiency retrofit programmes. From 2015 to 2025 the focus will turn to the harder measures and full house retrofit, encouraging 40,000 homes in the borough to install a package of measures including solar thermal technology, solid wall insulation, floor insulation and draft proofing. The roll out of smart meters to all households in the borough and an effective communications and marketing strategy to run alongside the area-based retrofit programmes is hoped to encourage mass behavioural change. The communications and marketing strategy will address a number of challenging areas with respect to household energy efficiency especially in the private rented sector which constitutes 14% of the borough's housing stock.

With regards to the industrial and commercial sector within Croydon, the work of Envibe is of significant importance and will guide much of the work to promote efficiency in energy, waste and water management in addition to smarter travel within this sector. Croydon has been recognised in the London Plan as one of four major economic opportunity areas. Plans for a large district energy network within the town centre will provide businesses with reliable low cost and low carbon heat, establishing Croydon Metropolitan Centre as a leading location for the low carbon economy. Investment in commercial infrastructure is also of importance to ensure the growth of the low carbon economy.

The main aim of the Waste Action Plan is to reduce waste to landfill and increase the borough's recycling rates, ensuring that the landfill allowance targets are met. Croydon will endeavour to follow the aims set out in the 2010 Waste Framework Directive, 2007 National Waste Strategy and the waste hierarchy.

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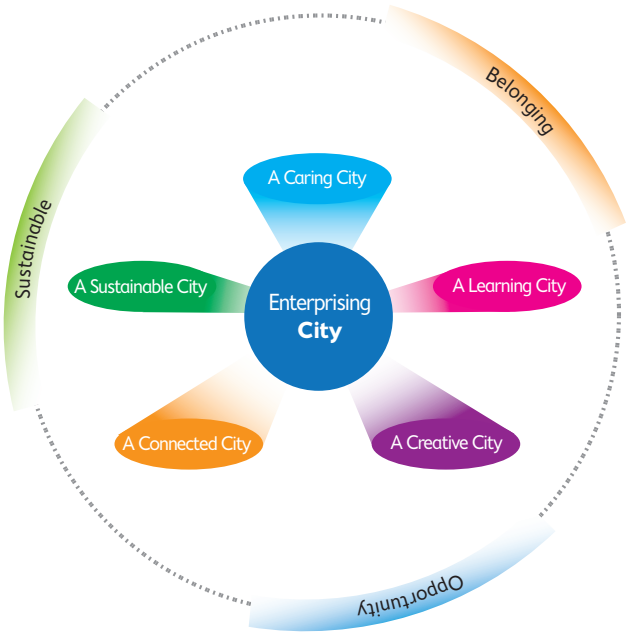
Croydon's vision

The 'Imagine Croydon' visioning exercise took place in 2009 to develop a long-term vision for the borough. Over 20,000 local people were consulted. (**http://www.croydon.gov.uk/planningandregeneration/croydons-planning-policy-framework/local-development-framework**).

By 2040, Croydon's vision is to be 'London's most enterprising borough – a city that fosters ideas, innovation and learning and provides skills, opportunity and a sense of belonging for all.'



'A **Sustainable City** is a place that sets the pace amongst London Boroughs on promoting environmental sustainability and where the natural environment forms the arteries and veins of the city.' (We Are Croydon; this is our vision', 2010).

Croydon is committed to sustainable economic growth. In 2040 more people will be living and working in Croydon. Growth has been planned so that the town centre benefits from regeneration while local character is preserved. There will be sustained investment in core infrastructure to enable this growth while also helping to reduce carbon emissions and adapt to the impacts of climate change.

But sustainability is not just about development. Residents and businesses will also be inspired to take greater pride in their environment and to take responsibility for their environmental impact. (We Are Croydon; this is our vision', 2010).

1.1. Background

This document sets out the short and long term priorities for Croydon and defines the strategic framework through which the ECCP will conduct work to mitigate against climate change risks across all sectors within the borough. This includes residential buildings, transport, waste and carbon reduction in the commercial and business sectors. All actions will contribute to meeting the interim carbon reduction targets.

It is commonly regarded that as a result of the recent recession there has been a reduction in CO_2 emissions as economic activity has declined. However, as the economy recovers we must plan for long term carbon reduction. Croydon has set a target of a 34% CO_2 reduction by 2025, based on a 2005 baseline. An overall carbon reduction target for the whole strategy has been set, which in some places has been broken down for specific actions. This is an ongoing process and for some specific areas such as the transport and commercial sectors the actions set out within this strategy will enable more specific targets to be set in the future.

In support of this action plan a State of the Environment Report (SER) has been produced. The SER is structured to provide information in support of the Climate Change Mitigation and Adaptation Action Plans. The indicators within this report directly correspond to data required for the targets set within the Climate Change Mitigation Action Plan. It provides a framework for environmental reporting that will be built on annually. This will evolve to show long term trends for relevant transport, residential, industrial, commercial and waste indicators as well as reporting the overall quality of the built and natural environment. The SER will display progress made through partnership actions and highlight areas that may need more targeted and strategic work.

The Climate Change Mitigation Action Plan links in with a number of existing documents, including the Local Development Framework (LDF) suite of documents. The LDF is one of the key routes for delivery of this Action Plan. The Core Strategy is the key document in the LDF that will set out the spatial vision for Croydon for the next 20 years or so and how it can be achieved. A draft issues and options paper for the Core Strategy has been published for consultation, dealing with the vision theme of Croydon as 'A Place with a Sustainable Future' and thematic strategies relating to 'climate change, energy, CO_2 and water management' and 'the green grid and rivers'. These strategies attempt to ensure that the built and natural environment of the borough is capable of mitigating and adapting to climate change. Spatial objectives to achieve this strategy support mitigation and adaption to climate change. A full list of the documents linked to the Climate Change Mitigation Action Plan can be found below:

- LBC: Draft Borough Wide transport Strategy, 2010
- LBC: Draft Biking Borough Study, 2010
- LBC: draft Core Strategy, 2010
- HM Government, The UK Low Carbon transition Plan: National Strategy for Climate and Energy, 2008
- The Mayor's Transport Strategy, 2010
- Delivering London's Energy Futures; the Mayor's draft Climate Change Mitigation and Energy Strategy, 2010
- Department of Energy and Climate Change, The Annual Energy Statement, 2010

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Document structure

This document first sets the scene for why a detailed climate change action plan for Croydon is necessary, documenting the overall CO_2 reduction target in the chapter 1, while identifying the key characteristics of Croydon in chapter 3 and an analysis of climate change projections in chapter 4.

Chapter 5 reviews the ECCP, documenting its role in governing the strategic work that is required to carry out the actions within this plan. This is followed by a separate communications and marketing action plan for the ECCP Board. All other actions have been structured by sector, documenting the role of each strategic group within the ECCP. These include residential, low carbon economy, waste and transport, which are dealt with in chapters 7 to 10.

The action plan tables have been constructed to indicate key actions, deadlines and those responsible for the actions. There is often more than one partner responsible for the completion of the action, and where this is the case lead partners are identified. The success criteria as milestones for the completion of each action have been listed breaking up the work required for each action into a project plan. This will also help the partnership to monitor progress. Targets have been set for each action to ensure that the overarching interim and long term CO_2 targets will be met. Any progress to date will be documented, which will allow progress to be continually monitored against the planned milestones and targets.

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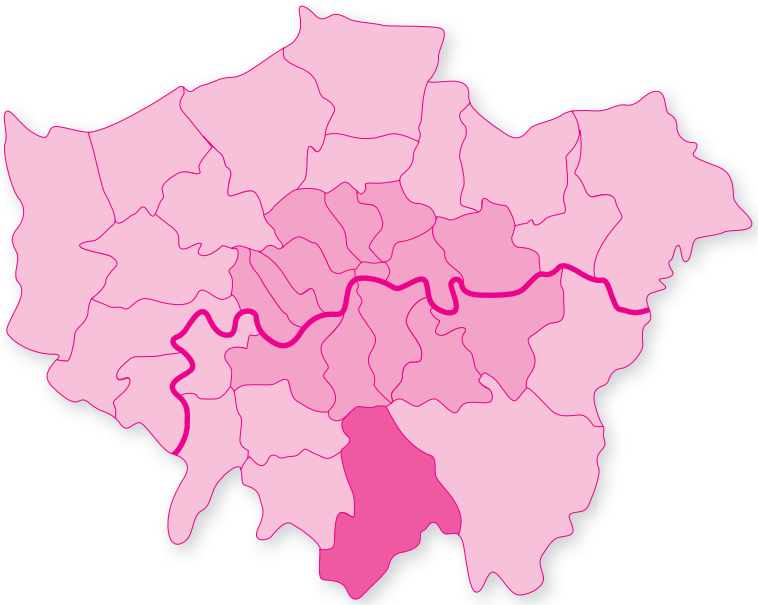
About Croydon

Croydon is the southern-most borough of London, bordered by Surrey to the south, Bromley to the east, Sutton and Merton to the west and the boroughs of Lambeth, Lewisham and Southwark to the north. To the south are the Surrey districts of Reigate, Banstead and Tandridge. It is one of the largest boroughs in London, covering an area of 8662 hectares, 2770 hectares of which is green belt.



Croydon has the 2nd largest population out of all London Boroughs and it is the ninth largest unitary authority in the country. The borough has a population of 341,800, with an average population density of 39.6 people per hectare which is greatest in the north of the borough. The population size is projected to increase to 380,000 by 2031 (draft LBC Core Strategy 2010). Out of the existing 341,800, 82,000, almost 25%, are under the age of 18. 36% of Croydon residents are from black and minority ethnic (BME) communities predominantly focused in the northern wards. With respect to the diversity of the borough, over 100 languages are spoken. There are also significant numbers of refugees and asylum seekers within Croydon. Around 40% of children and young people are from BME groups. The London Borough of Croydon ranks as the 15th least deprived Borough, out of 33 authorities in London.

Croydon is one of London's largest retail and commercial centres and benefits from good rail, tram and road links. It is one of the country's largest commercial centres and is home to more than 20 'blue-chip' companies. The employment rate, at 74.6% is among the highest in London, but the borough as a whole has a relatively weak skills base in comparison to other London Boroughs and wages are relatively low. Over the next five years significant developments (residential and commercial) are either planned or in the pipeline for Croydon.

Croydon benefits from over 120 parks and open spaces and has some of London's most expensive housing. Large parts of the borough also have inner-city characteristics.

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The challenge of long-term climate change in Croydon

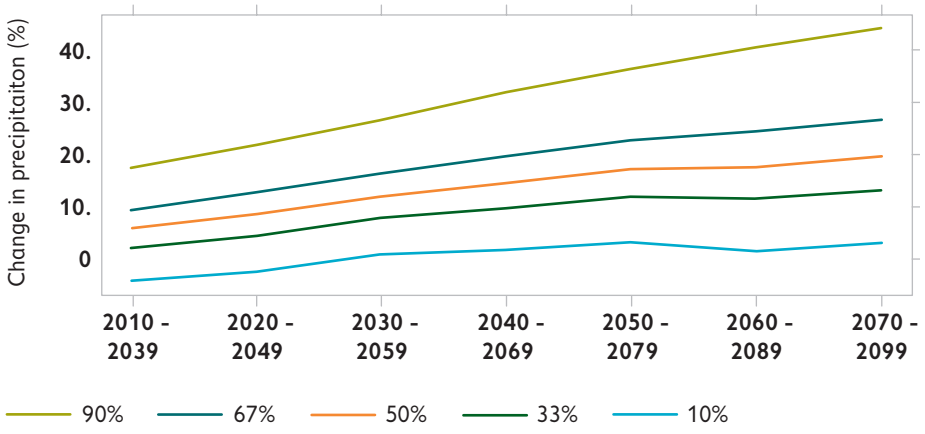
There is common scientific consensus that the climate is changing. Climate change may pose potential risks to the economic activity and standards of living within Croydon; it is essential for local authorities and communities to act now to reduce carbon dioxide emissions if these risks are to be minimised. The cost of mitigation action now is small in comparison to the cost the impact of climate change will incur if action is delayed and average global temperatures exceed a 2°C increase.

The Department of Food and Rural Affairs (DEFRA) in 2009 documented UK Climate Projections (UKCP09) using models based on a range of emissions scenarios from the IPCC Special Report on Emissions Scenarios (SRES). The projections for London, shown below, are based on a 'medium emissions scenario'; they assume no political intervention and that regional carbon emissions continue to increase. Due to the uncertainty attached to modelling climate change, the graphs demonstrate the varying levels of probability of the projected outcomes. The table below defines what is meant by each probability level.

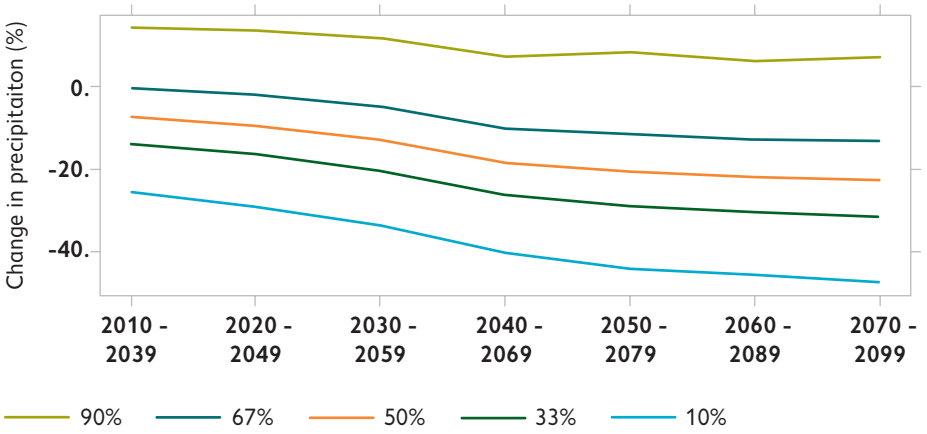
Defined probability levels for climate change projection (UKCP09)

Probability level	Description
10%	Very unlikely to be less than
33%	Unlikely to be less than
50%	Central Estimate
67%	Unlikely to be greater than
90%	Very unlikely to be greater than

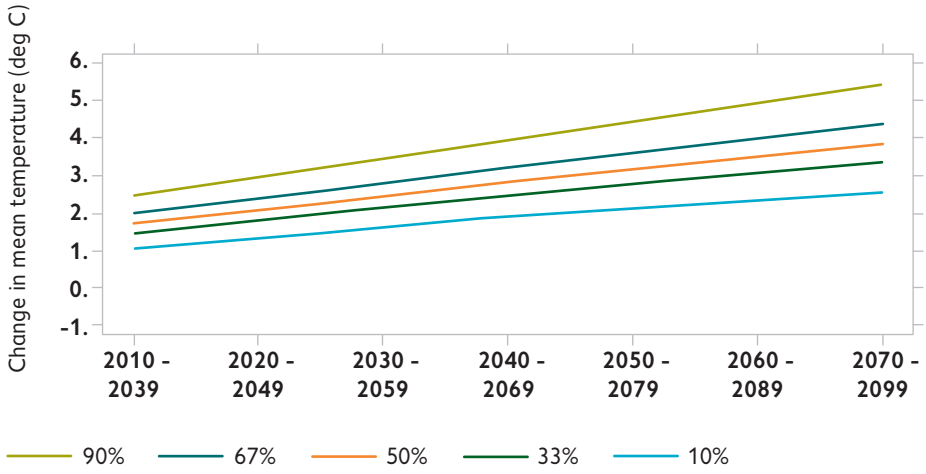
% probability of winter precipitation level change, based on a medium emissions scenario, SRES (UKCP09)



% probability of summer precipitation level change, based on a medium emissions scenario, SRES (UKCP09)



% probability of degrees Celsius temperature change, based on a medium emissions scenario, SRES (UKCP09)



Global temperatures have already risen by 0.7°C and all but one of the warmest years on record have occurred since 1990. This rise in temperature has been accompanied by a rise in extreme weather events including the unseasonal localised flooding which occurred in Croydon during the summer of 2007 after drought during 2006. The growing scientific consensus is that stabilising atmospheric CO_2 concentrations at 450 parts per million (ppm) is required to avoid catastrophic climate change. This target can only be achieved through substantial changes in how we produce and consume our energy.

Current average global CO_2 concentrations are at 430ppm, a dramatic increase from the pre industrial concentrations of 285ppm. If concentrations are stabilised at around 500 to 550ppm the probability of a 2 to 3°C temperature rise is very high as demonstrated by the table shown below:

Concentration levels and temperature increases. Likelihood, in percentages, of exceeding a temperature increase at equilibrium relative to 1850 pre industrial concentrations (Stern, 2010).

Stabilisation Level (ppm CO_2)	2°C	3°C	4°C	5°C	6°C	7°C
450	78	18	3	1	0	0
500	96	44	11	3	1	0
550	99	69	24	7	2	1
650	100	94	58	24	9	4
750	100	99	82	47	22	9

A cautious estimate of the consequences if we take no action will see CO_2 concentrations reaching approximately 750 ppm. With emissions currently at 430 ppm it is generally considered that we have missed the chance to stabilise CO_2 concentrations at 450 ppm. This will give us a much higher probability of there being a 2°C increase in global temperatures. It is considered that any greater increase would be dangerous (Stern, 2009).

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Governance

5.1. Where we are now: The Environment and Climate Change Partnership (ECCP)

The Environment and Climate Change Partnership (ECCP) is one of the themed partnerships within the Local Strategic Partnership (LSP). A range of environmental stakeholders comprise the ECCP including Transport for London, the Energy Saving Trust, local businesses, schools and representatives from the faith and voluntary sector. The ECCP works to deliver the key environmental priorities for Croydon, namely:

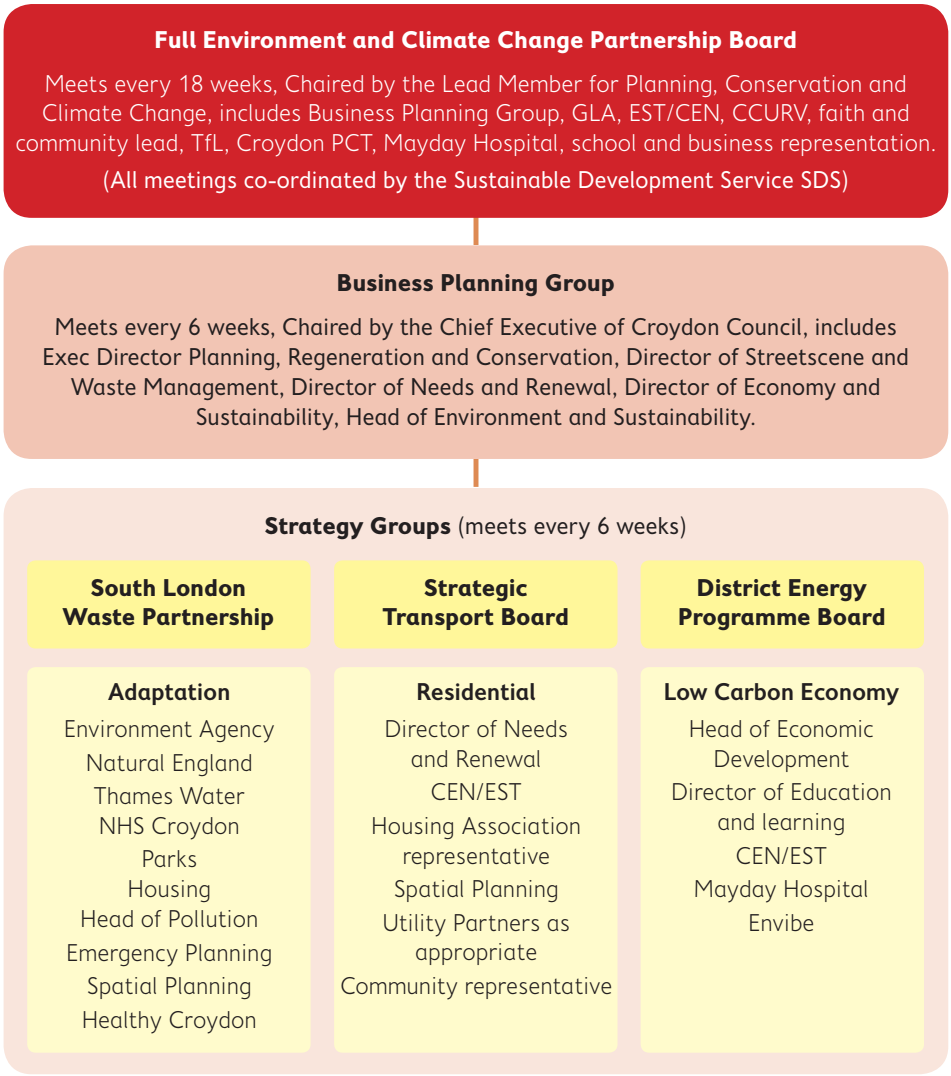
- effective communications and marketing for individual behaviour change
- tackling climate change by reducing CO_2 emissions, including domestic emissions
- facilitating a modal shift to sustainable transport
- effective management of our natural resources to ensure climate resilience
- addressing waste and improving environmental quality
- supporting the low carbon economy

These environmental aims deliver wider benefits in terms of saving money and improving the health and wellbeing of local communities.

The ECCP co-ordinates environmental activity by partners at a strategic level and brings this together as part of a single integrated programme. This enables overarching work on communications and marketing for behavioural change to be co-ordinated by the partnership board and aligns timescales for different strategy work in relation to the long term carbon reduction targets for the whole borough.

The structure of the ECCP is presented in the table below, demonstrating the collaboration of work between strategic groups working on climate change mitigation within the residential housing, transport and waste sector, as well as district energy, carbon reduction in local schools and businesses and climate change adaptation.

5.1.1. The structure of the Environment and Climate Change Partnership



The adaptation, residential and low carbon economy strategy groups have been established especially to deliver the aims of this strategy and the climate change adaptation strategy. The strategic transport board and south London waste partnership and district energy Programme board are pre-existing groups that will feed into the partnership.

This action plan will be monitored by the ECCP business planning group on an approximately 6 weekly basis and updated and reported annually to the Croydon LSP and other regional and national bodies.

5.2. Key Long-term Objectives

- The ECCP's objective is to meet the interim carbon reduction targets set out within this action plan with the goal to meet the long-term target of 34% by 2025. This will be done through a number of actions promoting sustainable transport and the installation of retrofit and easy measures in domestic housing for home energy efficiency. We will seek to maximise the number of schools, businesses, faith and community groups reducing energy consumption, minimising waste and developing travel plans to reduce their carbon footprint.
- The carbon reduction targets have been worked out based on the potential for CO_2 reduction and the council's requirements to contribute to national CO_2 reduction targets. The 34% reduction target for 2020 as defined in the Carbon Budget Order (2009) and the Mayor of London's 60% target for 2025 have been recognised. We have taken into account national contributions to these targets from the potential decarbonisation of the national grid.

Interim CO_2 reduction targets

Target date	% CO_2 reduction targets	Annual CO_2 reduction ($KtCO_2$)	Total annual CO_2 emission target ($KtCO_2$)
2015	15%	257.6	1459.5
2020	20%	343.4	1373.6
2025	34%	583.8	1133.2

- Through focused marketing strategies behavioural change across the borough will contribute considerably to CO_2 reduction.
- The objective is to ensure development and regeneration activity within the borough supports the achievement of our priorities and LAA targets, for example by requiring low carbon developments.
- Our targets are ambitious but the benefits are many. Action will not only ensure carbon reduction targets are met and the catastrophic effects of projected climate change are avoided, but will improve the quality of the built and natural environment in the borough improving health, wellbeing and prosperity for all residents. Long term carbon reduction will ensure sustained economic development in the borough.

6

Behavioural change

'Sustainability is not just about development. Residents and businesses will also be inspired to take greater pride in their environment and to take responsibility for their environmental impact.' ('We are Croydon, this is our vision' 2010).

Behaviour change, which requires no capital investment, has the potential to contribute up to 20% of our CO_2 savings required to meet the targets set out in this action plan. The opportunities attached to behaviour change include economic growth, cheaper energy costs and a cleaner, healthier environment to live in that is sustained for future generations. Addressing behaviour change can help the borough address problems of fuel poverty and energy supply.

It is important that the public are not misinformed about the degree of climate change and its potential impacts. Seasonal fluctuations in the climate's natural behavioural patterns can mask the long-term climate changes. For example the winter of 2009/2010 was characterised by temperatures below average, and extensive snow and ice cover across the UK, which would not appear to the general public to be characteristic of a warming climate. There is scientific consensus that all but 2 of the last 10 years have been characterised by the highest average temperatures ever recorded.

It is these short term fluctuations that may confuse people's understanding of the long-term global warming trend, a reason why it is important to address behavioural change within this mitigation action plan as it is essential whole communities understand the risks of climate change, but most importantly the opportunities involved in mitigation.

6.1. What are our aims?

The work of the ECCP in Croydon provides opportunity for considerable outreach to many partner agencies including organisations responsible for communicating environmental issues, for example energy efficiency campaigns carried out by energy companies

The ECCP's overarching communications aim is to achieve behavioural changes in Croydon, through:

- the identification of specific climate change impacts on the borough and related energy security issues
- demonstrating the benefits of early action, to minimise the impact of future climate change and the additional economic costs this would incur. Incentivising home retrofit and behavioural change, which will not only limit the economic cost of climate change in the future but also save money now, through energy bill savings, transport costs and material consumption
- providing residents with information and advice as well as signposting residents and local businesses to appropriate sources for information on energy efficiency, water savings and recycling.
- providing information and advice for residents in travel choices with minimal carbon footprint.
- ensuring the wider benefits of living a sustainable lifestyle in terms of health and wellbeing are understood.

Through coordinated communication strategies across the ECCP agencies, the ECCP can deliver a powerful message that by working together we are effective in tackling climate change. The more people know about what Croydon is doing as a borough to reduce carbon emissions to tackle climate change and the results that are being achieved, the more confidence they will have in the value of playing their own part.

The audiences the ECCP seeks to target are very diverse, as listed below. It is important to recognise this diversity and that the motivations for taking action are likely to be different for different population groups. Some groups may be harder to reach than others and so will need more of a focus as part of this action plan, for example young people and BME communities.

- Croydon residents
- young people
- faith communities
- local environmental groups
- business community
- BME communities
- potential visitors, particularly from surrounding boroughs
- ECCP agencies and their staff, including internal council staff members.
- local voluntary organisations.

The ECCP will work closely with other communications representatives within the council and other agencies to co-ordinate communications channels, working with energy companies that are also promoting energy efficiency in the borough and media outlets.

6.2. Where we are now

The partnership between Croydon Council and Creative Environment Networks (CEN) has a strong track record in dealing with a range of home improvement and insulation schemes for residents receiving benefits and able–to-pay groups. CEN also provides sustainable design and construction advice to developers and delivers the regional Energy Saving Trust Advice Centre on behalf of the Energy Saving Trust. The council also provides advice to residents within council owned properties.

Croydon Council has established a good relationship with British Gas, specifically introducing the British Gas Home Insulation Scheme in March 2006 through which residents were initially offered a £50 discount on their council tax if they insulated their homes, however, this was updated in 2007 to increase the discount to £100, as recommended by British Gas to encourage greater uptake of the offer. The success of the British Gas scheme in 2006 and 2007 is evident in Table 2. Effective marketing and communication strategies will determine the success of this and other schemes in the future. British Gas has stated that this scheme was one of its most successful of its type in the country. This programme will provide an important learning experience as the Council continues to develop domestic insulation schemes with its partners.

Table 2, Number of installations through the British Gas Home Insulation Scheme

	Cavity Wall 1 Unit = 0.21 Tonnes Carbon Savings PA				Loft 1 Unit = 0.33 Tonnes Carbon Savings PA				Top-Up Loft 1 Unit = 0.08 Tonnes Carbon Savings PA			
	2006 /07	2007 /08	2008 /09	2009 /10	2006 /07	2007 /08	2008 /09	2009 /10	2006 /07	2007 /08	2008 /09	2009 /10
British Gas	316	293	5	54	37	96	0	29	107	398	10	69

The marketing programme for the scheme paid close attention to diversity within the borough so that although the overall branding would be consistent, the message within promotional leaflets would differ for different groups. For example, it was recommended information on free insulation for people on benefits (i.e. support from other funding schemes) was provided to low income families,. Several challenges and lessons were learnt from the scheme. Firstly it was identified that a very low number of higher income groups took part, despite the fact that many of the residents in this group live in homes most need of insulation in the borough.

The other key area for behavioural change communications to be focused upon is a modal shift in transport use. Considerable promotional activity has taken place to incentivise cycling through cycling road safety workshops. A modal shift in transport use has also been marketed through the council's work with school travel plans and the W.O.W (Walk Once a Week) campaign.

Over recent years Croydon Council has invested significantly in developing its recycling service in order to improve its recycling performance and to minimize the environmental impact of Croydon's waste. In order to continue to improve participation in the service there has been a sizeable piece of engagement work carried out with over 10,000 residents over the last 18 months to understand the reasons why residents are not recycling and to remove any barriers to recycling. As a result of this over 7,000 additional boxes have been delivered to residents to allow them to use the kerbside recycling service. This type of engagement work is to continue during 2010/11.

Following on from the recommendation made at the ECCP Executive board meeting in May 2010, communications and marketing will constitute a major part of the ECCP strategic work. The following are all existing channels that can be used to target audiences. By using a communications plan, we can ensure that for major issues we communicate consistent messages across all channels to reach our audiences:

- local media
- London and national print and broadcast media
- Your Croydon
- existing newsletters
- advertising and poster campaigns
- direct email
- events
- websites
- E-Bulletin
- social media and other peer to peer marketing tools
- internal and external notice boards
- The Loop (Croydon Council staff magazine)
- BME media
- tapping into existing communication channels (such as council tax mailings etc)

6.3. Actions

The Communications and Marketing Action Plan differs slightly from other Strategy Group action plans within this document. It is the responsibility of the ECCP Board to ensure the strategic work documented in this action plan is coordinated effectively across the whole partnership. The coordination of different marketing schemes and door to door visits across the borough will ensure that marketing and communication to residents is carried out as effectively as possible.

This action plan table identifies key actions, deadlines for completion, the target audience and key outcomes expected from each marketing/ communication objective. Some actions will correspond directly to strategic work being carried out by particular strategy groups. Where this is the case the letter heading for the action will correspond with that of the related strategy group, for example T for Transport or R for the Residential Strategy group.

Objective: behavioural change: communications and marketing

Aims:

- to develop a communications strategy through which the ECCP Board will coordinate marketing across residential housing, waste, transport and sustainable business practices
- encourage behavioural change which will contribute to borough wide carbon emission reduction targets, through the promotion of sustainable transport, energy efficiency in the home and work place and household and commercial waste management
- the promotion of the added benefits of behavioural change in addition to carbon reduction such as savings made on energy bills and health

Action	Deadline	Audience	Outcomes
B1. Communications Plan	March 2012	All	To develop a detailed communications plan in coordination with other actions within this plan. This will allow for communications strategies to be coordinated across strategy groups.
			To improve the standards of private housing, encouraging installations of insulation as well as renewable technologies for the home. The communications strategy should also target the private rented sector in order to reduce the split incentives between landlords and tenants. Engage with the voluntary sector and community leaders to provide guidance to other and help promote home retrofit schemes in their neighbourhood.
R. Ensure workers carrying out home visits in the borough are aware of fuel poverty and energy efficiency issues and can provide residents with relevant information.	March 2012	Fuel poor elderly and those seeking benefits in low energy efficient homes (<60)	Awareness training is to be carried out for all home visit workers in social services, NHS and housing associations by 2012. To increase the number of referrals of fuel poor residents who are eligible for grant funding to insulate their homes.
R. Monitor the number of residents within the borough enquiring about energy efficiency in the home using the Energy Saving Trust (EST) database	Ongoing		This is a good indicator for behavioural change in the borough and uptake of any residential energy efficiency marketing campaigns that may be implemented.

Action	Deadline	Audience	Outcomes
W. Undertake kerbside waste awareness interviews in 8 target wards	March 2011	Local residents in 8 wards under achieving with regards to recycling rates.	This will encourage an increase in recycling rates and help contribute to the 40% recycling target set for 2011.
W. Undertake 10 waste and recycling road shows	March 2011	To target areas under achieving with regards to recycling rates	This will encourage an increase in recycling rate and help contribute to the 40% recycling target set for 2011.
T5. Implement smarter travel & travel demand management programme through the promotion of workplace and school travel plans.	Annual Review	Schools and local business	This will encourage a modal shift away from car use for work and school journeys, encouraging the review of travel plans through a series of workshops and the submission of quarterly reports.
T4. Increase the number of free cycle training sessions.	March 2011	Schools, Croydon adult residents and adults who work in the borough	The free training courses offered to schools and the ½ sessions offered to borough residents and work force will encourage a modal shift away from car use for trips to school and work. These free training sessions are funded by the council and outsourced to **cycleinstructor.com**. Demand is always greater than supply.
LCE. Develop the sustainable schools programme to promote activity surrounding waste and energy management through educational practices, and links to the council	March 2011	Schools	Wide community engagement for the reduction of energy consumption and sustainable waste practices, promoting recycling, 'growing your own' and sustainable transport mode choices.

7

Transport: smarter travel

7.1. What are our aims?

This action plan sets out the strategic work planned locally which will make a significant contribution to meeting the Mayor of London's 60% CO_2 reduction target and aim to create an exemplar transport system in London.

The mayor of London's draft Climate Change Mitigation and Energy Strategy sets out the following aims which will guide the actions presented in this action plan:

'By 2025 London's transport system will excel amongst global cities with low carbon infrastructure and access to ever more low carbon transport options' (Delivering London's Energy Future, 2010)

This will be achieved through the following policies to:

- encourage a modal shift towards more sustainable modes of transport, discouraging private car use
- ensure public transport systems are operated efficiently, improving driving techniques and raising awareness of fuel efficient driving styles
- promote the use of low carbon vehicles, technology and fuel

These key policies are already being delivered London wide through programmes such as the cycle live schemes in central London and the development of the new cycle highways. Work has also been focused on encouraging route planning for trips that can be walked easily and to encourage the uptake of less polluting vehicles. This includes the introduction of hybrid bus fleets by 2012 and work that is underway to encourage pricing differentials based on vehicle emissions for parking permits in London.

The following action plan sets out key activity to support these policies and promote a shift towards less polluting forms of travel. Actions will be guided by the principle of meeting the borough's overall carbon reduction targets of 34% by 2025 based on a 2005 baseline. This will ensure that this action plan is aligned with the Borough Transport Strategy and the targets set within it for a 34% reduction by 2022 based on a 1990 baseline, and aligned with the DfT Strategy to 2022 and the 2008 Carbon Budget. It will also ensure that a sufficient contribution is made to the Mayor of London's target for a 60% London wide CO_2 emission reduction by 2025.

Croydon Road Transport CO_2 reduction ($KtCO_2$) based on a 2005 baseline (DECC NI 186 data)

Target date	% CO_2 reduction targets	Annual CO_2 reduction from the 2005 baseline ($Kt/CO_2/yr$)
2015	15%	257.55
2020	20%	343.4
2025	34%	583.78

The key aim for transport in Croydon as defined in the draft Borough Transport Strategy is to provide a network able to cope with increased travel demand and from which the following aspirations are stated : smoothing traffic flow along the A23 corridor, expansion of the tram network; provide better links to Heathrow and Crossrail; improve orbital links across the borough; and reduce the environmental impact of transport making it easier for people to walk or cycle to their places of work, education or leisure, reducing congestion in the process.

As defined in the Mayor of London's draft Climate Change Mitigation and Energy Strategy in order to achieve the aims listed above there are a number of challenges that will need to be confronted. These have been addressed in this action plan as it is hoped that they will be overcome in Croydon in order to pave the way for a sustainable transport system.

- the high number of trips that are being made by people using high emitting forms of transport (66% of emissions in Croydon are from car use, see pie charts in the next section). Work needs to be done to promote cycling and walking in the borough through Work Place Travel Planning (WTP) and School Travel Plans (STP)
- the level of freight movement using high emitting forms of transport. Work needs to be done to rationalise freight movements through the implementation of Delivery Services Plans (DSP) and Construction Logistic Plans (CLP)
- the rate of uptake of low carbon and fuel efficient vehicles and barriers to this, including the cost, available infrastructure and public awareness

7.2. Where we are now

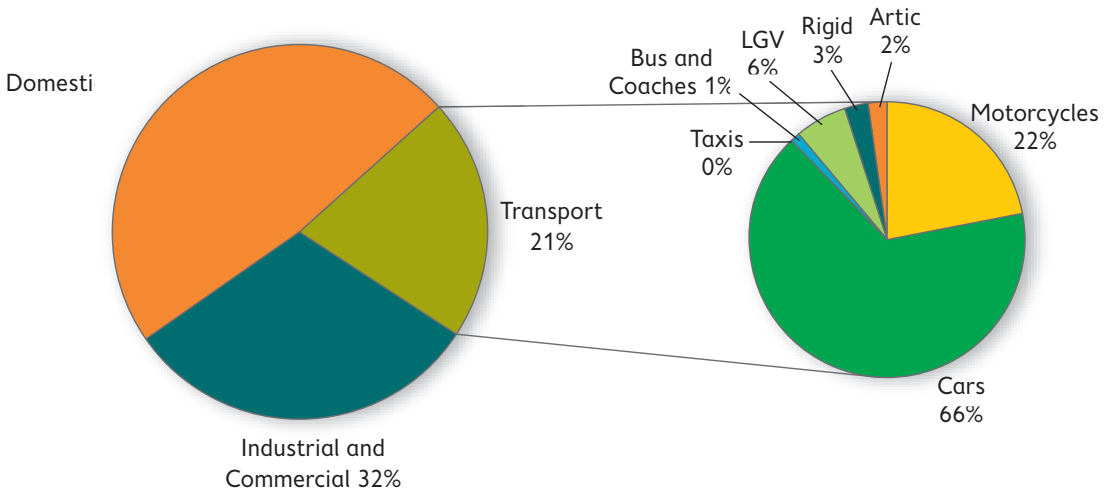
There has been a dramatic growth in road traffic in the UK over the last few years as a result of changes and growth in population, retail, leisure and commercial activities. Nowhere have the effects of these been felt more heavily than in London and the South East. The most significant components of traffic growth have been the use of the car and increased levels of freight on the roads. Lifestyles and travel patterns have generally become increasingly car dependent. Inner London is characterised by higher public transport use than the rest of the country. However, outer London boroughs such as Croydon are characterised by similar transport flow patterns to the rest of the UK with high levels of private car use.

Initially, greater mobility undoubtedly offered improved access, convenience and freedom of choice for all of those with access to a car. Unfortunately, in recent years, traffic demands have been growing faster than our ability to deal with the problems they create and the government's forecasts suggest that traffic will continue to grow. There is a growing recognition that the greater freedom offered by the car has not been without its costs. The consequences can be seen in increasing congestion in many parts of the borough, deterioration in environmental quality due to pollution, disturbance, severance and noise and disadvantages to the local economy because of delays caused by congestion.

Despite this, the borough has excellent public transport links. East Croydon is one of the busiest stations in the UK with fast and frequent rail services to London, Gatwick and the South Coast. The completion of the Croydon Tramlink in 2000 brought a sustainable transport system that regularly carries more than 70,000 passengers per day and also links parts of the borough and south London previously ill-served by public transport. The Tramlink reduces road congestion and incentivises public transport use. Extensions to the London Overground which opened in the summer of 2010 has put Croydon on the Underground map and has improved connections to Canada Water and cross river links to Shoreditch and Dalston.

One of the key challenges is behavioural change; encouraging local people to increase their travel decisions beyond single occupancy car use. Currently only 74 local businesses have published travel plans. Linked to this is the need to secure sufficient investment to maintain and grow good public transport services and synchronise investment in transport to maximise development opportunities.

Proportional split of CO_2 emissions from transport modes in Croydon (LAEI 2006)



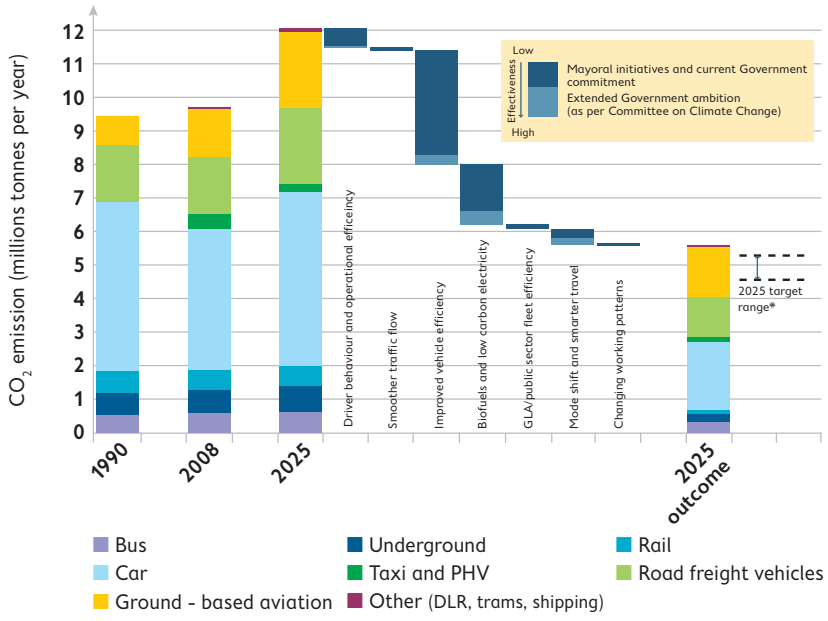
The pie charts above show how up to 65% of CO_2 emissions in the borough are from car use, therefore work to encourage a modal shift towards lower carbon modes of transport is a key aim of this action plan. This can only be achieved by increasing the relative attractiveness of these more sustainable modes by providing more pleasant, reliable and sometimes faster journeys, making the most of travel demand management policies, improving the quality of urban design and environment, and taking steps to ensure that the cost of each transport mode reflects its true cost in terms of carbon emissions. A key issue will be increasing capacity of train and Tramlink services, especially those at East and West Croydon stations; network wide improvements to improve the safety and accessibility of stations and stops will make these services more attractive to use.

As defined in the Mayor of London's Climate Change Mitigation and Energy Strategy CO_2 emissions from transport are defined as those associated with the combustion of fuel for transport purposes, those associated with electricity used to power transport including the tube, DLR, rail and street lighting. It also includes emissions associated with the taxiing, taking off and landing of aeroplanes at airports within London's boundaries.

As a result of existing legislation, such as EU policy on emission quality from vehicle engines and engine design, as well as the Mayor of London's current commitments, it is projected that CO_2 emissions from transport will fall by up to 20%. In addition to this the UK Low Carbon Transition Plan , which sets out a number of policies to be delivered in order to reduce transport emissions, sets targets for the average emissions from new cars as well as planning for rail electrification. In total these drivers could lead to a carbon reduction of 34.8% by 2025. This is a significant contribution, however it is also evidence that further action is required if the 60% reduction by 2025 is to be achieved (Delivering London's Energy Futures, 2010). This evidence supports the target set for Croydon which will make the contribution that is required in addition to the existing policies documented above and London wide TfL initiatives.

The graph below, taken from the Mayor of London's draft Climate Change Mitigation and Energy Strategy displays the relative contributions required by the transport sector to meet the Mayor of London's 60% CO_2 emission target for 2025. This demonstrates clearly the policy areas that are being addressed to achieve this CO_2 reduction and thus what will drive many of the initiatives in this action plan.

The relative contributions to be made from the transport sector in order to meet the mayor of London's CO_2 reduction target (Delivering London's Energy Futures, 2010).



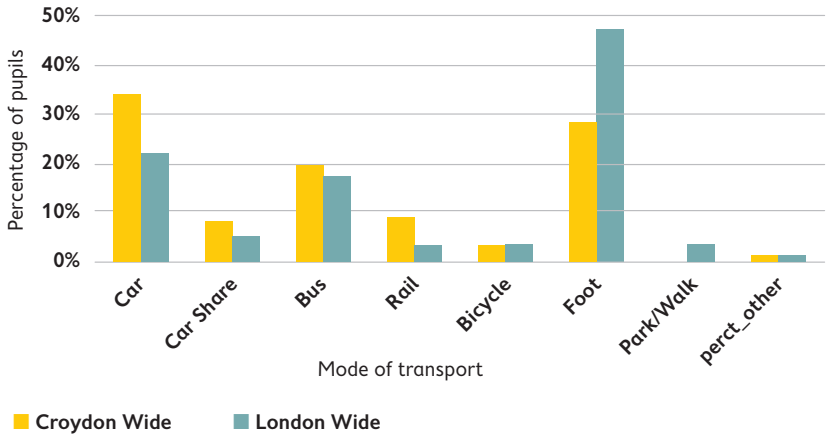
7.2.1. Carbon efficient travel behaviour

A number of proposals have been made by the Mayor of London which make a significant contribution to local CO_2 reduction in the borough. For example, the mayor through working with TfL and London boroughs, road freight operators and other stakeholders will adopt planning conditions that specify delivery service plans for major developments by spring 2011. The aim is to encourage and where possible specify freight movement. The Mayor's commitment to encouraging the switch to low carbon vehicles and his support of electric vehicle charging points will make a large contribution to CO_2 reduction.

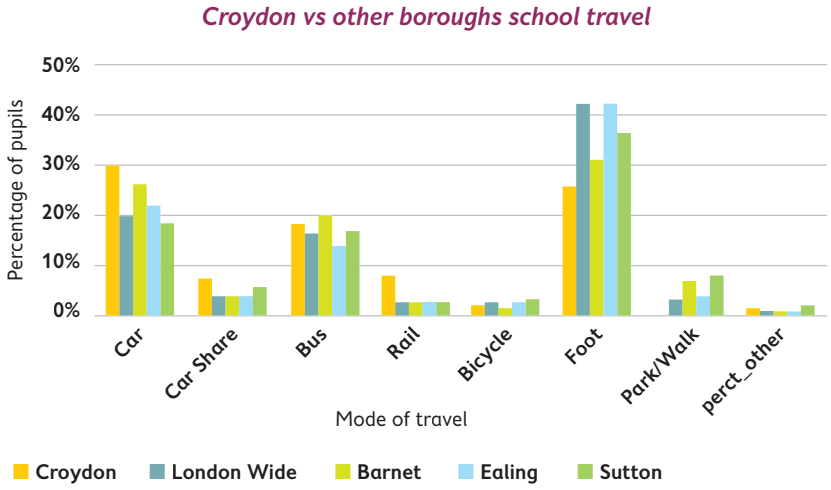
Travel planning will be used in Croydon to influence behaviour and encourage a modal shift from private car use to more efficient and sustainable forms of transport. Significant investment in the rail, tram and bus networks will be required to ensure these services remain an attractive alternative to the car and are able to accommodate additional travel demands. The decision to change journey habits will depend on a number of personal local and global factors and it is important that the ECCP identifies those factors which are most likely to change travel behaviours within the borough. The uptake of work place and school travel plans across the borough should promote walking, cycling and public transport use, with personalised travel planning initiatives targeting specific communities. This should be complimented with initiatives to deter car use within sensitive areas through the restriction of car parking.

A modal shift in transport use has already been seen from work carried out through school travel planning which the council coordinates. This has proven successful in encouraging walking to school rather than the use of private cars. However, it is clear that car use in Croydon for the school journeys is still above the London average and in comparison to similar boroughs. Therefore there appears to be scope for further modal shift in transport use for school and work journeys within the borough. The focus now must be in particular on encouraging cycling across the borough.

Croydon vs London wide school travel



Modal split in transport use from school travel plan data in comparison to the London average (TFL, School Travel Team, Feb 2010)



Modal split in transport use from school travel plan data (2009 census) in comparison to similar London boroughs (TFL, School Travel Team, Feb 2010)

The recently drafted Borough Transport Strategy has been developed in line with emerging borough policies and strategies, in particular Croydon Council's Core Strategy, as part of the Local Development Framework. The objective of the Transport Strategy is to look at how opportunities for the enhancement of Croydon's current transport infrastructure and services can be maximised to their full potential.

There are a number of challenges in determining the degree of modal shift that we can expect, and the choice of transport that will be favourable in the future will be dependant on the investment that is made in related infrastructure. This is now discussed in the following sections broken down by mode. It is important to determine the investment that will be made in infrastructure developments for each mode in order to determine how we are to reach the national 34% CO_2 reduction target by 2022, based on a 1990 baseline. This will involve work to collaborate data on transport behaviour across the borough in addition to planned infrastructure developments. This action plan takes the first step towards embedding CO_2 reduction into new transport infrastructure design schemes and developments. It is recommended that this work is continued as part of the Borough Transport Strategy as well as other significant strategy documents such as the Biking Borough Strategy.

7.2.1.1 Cycling

The Mayor of London has set targets to increase the mode share of cycling as part of the London transport system, aiming for cycling's mode share to increase from 2% to 5% by 2026. This equates to a 400% increase compared to 2000 (Delivering London's Energy Future, 2010).

The Biking Borough Strategy states that while Croydon has one of the highest levels of car use in London it also has the highest number of potentially cyclable routes and thus a great potential for modal shift and opportunity to meet the Mayor of London's target. The Borough Transport Strategy and the Biking Borough Strategy include an assessment of common issues discouraging cycling within the borough suggesting the following improvements be made in Croydon:

- safe traffic routes to parks and open spaces to encourage uptake of cycling as a leisure activity
- cycle highways that provide continuous sections of cycle lane with direct connections between CMC and from surrounding areas
- a network of maintenance and repair shops which are convenient to access
- secure and sheltered cycle parking (cycle hubs) at East and West Croydon stations with integrated maintenance and repair service facilities
- secure and sheltered cycle parking at other key locations within the CMC and across the borough such as Mayday University hospital, Selhurst Park, Croydon College, local retail centres and parks
- a cycle hire scheme focussed on the leisure market to give people the opportunity to 'taste' cycling and provide a safe environment to ride without the financial and storage troubles of cycle ownership
- training schemes to provide children with good road skills and for adult courses to improve road confidence and cycle maintenance skills.
- greater numbers of children cycling to school
- resolve the difficulties associated with topography in certain parts of the borough by allowing cycles on trams during inter and off peak periods

Unless work is done to overcome the common reasons why people are discouraged from cycling, such as safety, provision of safe routes across the borough and parking facilities, a significant modal shift away from private car use in the borough will not be possible. In Croydon this is likely to require significant investment in infrastructure such as cycle lanes and safe routes along regular commuter pathways within the borough.

Using data from the Biking Borough Strategy the potential for CO_2 reduction through the provision of safer cycle routes has been identified. The strategy documents the number of potentially cyclable routes. These are defined as journeys travelled under 8km during daylight hours, excluding those taken by the elderly, disabled and with very young children. Assuming that 60% of these potential routes are cycled rather than driven, if the appropriate infrastructure is put in place, the following CO_2 reductions will be made.

Potential CO_2 reduction from modal shift from private car use to cycling (Croydon Biking Borough Strategy2010)

	Potentially cyclable routes <2km	Potentially cyclable routes 2-5km	Potentially cyclable routes 5-8km	Total CO_2 reduction (Kt/ CO_2/yr)
	84,648.00	85,918.00	40,163.00	
60% of routes	50,788.00	51,550.80	24,097.80	
CO_2 reduction	10,538.51	37,438.77	32,501.91	**29.96**

This analysis does not take into account the natural barriers to cycling such as topography and one can not assume that all trips will be cycled which is why there is only a 60% sample. It does however demonstrate that work to improve cycle routes will go a long way in helping the borough meet the 34% target. As a result of this cycling would equate to a 15% modal share rather than the current 1.13% modal share.

There is a particular lack of quiet cycle routes that link open green spaces in Croydon. In addition there is a distinct lack of high quality cycle parking facilities particularly within the CMC (near the East and West Croydon stations), but also at other key destinations such as local centres (e.g. Purley), hospitals, schools and colleges, tram stops, parks and football grounds.

7.2.1.2 Walking

Walking is the least understood mode of transport in the borough, in terms of numbers, routes and purpose. A review of the existing pedestrian network within the CMC revealed the following concerns with current arrangements.

- congested footways, combined with multistage crossing
- poor crossing facilities
- there are a large proportion of walkways that are only suitable to use during the day
- there is a lack of pedestrian way finding information.

The main recommendations from the Borough Transport Strategy are to improve the connectivity of walkways, lighting, footway width, quality of paving, access for the disabled, public spaces along walkway routes and convenience. All these factors will encourage behavioural change. Work place and school travel plans will also contribute to this, providing route planners while encouraging residents to realise the environmental and personal health benefits of walking a short journey rather than travelling by car.

7.2.2 Use of low carbon vehicles

7.2.2.1 Electric vehicles and electric vehicle charging points

The Croydon Borough Transport Strategy focuses on actions to achieve a 34% reduction on 1990 emissions levels. The government has announced that reducing greenhouse gas emissions is one of five goals for future transport policy and infrastructure investment decisions, and consideration will need to be given to how to reduce the significant carbon load embedded within infrastructure when designing new schemes. Over the longer term the government believes that the route to a low carbon future for transport is the uptake of electric vehicles powered by a de-carbonised electricity generation system. Croydon are installing 10 electric vehicle charging points this year (2010), thus providing the infrastructure to support more electric vehicles in the borough.

The Mayor of London's Electric Vehicle Infrastructure Strategy outlines the many factors that will affect the number of Electric Vehicle Charging Points (EVCPs) across London and thus the uptake of electric vehicles. One of the most important factors that will either challenge or incentivise the uptake of this technology is the capacity for electric vehicle charging from the national grid. It is likely that with an increase in the uptake of electric vehicles utilities will start to subsidise the installation of smart metering in homes to protect the local electricity distribution. The concern is that the national grid will be overloaded during peak times of the day and to ease the strain on the local distribution network charging off peak hours should be encouraged.

The uptake of this technology is also reliant on the provision of parking spaces for charging. The London Plan is currently under consultation and is scheduled to be implemented in 2011. A proposal has been put into the plan for 20% of parking bays in new developments to be equipped with charging infrastructure which would incentivise use considerably.

A key aim of the Mayor of London's Electric Vehicle Infrastructure Strategy is to support local businesses for the installation of EVCPs. The engagement with businesses will accelerate over the next few years as electric vehicle technology develops and becomes more available. This initiative will be aimed at businesses with high levels of commuters travelling in by car so as not to de-incentivise public transport use. This emphasised the requirement for work place travel plans which will help to identify those businesses where private care use is prominent and where a modal shift to cycling, walking or public transport use is challenging.

Electric vehicles are ideal for use in car clubs as the usage patterns are very similar. The Mayor of London's Electric Vehicle Infrastructure Strategy states that Transport for London are to work with a number of car clubs in order to identify viable options.

The CO_2 reduction we will expect from the use of electric vehicles is therefore dependent on a considerable number of external factors, including the decarbonisation of the national grid and the capacity requirements. Current electric vehicles are considered to be 30 to 40% less carbon intensive that the average car based on the current energy mix in the UK.

7.2.2.2. Car Clubs

In Croydon there are currently 6 vehicles in operation, 3 of which are on council properties for use by employees during working hours, and out of working hours these cars are available for use by the public. Car club membership in Croydon has increased by 700% since 2007 and for the whole of London the average rate of membership increase in 5% a year. This demonstrates the demand for this service and if the council work closely with car club providers to increase the number of spaces for pool cars there is great potential in Croydon.

Car plus conduct annual surveys and through this they have equated that a Streetcar member will drive 68% less miles a year than if they owned their own car. Additional CO_2 savings are made as the engine efficiency of cars used by a car club are 33% more efficient than the average car driven by an individual prior to becoming a member. Car plus have estimated that 1 car club vehicle will take 20 cars off the road and prevent 11 cars that would otherwise have been bought by members.

The potential CO_2 savings from the expansion of Streetcars across Croydon have been calculated based on the assumptions made above, using a target of a 400% increase in car club membership by 2025. The results are shown below.

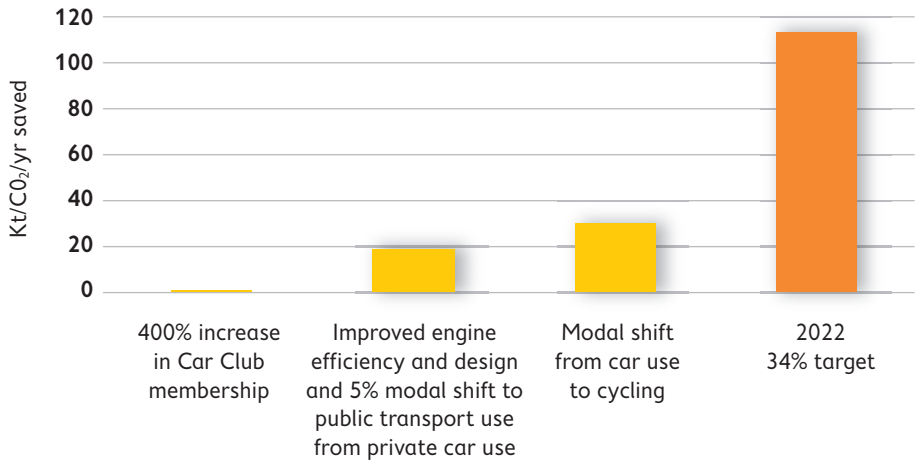
CO_2 savings from a 400% increase in car club membership (Car Plus 2010 survey)

	No. members	Average annual mileage for all members (km)	Previous mileage before becoming a member (km)	Kt/CO_2/yr
2015 (150%)	1345.50	747,053.46	2,334,542.07	**0.38**
2020 (250%)	2242.50	1,245,089.10	3,890,903.45	**0.64**
2025 (400%)	3588	1,992,142.56	6,225,445.51	**1.02**

7.2.3 CO_2 emission reduction

Considering the CO_2 reduction from a 400% increase in car club membership, a modal shift of 5% to public transport from private car use and that from improved engine efficiency for buses, LGVs and articulated lorries the below graph demonstrates the relative contribution this will make to meeting the 34% reduction target set out in the Borough Transport Strategy. This contribution when totalled comes to 50.05Kt/CO_2/yr out of 113.93Kt/CO_2/yr which is the 2025 reduction target.

Contributions to CO_2 reduction from road transport



Modal split in transport use from school travel plan data (2009 census) in comparison to similar London boroughs (TFL, School Travel Team, Feb 2010)

The graph does not include a contribution from an increased use of electric vehicles as the uncertainty related to their uptake produces a considerable range of possible outcomes.

7.3. Actions

Objective: Transport

Aims:

- reduce CO_2 emissions from transportation across Croydon from 350KtCO_2 (2005 baseline) to 231.07KtCO_2 by 2025
- support a modal shift to less polluting forms of transportation
- reduce congestion
- reducing the need to travel by considering appropriate land uses in areas of high accessibility

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
T1. Ensure that sustainable transport choices/preferences are promoted through the Local Development Framework (LDF).	March 2015	LBC - ST	• TfL • GLA	• Sustainable transport embedded within Croydon Transport Strategy • LDF, OAPF and Masterplans to include improvements to support sustainable public transport provision and accessibility. • Infrastructure plans to support increased walking and cycling, car club provision and roll out of EVCPs	• Modal shift away from single occupancy car use • Increase cycling rates • Increase the use of public transport • Increase the uptake of low carbon and electric vehicles	• Transport Strategy drafted • Masterplanning underway • OAPF discussions with Mayor
T2. Review Parking Strategy / Policy: • Parking Policy reflected in LDF with reduced parking provision for new developments • Link to TfL Strategy for 'smoothing traffic'				• LDF documents contain relevant information • Revised Parking Policy that takes account of capacity, cost, accessibility, to be included in CMC Transport Strategy • Facilitate increase in number of car clubs • CMC Transport Strategy to be completed (2010)	• 2015: 150% increase in car club membership, 0.38Kt/CO_2 /yr saving • 2020: 250% increase in car club membership. 0.64Kt/CO_2 /yr saving • 2025: 400% increase in car club membership, 1.020Kt/CO_2/yr saving • Assuming 1 car to every 50 new members this would require the provision of an additional 70 spaces across the borough for street car access.	• CMC Transport Strategy currently being developed • 3 pool cars set up for Council use during working hours and for public use outside of working hours. Bringing the number of street cars in Croydon to 6. • Since 2007 membership in the Borough has increased by over 700%.
T3. Support of low carbon vehicles:	March 2011	LBC SDS/ ST	• TfL • LSP • Local fleets • Energy Saving Trust • CEN • Contractors/ Business Fleets Envibe	• Install 10 EVCP Charging points, for council car parks by March 2011 • Identify other potential locations subject to funding. • Identify sites, local businesses, where there is potential for the installation of EVCP charging points	• Increase in number of electrical vehicle charging points to 10 by March 2011	• Sites designated and surveyed for the 10 EVCP installations

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
T4. Develop a Croydon Cycling Strategy and undertake measures to promote cycling including: - Adoption of 'Biking Borough' - Planning for more cycle parking, cycle lanes - Cycle training for schools				• New strategy in place by March 2011 • Identify 'cycle hubs' using an area based approach to determine areas of greatest potential for a shift to cycling • Establish programme for training courses on road safety and bike maintenance • Mayoral endorsement & funding support	• Modal shift away from single occupancy car use and increase in cycling • To increase the number of attendees of road safety and bike maintenance training courses by 200 a year.	• Cycle training programme set up through cycling instructor.com, for schools and adult residents and those who work in the borough
T5. Implement smarter travel & travel demand management programme • WTPs • STPs	Annual review	LBC -SDS/ ST	• Envibe • PCT • Sustrans • TfL • Pool & Car Club providers • EST • CEN • Croydon Cycle Network / local groups	• Envibe quarterly report on WTP activity • STPs quarterly report • Schools encouraged to review travel plans through a series of workshops and submit quarterly report • Develop targeted communications plan for different resident profiles to encourage less polluting modes of transport • Promote walking through Legible London approach • Provide 10 additional businesses per year with WTPs through Envibe offering DTT. • All Croydon schools to have a Travel Plan by 2011, to be updated by March 2015	• Modal shift away from single occupancy car use • 32 businesses with WTPs uploaded onto ITRACE by March 2011 • All schools with existing travel plans to conduct a review by March 2015	• 142 STPs approved • Promotional activity for smarter travel in schools: WOW • 22 WTPs approved by Envibe • Some promotional activity (such as bike week, European Mobility Week)
T6. Sustainable Freight & Fleet	March 2015	Freight Partner-ship	• ENVIBE • Sustrans • EST • CEN • LBC	• Develop mechanism for an area-wide DSP/CLP and traffic model for relevant Local, District or Metropolitan centres to permit modelling of a suitable variety of DSP groupings	• 100% of all major interchanges/junctions and HGV hotspots to be reviewed by 2015. This can be coordinated through the South London Freight Quality Partnership (SLFQP).	• South London Freight Quality Partnership in place • DSP scoping study for Croydon Council buildings conducted by Travel and Travel Research Ltd (TTR) in July 2008

8

Residential

8.1. What are our aims?

The aims of this strategy follows the aims set out in the Mayor of London's Climate Change Mitigation and Energy Strategy (2010); Delivering London's Energy Futures.

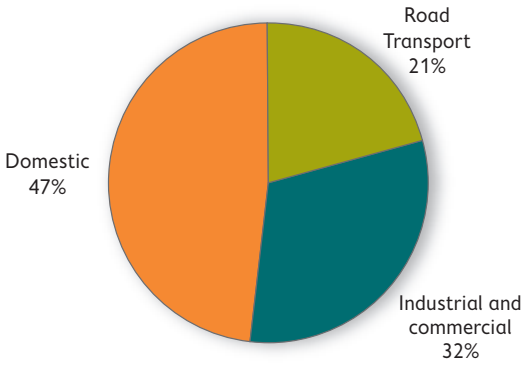
- by 2030, all of London's existing homes will be retrofitted with energy efficiency measures and the potential to generate energy; this will encourage Londoners to use energy more efficiently and will eradicate fuel poverty (Delivering London's Energy Future, 2010). This is one of the Mayor of London's key aims and will be delivered through programmes such as RE:NEW which will catalyse delivery and provide advice, easy to install energy efficiency measures, and loft and cavity wall insulation
- householders will have the opportunity for whole house retrofit which would include advanced measures such as solid wall insulation or heat pumps alongside smart meters and more basic measures by 2020
- people living in rented accommodation will enjoy higher levels of energy efficiency as private and social landlords take action to improve the fabric of properties
- there will be wider take up of district heating in urban areas, such as blocks of flats, in new build and social housing
- there will be a core of people employed in the new industry of energy efficiency, and potentially several times more down supply chains. Jobs will include installing and manufacturing energy saving measures or providing energy advice

This action plan sets out Croydon's aims in achieving these goals, incentivising home energy efficiency and retrofit. An intensive area-based approach will be adopted incorporating behavioural change and effective marketing which will constitute a major part of these objectives. By taking action now to mitigate climate change by reducing energy consumption in the home the cost of future climate change impacts will be reduced. Improving home energy efficiency standards provides opportunities for economic development, creating incentives for new businesses and employment within this sector as well as reducing energy costs for all members of the public who participate in the residential retrofit programme.

The area-based retrofit programme will target priority groups and areas of greatest potential for energy bill and CO_2 savings and achieving reductions in fuel poverty. The government defines a fuel poor household as one where more than 10% of net income is spent on fuel costs for satisfactory heating and other normal energy uses. A lack of sufficient insulation can tip a household into fuel poverty. The consequences of fuel poverty can be severe as the young and old are can become more vulnerable to serious health implications, including respiratory infections, bronchitis, asthma, heart attacks, strokes and hypothermia. Therefore an are-based scheme that targets fuel poverty as well as CO_2 reductions and energy bill savings will help to significantly lower the costs of related healthcare.

CO_2 emissions from residential housing across the borough is the dominant source of carbon dioxide emissions as demonstrated from the pie chart shown here which has been constructed using NI 186 data.

CO_2 emissions by sector (2007 NI186)



The table below displays the targets set for CO_2 emission reduction within the residential sector up until 2025. These are based on a 2005 baseline taken from the NI 186 data. The target in this case has been broken down into 4 interim targets allowing strategic work in Croydon to be broken down into phases of action and progress to be monitored. These targets represent the contribution that needs to come from local action and thus have been separated from the national contributions from CO_2 reduction. It must be remembered that historically the targets for the borough have been set including national contributions. However, it is easier to monitor our progress if separated. When this action plan is reviewed the level of national contribution will be examined against the local targets we set.

Domestic housing CO_2 reduction ($KtCO_2$) based on a 2005 baseline (DECC Ni 186 data)

Target date	% CO_2 reduction targets	Annual CO_2 reduction from the 2005 baseline ($Kt/CO_2/yr$)
2015	5%	38.43
2020	18%	118.49
2025	34%	262.18

The calculations for all targets have taken into account the contribution new build will make over the course of the next 15 years to CO_2 emissions, therefore additional carbon savings will need to be made from the old housing stock in order to counter the contribution from new build. This puts even more emphasis on improving the energy efficiency of new build design. Considered also are improvements in building standards and regulations. Although a target of a 9.5% reduction in CO_2 emissions had already been set for 2011, it is likely that this will not be met, therefore the reduction that has already been met for 2010 has been included in its place. It is through this strategy that the planned work required to reach the following interim targets has been equated in detail. Although the target for 2010 and 2015 is relatively low compared to what we are aiming at for the following years. This is based on the assumption that much of the planning and policy implementation will take place over the course of the next five years, putting in place a system through which full house retrofit programmes can be extended right across the borough.

As a borough we recognise the Mayor of London's 60% CO_2 reduction target and aim to ensure that the following actions are justified to make a significant contribution to this. To do this there are two factors that must be taken into account, firstly the contribution to local CO_2 reduction from the decarbonisation of the National Grid. This has been calculated assuming the following estimates for the renewable energy contribution as part of the future energy mix in the UK.

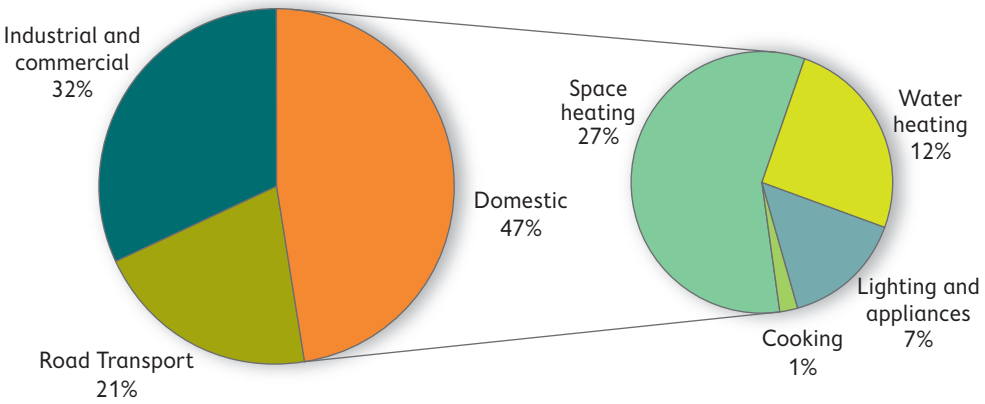
Table1: Proportion of Renewable sources of electricity in the UK energy mix (Low Carbon Transition Plan 2009)

Target date	Renewable contribution
2010	6.70%
2015	13%
2020	31%
2025	40%

It must be remembered that although the government Low Carbon Tranisiton Plan sets a target for 30% renewable electricity generation by 2020, this will be dependent on the development of renewable technologies. In addition, the impact that the development of carbon capture and storage technology will also have on CO_2 reductions cannot currently be calculated as this will depend to a large extent on the level of investment into research and development for these technologies.

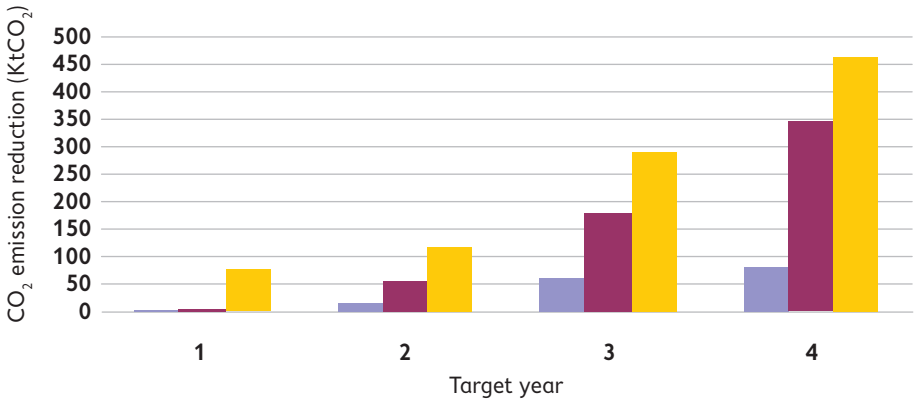
A number of assumptions have been made. Using NI 186 data for 2005 (the baseline used for targets) we have been able to estimate the consumption of electricity and its corresponding CO_2 emissions, assuming that 72% of carbon emissions in the domestic sector are from gas consumption and 28% from electricity consumption. This assumption is based on data from the Mayor of London's Energy Future Report published in 2010 which shows the split between types of energy use in the household.

Proportional distribution of CO_2 emissions by sector and the proportional distribution of energy consumption in domestic housing (DECC NI186 2007, Mayor of London 2010)



The carbon factor for grid electricity is 0.422 kgCO_2/kWhr. Using this information and government projections for the deployment of renewable technologies, we have calculated the contribution that the decarbonisation of the national grid will make to local carbon emission reductions The blue bar on the bar chart below represents this contribution, while the contribution require overall to meet the Mayor of London's 60% reduction target is shown in yellow.

The Mayor of London's CO_2 emission reuction target, national contribution to CO_2 reduction through the decarbonisation of the national grid and local contributions from area based retrofit programmes and full house retrofit



- CO_2 reduction fro the decarbonation of the national grid 20005 ($KtCO_2$).
- CO_2 reduction from the decarbonisation of the national grid plus contribution from the local area based retrofit programmes and full housing retrofit.
- Required CO_2 reduction in line with the Mayor of London's 60% target.

From this information it is possible to estimate the level of contribution that must come from local action through the insulation of roofs, cavity walls as well as full house retrofit programmes. A detailed break down of the contribution that must come from this is shown in the tables below, taking into account also what has been done since 2005.

We have estimated the contribution that implementation of an area-based pay as you save (PAYS) project to install a comprehensive set of measures in houses across the borough, including insulation, improved heating systems and controls, easy measures and renewable energy systems will make. These figures have been calculated assuming the average penetration rate recorded in RE:NEW demonstration projects which ranged from 1 in 4 to 1 in 3 households. We know that the total number of households in the borough is 144,931 and from this we have estimated a realistic figure for the number of full house retrofits that can be delivered by 2025. The table below shows these assumptions and the corresponding CO_2 savings. It is assumed that 7.5% of these measures will be installed by 2015, 50% by 2020 and 100% by 2025. It is clear that it is this work that will make the significant contribution to meeting a CO_2 reduction target of 34% by 2025.

Required contribution from full house retrofit by 2025 (data for CO_2 savings for each installation sourced from the Energy Saving Trust)

			CO_2 saving by target year (Kt/CO_2)		
Installation	**Number of installations**	**CO_2 saving (kg)**	**2015 (7.5%)**	**2020 (50%)**	**2025 (100%)**
Solid wall insulation	35,000	73,500,000	5.51	36.75	73.5
Draught proofing	40,000	5,200,000	0.39	2.60	5.20
Double glazing	20,000	14,400,000	1.08	7.20	14.40
Condensing boiler	20,000	7,500,000	0.56	3.75	7.50
Solar thermal	25,000	8,750,000	0.66	4.38	8.75
Solar PV	25,000	18,100,000	1.36	9.05	18.10
LED Lighting	10,000	3,650,000	0.27	1.83	3.65
Floor insulation	15,000	4,050,000	0.30	2.03	4.05
Easy measures	40,000	12,000,000	0.90	6.00	12.00
		Total	**11.04**	**73.58**	**147.15**

Carbon reduction targets and the corresponding contributing programme of work

Total carbon emissions reduction targets from 2005, including CO_2 contribution from new build		**Contribution**
1. 2010 (1%)	3.10 Kt/CO_2	Insulation and refurbishment of council properties, RE:NEW demonstration project, Utility company installations of cavity wall/loft and loft top up insulation. Not including RSL housing.
2. 2015 (5%)	38.43 Kt/CO_2	RE:NEW easy measures in 1,875 properties, PAYS/FIT, smart meters in 40% of households
3. 2020 (18%)	118.49 Kt/CO_2	PAYS/FIT, smart meters in 100% of households
4. 2025 (34%)	262.18 Kt/CO_2	PAYS/FIT

It is clear that although national and local CO_2 emission reductions will make a significant contribution to meeting the Mayor of London's 60% target by 2025, there is still some additional work to be done. This would equate to an additional 30,000 homes within the borough undergoing full house retrofit, in additional to those already planned for within this action plan.

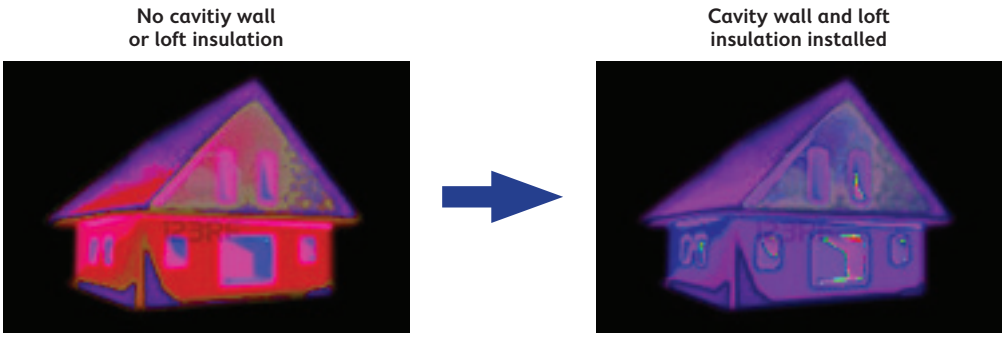
Keeping to the 34% reduction target by 2025 as a minimum requirement for action is therefore essential. It must also be remembered that there are a number of factors that will contribute to reaching the Mayor's 60% target, the impact of which cannot currently be estimated. These include:

- actions undertaken by RSLs
- implementation of a district heating network in the CMC
- decarbonisation of the gas network
- increasing the efficiency of domestic appliances
- rising energy prices acting as a disincentive to consumption

8.2. Potential measures for CO_2 and financial savings

The following images demonstrate the potential for financial and CO_2 savings as a result of the installation of cavity wall, loft and top up loft insulation and the potential for full house retrofit in an average 3 bed semi detached family home.

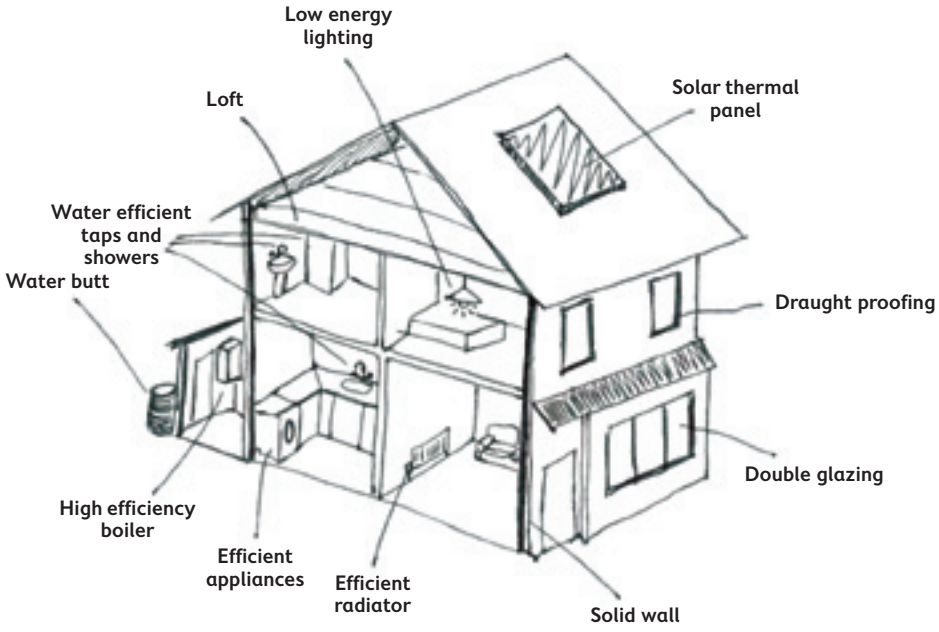
By 2015 all potential easy measures will be achieved!



2 easy measures for a 3 bed semi detatched:

Annual CO_2 emissions savings: 1410KgCO_2
Annual energy bill savings: **£265**

From 2015 to 2025 focus will be on full house retrofit!



Full house retrofit for a 3 bed semi detached:

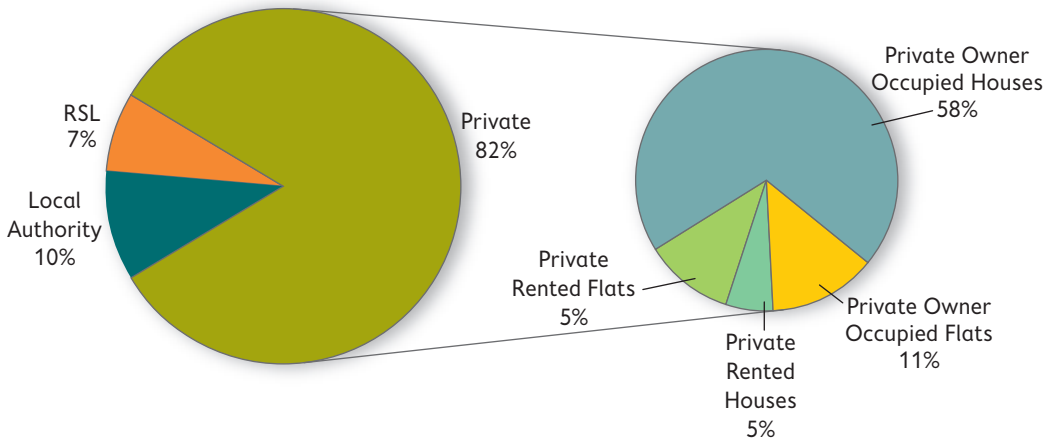
Annual CO_2 emissions savings: 5,085KgCO_2
Annual energy bill savings: **£1,096**

8.3. Where we are now

Total emissions savings from home insulation installations across the borough from 2005 have been calculated. This includes work carried out on private housing in the borough by all energy companies as well as works carried out by the council on its own housing. The easy measures include loft, top up loft and cavity wall insulation as well as the distribution of '10 easy measures' including energy saving light bulbs, hot water tank covers, tap aerators, radiator panel, stand by switches, visual display units, shower heads, save-a-flushes and chimney balloons. The total annual emissions savings achieved since 2005 amount to 6.13 $ktCO_2$/yr. With the addition of emissions from new build housing, the total saving amounts to 3.1 kt/CO_2. This equates to a carbon saving of 1% from the 2005 baseline and an approximate total annual financial saving from household energy bills of £1,452,277.50.

These figures demonstrate the potential in this sector for carbon savings. CEN (Creative Environmental Networks) has identified the number of potential installations of easy measures in each ward in the borough that can be achieved by 2015. This equates to a total of 48,701 measures, totalling an initial saving of 29.079 $ktCO_2$/yr. These installations alone would generate an annual saving from energy bills across the borough of £6,193,525.

Proportion of housing stock in Croydon 01.04.2010



Croydon's housing stock totals 144,931 properties, 101,000 of which are privately owned and occupied by the owner and 19,000 of which are private rented accommodation. This is a significant proportion of the entire housing stock in the borough. It is estimated that approximately 50% of properties with cavity walls lack cavity wall insulation. To date, 3,894 of privately owned properties have been insulated, which is included in the carbon reduction figure of 3.1 $KtCO_2$/yr documented above. This demonstrates the large proportion of private housing in the borough and the requirement to target this housing stock as a priority in an area-based retrofit programme.

On average 42% of CO_2 emissions from homes comes from electricity consumption and 58% is the result of consumption of non-electricity related energy. While energy use from homes in London has increased from 1990, as a result of population growth in the city, energy use per capita has decreased. Due to technological advances there is however an increase in the number of energy consuming goods within homes.

There are a number of programmes available to Croydon to aid the reduction in emissions from energy consumption from residential housing, these include CERT (Carbon Emissions

reduction target), CESP (Carbon Emissions Savings Programmes), Warm Front, Decent Homes and RE:NEW. These have been fed into the action plan where necessary.

Home energy efficiency has been on the agenda in Croydon for a number of years, particularly in tackling fuel poverty amongst elderly residents and those on low incomes, predominantly in the north of the borough. Poor insulation is also an issue in the affluent south of the borough as there is a large proportion of old housing stock with poor standards of insulation.

In order to carry out the number of installations required to meet challenging carbon reduction targets, engaging residents and encouraging them to take up energy efficiency measures and change behavioural patterns to save energy must be made a key priority. Extensive carbon savings can be made if residents are aware of environmental benefits but also of the financial benefits and improvements to their quality of life. A strong focus now on community engagement and marketing to raise awareness and encourage action will pave the way for a greater uptake of energy efficiency measures in the future as more extensive retrofit programmes are developed.

Schemes such as the council tax incentive for home insulation with British Gas have made a contribution to total CO_2 savings across the borough, but it is hoped that greater savings will be achieved with a more intensive area-based approach to install easy measures. The roll out of the RE:NEW programme in collaboration with the LDA and the GLA will help to initiate this work.

In the next year the Council will have aimed to target 6,000 properties using RE:NEW, aiming to lever in CERT funding. It is expected that 1,500 homes will receive a home visit, which will include the installation of the following measures:

Potential installations during home visits and the maximum CO_2 saving and energy bill savings (data for CO_2 savings for each installation sourced from the Energy Saving Trust)

Measure to be installed	Kg CO_2 savings /yr	Cost savings /yr (£)
Low Energy light-bulbs	6.75	2
Tap aerators	188.40	4
Radiator panels	0.61	4
Stand-by switches	12.60	30
Visual display units	72.68	25
Showerheads	260.23	25
Hot water tank insulation	193.83	45
Save a Flushes		9
Shower timer	14.79	7
Chimney Balloons	101.26	20
Total	**851.15**	**171**

The south east of the UK will over the next few years suffer more and more from water stress as a result of climate change and additional capacity requirements and this is reflected by the fact that the 10 easy measures include many that also encourage water efficiency in the home,. This will provide water savings as well as energy savings, making a contribution to climate change adaptation targets as well as reducing CO_2 emissions.

8.3.1 Challenges

The 2010 Annual Energy Statement has identified key barriers to the progress of the roll out of home insulation across the country, they are as follows:

- people are either unable or do not want to provide up front costs for installations as often the payback period is longer than they would wish to stay in their home
- there is a lack of recognition for the need to act and a lack of knowledge about energy consumption
- there is a general distrust in energy saving products and utility companies

How effective retrofit programmes are in London in particular is challenged by the fact that there are many 'hard to treat' homes. By definition these are homes which, for a variety of reasons, can not accommodate 'staple' energy efficiency measures which include cavity wall insulation and loft insulation (EST, 2010). There is a close link between 'hard to treat' homes and fuel poverty, including homes with solid walls, no loft space and no connection to a low cost fuel such as gas. The high proportion of old housing in London, much of which has been converted into flats, means that these housing characteristics are common. This is due to the fact that older buildings, built before 1930, have solid walls and so can not benefit from cavity wall insulation, they often have large chimneys which offer additional ventilation challenges and in many cases the properties contain double hung sash windows.

It is important that any retrofit programme address the challenges of improving the energy efficiency of these homes. In addition approximately 25% of the private residential housing stock is made up of flats which are much harder to treat individually when they are privately owned than houses because measures such as cavity wall insulation, cladding and windows must often be installed in all flats in one building at the same time.

Many properties in London do already have loft insulation and so are only eligible for loft top up; however the aggregate carbon savings from this can be quite substantial. It is difficult however to encourage people who already have loft insulation to install more and understand why it is necessary. This additional energy efficiency measure is also not eligible for CERT funding. Loft top up of 50 to 270 mm additional insulation will however make an additional 230 kg/CO_2/yr saving and a £100 saving from a household energy bill.

When carrying out area based retrofit programmes it is essential that certain demographic groups are not left out. However, a number of groups are very hard to reach. These include homes that are owner occupied by residents who are able to pay. Up to 69.9% of the housing stock in the borough is private owner occupied.

It is particularly difficult to engage with private landlords. As landlords are rarely responsible for paying the energy bills they do not receive any direct return from installations of energy efficiency measures. Historically, this has meant that they have felt unable to charge higher rent to recoup the cost, explaining why reaching this group has been difficult, even where fiscal incentives such as a Landlord Energy Savings Allowance have been offered. The results of the RE:NEW pilot also revealed that the private rented sector and landlords were the hardest to reach and that door-knocking was the most successful method of engaging this group. Door-to-door engagement makes it easier to get across that privately rented homes are eligible for easy measures to be installed and that savings from energy bills can be made immediately rather than over the long-term. Addressing the "split incentive" between landlords and tenants is of great importance considering that 13.3% of Croydon's properties are rented and 64.5% of these are flats which are often more difficult to access and install measures.

These challenges put more emphasis on the requirement for directed communications and marketing at particular groups when carrying out an area-based approach for home retrofit and insulation programmes.

8.3.2. RE:NEW and the Home Energy Efficiency Programme Demonstration

Croydon was one of 9 South West London Sub Region boroughs who took part in the demonstration trial for the Home Energy Efficiency programme (HEEP), now known as RE:NEW. RE:NEW is an area-based programme to target and provide energy efficiency advice, install simple energy saving measures, and refer to energy efficiency schemes for larger measures. CEN deliver sub-regional grant schemes in the south-west London sub-region and delivered the RE:NEW technical trial over the Summer of 2009. The last visit on the trial was completed by April 2010.

The area chosen for the demonstration programme for RE:NEW was in Thornton Heath in the north of the borough and consisted of 3,200 homes, all of which received marketing.

It has a relatively homogenous housing stock, consisting of predominantly 1930s terraced properties. The majority (80%) is owner occupied, with 12% privately rented and very little social housing. This split of tenure was chosen consciously, since social housing retrofit programmes have been relatively well capitalised in the past, while energy efficiency in private housing remains a key area of concern. The area is ethnically diverse with around 50% from a minority ethnic background. The trial area is in the lowest 15% of areas nationally in terms of the income score of the indices of multiple deprivation.

A 25% penetration rate was achieved, meaning that 832 properties received in-house advice and installations of '10 easy measures' to provide energy and water savings. Over 200 referrals were also made to energy companies during the programme for loft and cavity wall insulation, boiler upgrades, draught proofing and heating controls.

The results of the trial have provided a great deal of information that will be used to inform the wider roll-out of the RE:NEW programme which will run from 2010-2012.

Assuming that the RE:NEW programme achieves its target penetration rates and if all referrals generated are successfully followed up with an installations, a saving of 0.15 $ktCO_2$ would be made. It is intended that the project will be replicated and scaled up to deliver greater emissions reductions in other parts of the borough.

8.3.3 The Healthy Croydon Initiative

The RE:NEW programme has been set up to catalyse further area based retrofit programmes across the borough. The area based retrofit programme built into this action plan will support also the work that is being carried out as part of the Healthy Croydon Initiative pilot. The pilot is in Broad Green Ward and over the period 2010/2011 900 properties have been targeted for a door knocking survey to cover a range of issues related to the health of Croydon's residents in the home. The general condition of a property will be assessed in terms of disrepair, energy efficiency (including loft and cavity wall insulation), home security and safety and fire safety. The doorstep survey which gets completed aims to capture as much information as possible to assess if the residents would benefit from a local or council service. These services include referrals made to CEN for energy efficiency measures to be installed. The idea behind the Healthy Croydon Initiative is that NHS costs can be significantly reduced through the improvement of patients' homes.

This initiative is also aimed at encouraging landlords to pay for the installation of energy efficiency measures in their rented properties, as these will also be included in the survey. If a rented property is found to lack loft insulation or have a defective heating system for example the council will serve notice to the landlord to remedy this.

8.3.4 The Green Deal

The Government is tackling the barriers to investment in energy efficiency by launching the Green Deal and rolling out smart meters to all homes across the UK. This is one of the key actions within the 2010 Annual Energy Statement.

The aim of the Green Deal is for every participating householder to save money by insulating their home. Participating energy companies and high street stores will help guide customers through a simplified process and pay for the work upfront. Householders will then pay back the money over time on their energy bills, through the savings they make. A competitive market will provide best value and confidence in products for the customer. The Green Deal provides a way forward in combating the split incentives between landlords and tenants by linking payment for energy saving to the benefits though bills.

Providers of the Green Deal may choose to form partnerships with local authorities, registered social landlords and social enterprises to offer locally-based solutions. The Department of Energy and Climate Change is looking for early involvement by Green Deal providers ahead of legislation being introduced in the forthcoming Energy Security and Green Economy Bill.

The need for legislation and other changes means that it is not possible for the full roll-out of the Green Deal to take place immediately. In the meantime, it is essential that we do everything we can to maintain and where possible quicken the pace of energy efficiency improvements, so that householders' access to support is not interrupted. Therefore this action plan sets out the strategic work in light of the progress that will be potentially made in light of the Green Deal and the introduction of the Energy Security and Green Economy Bill.

Another key action set out in the 2010 Annual Energy Statement is a commitment to extending the Carbon Emissions Reduction Target (CERT) to the end of 2012. This will lead to the increase in the target for the scheme by over 100 million lifetime tonnes of CO_2. This will help ensure that householders are supported in receiving the measures that can make the greatest difference to them. The amendments to the scheme are currently before Parliament, and will drive a step change in insulation delivery, providing insulation to over 3.5 million households across the UK, and in doing so will provide certainty for the energy efficiency supply chain, allowing the industry to invest early and grow its capacity to help meet future challenges.

The Government will include powers in the forthcoming Energy Security and Green Economy Bill to introduce a new obligation on energy companies from 2012, to take over beyond CERT. This new obligation will underpin the Green Deal, and focus particularly on those householders (e.g. the poorest and most vulnerable) and those types of property (e.g. the hard to treat) which cannot achieve financial savings without a measure of support.

The government consider the roll out of smart meters to enable mass behavioural change with regards to energy use and allow people to gain a better understanding of energy consumption and how they can best reduce it in the home. The Government and Ofgem are currently together publishing a prospectus for smart meters. This will set out detailed plans for delivering a smart meter to every home in the country, covering a wide range of proposals from consumer engagements to technical issues such as minimum requirements for the smart meter system (DECC 2010).

8.3.5 Feed-in Tariffs

The government has put in place a system to provide financial rewards for small-scale low carbon electricity generation in the form of the Feed-in Tariff (FIT). Electricity supply companies are to provide payment for the electricity produced by small-scale renewable generators. This has been implemented to encourage the uptake of renewable energy technologies by homeowners, schools and businesses of all sizes.

A financial model for FIT has been developed which has equated that on average if a household was to install a well-sited photovoltaic installation they could be receiving £800 or more and an additional £140 a year saving from the household energy bill.

8.4. Actions

Objective 3: **Residential**

Aims:

- reduce CO_2 emissions from the residential sector across Croydon from 803KtCO_2 (2005 baseline) to 540.82KtCO_2 by 2025
- develop Croydon's low carbon energy infrastructure
- introduce policy framework to deliver developments with high standards of sustainable design and construction through the LDF
- develop a local strategy for delivering energy efficiency measures that is in line with economic regeneration of the borough and allows for maximum community engagement
- establish partnerships to help access funding and deliver a domestic carbon reduction strategy
- reduce energy consumption from Croydon's existing stock of domestic properties

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
R1. Develop LDF to include: • Heat maps for projected heat and cooling demand for borough • Policies for sustainable design and construction for new build • Policies addressing existing domestic buildings	March 2015	LBC – Spatial Planning	• LBC - SDS • Borough consultation & planning inspectorate • LDA • GLA	• Develop energy master plan • Produce paper assessing potential for offsite developer to contribute towards sustainability • Research possible requirements for existing housing	• Core Strategy includes targets for CSH and BREEAM • Development management DPD includes policies addressing existing buildings	• SDC evidence base completed • Affordable Housing Viability Study completed • District energy study for CMC completed

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
R2. Establish framework for delivering an area-based retrofit programme aimed at: • Private owner occupied properties • Private rented sector • Fuel poor areas • Able to pay, with properties achieving low energy efficiency	March 2012	LBC – SDS/ Housing	• CEN • EST • Energy companies • RSLs • GLA • LDA • Community groups RLA	• Confirm project partners • Develop mechanisms for project funding and delivery • Complete project action plan, to include strategies for community engagement and increasing standards in private rented housing • Set up pilot area-based retrofit project	• Area-based retrofit programme established by March 2012 **CO_2 reduction targets:** **• 38.43Kt/CO_2/yr by 2015** **• 118.49Kt/CO_2/yr by 2020** **• 262.18Kt/CO_2/yr by 2025** **RE:NEW** funding to start an area based approach for 10 easy measures to local households: target 6,000 properties for marketing, 1,500 for the installation of 10 easy measures, and 200 referrals for loft, top up loft and cavity wall insulation Total annual carbon reduction of 1.28Kt/CO_2 yr and financial savings of £256,500/yr not including the carbon reduction from potential referrals. **Number of energy efficiency installations to be made by 2015** • 5483 properties for loft insulation (4.3Kt/CO_2 /yr saving) • 21806 properties for top up loft insulation (5.06Kt/CO_2 /yr saving) • 13355 properties for cavity wall insulation (17.55Kt/CO_2 / yr savings) **Number of houses to undergo full house retrofit by 2025:** • 40,000 homes to **under go retrofit (147.15Kt/CO_2 /yr savings)**	• Energy strategy for council-owned housing in place • Partnership approach and delivery mechanisms developed through GLA LCZ bid process • RE:NEW demonstration programme complete, total CO_2 saving of 0.15KtCO_2 • RE: NEW bid has been made for 180k and additional CERT funding will be made in addition if possible • Proposal to develop a private sector housing energy strategy submitted by CEN from which targets for private rented sector insulation measures have been set. • 3.1KtCO_2 saved to date through household insulation

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
R3. Healthy Croydon Initiative Pilot	March 2011	LBC - Housing Enforce-ment team/ Adult Services/ Housing	LBC - SDS	• Coordinate data from the healthy Croydon Initiative to help identify key areas for the area based retrofit programme	• Door Knock 900 addresses in Broad Green Ward	• 125 houses already accessed, 7 of which have been referred to CEN or EST.
R4. Establish partnership with RSLs in Borough to deliver retrofit projects	March 2015	LBC – Housing	• LBC – SDS • RSLs • CEN	• Establish key contacts for each organisation • Establish average SAP rating of RSL houses • Embed cooperation over retrofit projects in RSL rationalisation process • Coordinate bids for funding (e.g. HCA) • Implement programme to target 'hard to treat homes' and those currently achieving low SAP rating	• Number of dwellings with SAP rating below 60 • Number of cavity walls and lofts that do not have insulation	• RSL rationalisation project initiated
R5. Ensure council new builds achieve exemplar standards of design and construction	March 2015	LBC – Housing develop-ment	• Housing supply and investment board • Council new build design team • SDS	• Ensure that council new build houses achieve at least CSH Level 4 • Install monitoring system to asses building performance to inform design process in selected dwellings • Deliver council new build scheme that meets CSH level 6/ Passivhaus Standard	• By 2013 23 dwellings achieving code level 5 • By 2013 64 dwellings achieving code level 4 • By 2015 No. of dwellings achieving CSH Level 4 or equivalent • BY 2015 No. Of dwellings achieving CSH Level 5 or above • BY 2015 No. of dwellings achieving Passivhaus standard	• Council new build phase 2 is to Levels 4 and 5. • Paper on installing monitoring equipment produced by SDT

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
R6. Improve SAP rating of council-owned housing stock	Ongoing	LBC: Housing	RECS Wates • BISF • CEN	• Raise SAP rating in social housing, in particular targeting houses below 60	• Average SAP rating to increase by 1 each year • 2011 600 properties to have a SAP rating below 60. • 2010/11: 350 properties to be upgraded to condensing boilers 0.13ktCO_2 , £24,500 annual saving. • 2010/11: 27 properties without central heating to be provided with new central heating 0.01ktCO_2 annual saving. • 2010/11: 100 properties to receive top up insulation 0.02Kt CO_2, £10,000 annual saving. • 2013: 350 properties on Handcroft Road to have improved heating controls, 0.03ktCO_2 annual saving. • 2013: 8 sheltered blocks to have solar water heating, 0.02ktCO_2, £1,961 annual savings • 2013: 48 hard to heat properties at Ritchie Road to have overcladding installed, 0.1ktCO_2, £19,200 annual savings	• Since 2000 Croydon is the top performing London authority and is in the top quartile nationally • 99% of housing stock has central heating (either gas or electric storage heaters • 100% of housing stock that is suitable has cavity wall insulation • Hard to heat homes have been targeted, all Wates housing blocks (16) have been overclad, 55 Wates houses and 57 BISF have been overclad and refurbished • Shelter blocks at Borough Grange, Southsea Court and Toldene Court have been fitted with solar water heating • Over 10,000 dwellings have received low energy light bulbs • This has saved over 4ktCO_2 annually.

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
R7. Implement programme to help maximise household installations of renewable energy technologies using FIT and RHI	March 2015	LBC – SDS/ Housing/ Corporate Finance	• EST	• PV installation programme for social housing implemented • Paper investigating possibilities for council to set up microgeneration project delivered • Uses of FIT/RHI money from council-owned buildings confirmed	• 2012: 500 installations on social housing completed by contractor • Financial model for wider programme developed, subject to approval • 2015: 11.04 $KtCO_2$ saved • 2020: 73.575 $KtCO_2$ saved • 2025: 147.15 $KtCO_2$ saved	• initiated procurement process for PVs
R8. Guide LSP staff to improve the energy performance of their homes as an example to other Croydon residents	Ongoing	LBC: SDS	• EST	• Ensure staff have access to information on energy efficiency measures and grants etc.	• 1000 employees to have undertaken energy efficiency home improvements under the loan scheme (Loft and cavity wall insulation), 1.41$ktCO_2$, £265,000 annual savings	

9

Low carbon economy

9.1. What are our aims?

CO_2 reduction targets have been set for the industrial and commercial sector, following the overall target for this strategy.

Croydon Industrial and Commercial CO_2 reduction ($ktCO_2/yr$) based on 2005 baseline

	Reduction targets	Reduction
2015	5%	84.06
2020	20%	112.08
2025	34%	190.53

More work is required to identify the potential level of CO_2 reduction within this sector, which can be done by monitoring the progress of companies working with Envibe, who offer environmental business advice. This will help identify more specific interim carbon reduction targets as well as any additional work that may be required if the long-term target of 34% is not going to be met through the current level of action. The work of Envibe can make a contribution to this but their work only targets approximately 2% of businesses in the borough. Other companies may be making improvements through obligations to the CRC, or as a result of outside influence and motivation. A future aim is therefore to try and capture this information and gain an idea of what type of activity is taking place across the borough, in addition to that being coordinated through the work of Envibe. This will be done through setting up a Corporate Carbon Club to monitor the progress being made by large corporate organisations within the borough that are not already working with Envibe. This would also help to motivate activity beyond the corporate statutory obligations.

Carbon emissions from the commercial sector come primarily from electricity usage, including lighting and computing. As the climate continues to warm, energy used for cooling buildings could become increasingly significant. A large number of businesses in central Croydon already have air conditioning units installed. Due to the fact that the commercial sector's primary energy consumption is from electricity the emissions from this sector are significant and can be reduced dramatically. Substantial savings can be achieved through simple actions like turning off appliances at night and avoiding inefficient heating and cooling of buildings. New working practices and technological innovations within the IT sector (such as 'server virtualisation') will also support a reduction in electricity usage. These carbon savings can lead to significantly lower energy bills, and will make Croydon more economically competitive. If economic activity slows over the next few years due to a global recession these cost savings could be even more valuable.

Despite the fact that there is a high level of commercial new build planned for the borough, it is important to focus work also on improving the energy efficiency of existing commercial buildings in refurbishment projects. Croydon has more office floor space than anywhere else in south London. The available floorspace in Croydon's metropolitan centre is 58,000 m2 (on 16 sites over 929 m^2). However, a disproportionately high proportion is old stock (1940-1970) and only 6% is new (1990-2003) compared to 57% in Reading and 60% in Crawley. Commercial buildings are typically refurbished every ten years, and energy efficiency improvements can be more easily made during refurbishment, also making additional savings on the embodied energy of the building materials.

The objectives set out in this action plan overlap with several existing streams of work currently ongoing within the council. These include the District Energy programme, which feeds into the Environment and Climate Change Partnership via the District Energy Programme Board. This work will contribute to reducing CO_2 emissions in the commercial sector across the borough. Actions associated with the Sustainable Schools Programme currently being run by the Council are also included in this action plan.

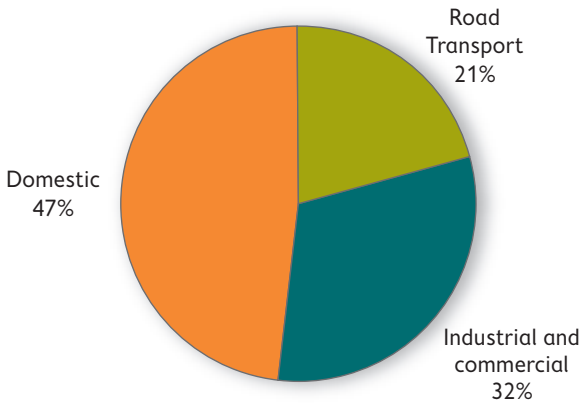
9.2. Where we are now

Croydon has been identified by central government as a growth borough and has been earmarked as the main driver for growth in south London in the period up to 2031. Croydon Metropolitan Centre (CMC) has been acknowledged as an Opportunity Area in the London Plan.

The CMC is one of the most significant business, commercial, leisure and entertainment centres in the south east and dominates the local economy. Containing 762,000 m^2 of retail space and with a GDP of about £2.5 billion, the town centre is one of the top twenty shopping centres nationally and a major financial services centre, attracting over 140,000 workers and home to 20 "blue-chip" companies. The concentration of business, commercial, industrial and warehousing activity along the Purley Way corridor provides a further major focus for economic growth and local employment in the borough.

Croydon has also been recognised in the London Plan as one of four major economic opportunity areas. A key challenge will be decoupling economic growth from increased energy demand and associated carbon emissions.

CO_2 emissions by sector (2007 NI186)



Emissions from the commercial and industrial sector in Croydon account for 32% of the borough's total emissions, therefore it is important that this action plan focuses on how to work with local businesses to help them reduce their emissions and improve their environmental policy. The adoption of the District Energy scheme in the CMC is one particular example of how CO_2 reductions can be made within this sector.

The Carbon Management Energy Efficiency Programme (CMEEP) sets a 25% CO_2 reduction target for 2015 for the council's own operations, including emissions from schools which account for 44% of the council's emissions. This will make a significant contribution to borough wide carbon reduction and the 34% 2025 target set in this strategy.

9.2.1 District Energy

The Mayor of London has set a target in the draft Climate Change Mitigation and Energy Strategy for 25% of London's energy to be produced from District Energy by 2025.

Croydon has a number of locations that have favourable conditions for the establishment of District Energy (DE) schemes. The CMC demonstrates particular circumstances due to its heat requirements and urban density.

DE systems produce heat, power and cooling at a central plant or energy centre. The energy produced by the plant is then distributed via a network of pipes and wires to provide electricity, heat for space heating and hot water and cooling. As a result, individual buildings are not required to have individual heat and cooling plants.

Croydon Council is developing a programme to offer town centre business and residential developments reliable low cost and low carbon heat. This will help to establish Croydon town centre as a leading location for the low carbon economy. The programme is being developed with support from the London Development Agency. It has the following features:

- delivery in up to three phases. The first will have an energy centre at Taberner House with heat network connecting up to the new council PSDH building and College Green sites with a potential energy spine along Wellesley Road to various buildings including Ruskin Square
- further phases in subsequent years will connect additional developments along Wellesley Road and within East, West, Mid Croydon and College Green masterplan areas
- implementation of the full programme in the town centre will offer up to 20% carbon reductions with individual buildings benefiting from up to a 30% reduction

9.2.2 Sustainable Schools Programme

The council has secured funding for a Sustainable Schools Programme (SSP) to provide schools with support and guidance on carbon reduction and sustainability. The SSP was launched in April 2010 and is due for review and a possible further two year extension in April 2011. It is expected that schools will make significant financial savings through the work as well as contributing to the council's CO_2 reduction targets. Access to the Carbon Hub, an interactive online platform for measuring and reducing carbon emissions, is available to all schools in the borough from September 2010 to help achieve the SSP objectives.

The Local Authority Energy Finance (LAEF) scheme is an internal invest-to-save loan fund for energy efficiency improvements in council buildings. To date, schools have received over £300k of LAEF funding since 2005 and this has led to ongoing annual savings of £80K and 520 tonnes of CO_2. Under the SSP a further £80k of investment in schools has been identified for 2010. In addition to LAEF investment in schools, work is underway to deliver renewable energy installations in seven schools across the borough using a combination of Section 106, central government grant and British Gas funding. Due for completion by the end of the 2010, it is expected to deliver further annual savings of £5k and 25 t CO_2.

The UK government wants every school to be a sustainable school by 2020. 38% of schools in Croydon are registered as part of the Eco-Schools programme. This is an international award programme that guides schools on their sustainable journey, providing a framework to help embed these principles into the heart of school life. Since 2007 the Council has been working with local schools to develop school travel plans. This has encouraged a modal shift in transport use for journeys to school with a significantly larger number of pupils walking rather than being driven in the car.

All work conducted to reduce CO_2 emissions from schools will contribute to the reducing the council's own emissions, in line with the CMEEP.

9.2.3 Envibe

A key aspect of this action plan is associated with the work carried out by Envibe, a local organisation that gives hands-on support with regards to waste, water and energy management and rewards companies for their environmental achievements. This free environmental business support programme continues to be recognised regionally for its success in helping local businesses to improve environmental performance. Envibe has worked with over 750 businesses since 2005.

The Envibe programme is helping to deliver the objectives of the 'Inspire South London' project which supports greening business and environmental innovation. Envibe adhere to the targets set by 'Inspire South London' which are referenced within the action plan. Inspire South London also set targets for work place travel planning. SELTRANS has historically had responsibility for workplace travel planning in the borough, although this work has recently been handed back to the Council and will be coordinated through Envibe. As a result a new programme of work to develop new travel plans with new businesses as well as to review historical WTPs in order to gain an idea of their success has been initiated. This body of work is sited in the transport Action Plan.

9.3. Actions

Objective3: Low carbon economy

Aims:

- reduce CO_2 emissions from the commercial and industrial sector across Croydon from 560 $ktCO_2/yr$ (2005 baseline) to 369.85 $ktCO_2/yr$ by 2025
- develop local skills in low carbon industries
- support local businesses to improve their environmental performance
- support local businesses to deliver wider sustainability benefits across Croydon
- improve the capacity of schools to manage their carbon emissions
- provide financial incentives for businesses to reduce their carbon footprint

Action	Deadline	Partner responsible	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
LCE 1. Develop district energy proposal for CMC	March 2011	LBC- SDS- with LDA	• LBC • CCURV • LDA • AECOM • EST / CEN Town centre landlords / owners / developers/ tenants	• Develop business case for CMC Phase 1 to be agreed by cabinet • Engage with landlords and establish stakeholder groups • Engage CCURV and other developers re: ESCO • Complete policy guidance for developers and businesses • Confirm programme team and structure	• 0.4kt/CO_2/yr saving per year	Discussions with CCURV Programme Board establishment in train
LCE 2. Economic Strategy to incorporate strategy for jobs and training in low carbon industries by March 2015	March 2015	LBC – Economic Development		• New strategy includes sustainability elements	• No. of jobs in low carbon sector/ apprentices/ no. of training courses	
LCE 3. Implement Sustainable Schools Programme	Annual review	LBC- SDS	• LBC • Schools forum • CYPL	• Complete benchmarking local schools on energy and water consumption and CO_2 emissions against national indicators and standards • Provide the Carbon Hub to schools as a web based platform for carbon foot-printing and networking • October 2010 all schools invited to complete the sustainability review on the Carbon Hub. • Schools to develop a carbon reduction plan • Install of display meters in all schools • Manage CSCCF programme to install renewable energy technologies in 6-10 schools • Prioritise investment in LAEF projects on a low cost/high carbon yield basis	• 7 PV installations and 1 wind installation under CSCCF, total saving of 0.024 $ktCO_2/yr$ • 2.79 $ktCO_2/yr$ saving by 2021 for secondary and primary schools, assuming a 10% reduction through behaviour change and 25% reduction through the installation of energy efficiency measures and renewable technology.	• All schools contacted regarding the installation of a display meter • LAEF: £490k invested in 100 projects since 2005 with a saving of 955 tCO_2/yr and £135k in energy bills • 15 schools have undertaken a face to face comprehensive Sustainability Review

Action	Deadline	Partner responsible	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
LCE 4. Envibe support programme for local businesses resulting in improvements in waste and water management practices, energy efficiency, smarter travel, and green procurement. Envibe to offer advice to local businesses environmental management systems and legislation.	Ongoing/ review November 2011	Envibe	• LBC • Envibe partners/ Environment Agency/ CEN/ Seltrans/TfL/ Ground Work/ London Remade	• 200 businesses receiving an Envibe environmental award by Nov 2011 • Envibe/ISL to provide 12hrs of support to 382 businesses registered on the database. • Businesses working with Envibe to be encouraged to develop their own WTP • Run workshop to promote environmental business excellence • Carbon footprints for businesses to be uploaded onto the Envibe Environmental Savings Spreadsheet, providing more detailed information on carbon emission reduction from local business activity. • Establish a Corporate Carbon Club by Nov 2010, offering Environmental Reviews, setting baselines for monitoring and measuring using the Envibe Toolkit. 3 events and one to one support offered. Links to be made with DE.	• 382 Businesses assisted by Nov, 2011 • ISL target – 39 businesses achieving quantifiable improvements in environmental performance by 2012 • ISL target -102 businesses with improved performance by 2012 • ISL target - 11 SMEs diverting waste from landfill by 2012, totalling a diversion of 22.1 tonnes of waste per annum • ISL target – 14 businesses achieving a total of 3450M3 water saved per annum • ISL target – 13 businesses achieving a total of 12880 tonnes/CO_2 saving per annum • ISL target – 10 businesses achieving a total of £1,449 saved per annum as a result of improved environmental management and performance by 2012 • ISL target – 11 businesses signing up and committing to improvement of a Bronze Award or better in the Mayor's Green Procurement Code by 2012 • ISL target – 33 SMEs adopting an active Environmental Policy and/or using the ENWORKS reporting tool by 2012 • ISL target – 11 SMEs supported in gaining independent accreditation for environmental management (e.g. Green Mark, Acorn, BS 8555 or ISO 14001) by 2012 • 10 new WTPs • Develop existing WTP with 17 businesses • 12 businesses to receive DTT • Deliver 2 WTP workshops • Deliver 6 workshops, by Nov 2011: 2 how to write Environmental Policy, 1 understanding EMS, 1 MTB and 2 additional • 5 corporate businesses to sign up to the Corporate Carbon Club, 100% baseline link to DE and CRC, per capita reductions achieved by Nov 2011	Discussions with CCURV Programme Board establishment in train

Action	Deadline	Partner responsible	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
LCE5. All LSP members with premises to develop a ten point Climate Change Action Plan for own activity which includes mitigation and adaptation and builds on this strategy	March 2011	LBC-SDS	All LSP: • PCT • Police • LBC • Job centre	• Plan of activity for mitigation and adaptation agreed at highest level of LSP Partner organisations • All partners to set targets and develop performance management framework	Carbon reduction targets: • 9.5% -2011 • 14% - 2015 • 36% - 2020 • 57% - 2025	• Workshop held March 2010

10

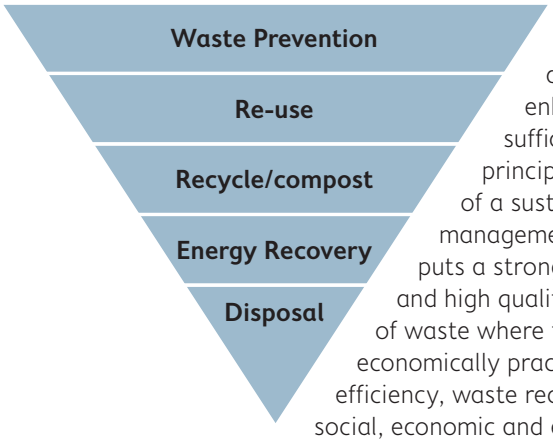
Waste

10.1. What are our aims?

Our primary aim is to ensure we meet our landfill obligation by diverting more waste from landfill.

Each year, the UK generates about 100 million tonnes of waste from households, commerce and industry. Most of this ends up in landfill where the biodegradable part generates methane as it decomposes. Methane is regarded as the most potent greenhouse gas and has a warming potential 21 times more than carbon dioxide, therefore this has a considerable contribution to climate change.

Waste hierarchy (WFD 2010)



The 2010 Waste Framework Directive (WFD) and national Waste Strategy 2007 follows five key principles for regional waste management. They are to reduce the reliance on landfill, enhance regional and sub-regional self-sufficiency, the adoption of the proximity principle and waste hierarchy and the inclusion of a sustainability assessment for all waste management strategies. The revision of the WFD puts a strong emphasis on waste reduction, re-use and high quality recycling, with separate collections of waste where technically, environmentally and economically practicable. Focus should be on resource efficiency, waste recovery and wider concerns including social, economic and environmental impacts of the methods by which we manage our waste.

Croydon aims to put emphasis on continuing efforts to increase recycling rates across the borough. The most recent estimates for waste growth in the borough, produced by the GLA, are 0.5% each year up to 2020. There are a number of factors affecting this growth, including a rising population and an increase in the number of smaller households, both of which generate more household waste per head of population. With increasingly stringent targets to be met for the diversion of municipal and biodegradable waste from landfill under the Landfill Directive and the Landfill Allowance Trading Scheme (LATS), increasing recycling rates is of paramount importance and must be encouraged across the borough.

10.2. Where we are now

In 2006/2007, Croydon Council handled approximately 187,000 tonnes of household and commercial waste through a wide range of services. Of this about 140,000 tonnes was household waste alone (including recycling and composting). There has been a 12% reduction in the amount of household waste sent to landfill since 2004/05. The borough's recycling rate has doubled since 2006 and in 2009 it was 32.22. Since 2006 Croydon's recycling rates have improved relative to other boroughs. Croydon is currently ranked 19th out of 33 London authorities. The Waste Strategy and recycling Plan 2008/11 sets out how the Council will increase the amount of waste reused and recycled and meet the council's landfill targets.

The Mayor of London wants London to be a zero waste to landfill city by 2031. By first reducing the amount of municipal waste produced and then selecting the optimal means for dealing with the municipal waste sent to landfill, London could save approximately two million tonnes of CO_2 equivalent emissions each year.

Since 2007/08 the following recycling initiatives in addition to the weekly domestic refuse collections service have introduced.

- borough-wide fortnightly collection of glass bottles and jars, plastic, mixed cans, paper, card, textiles and shoes to 120,000 properties
- borough-wide fortnightly collection of garden waste to 120,000 properties.
- fortnightly collection of 'dry' recycling to 1,500 blocks of flats/housing estates
- refurbishment of three reuse and recycling centres at Factory lane, Fishers Farm, and Purley Oaks.
- recycling of electronic equipment at 3 recycling sites.
- trialling kerbside collection of food waste to over 2,500 properties.
- launch of real nappy incentive scheme
- collection of Christmas trees at 21 sites across the borough.
- publicity and promotional campaigns encouraging waste reduction, reuse and recycling
- the Appliance Reuse Centre (ARC) collects washing machines, electric cookers, fridges and freezers along with household and office furniture. Items are refurbished and sold at a reasonable price. The ARC offers a free collection service for reusable items.
- the council also provides recycling services for businesses including a glass recycling service and paper/card recycling. In 2007/08 there were 196 businesses recycling paper/card and 104 recycling glass using the council's scheme.

10.2.1. Waste Priorities

A key priority will be reducing waste arisings in line with the waste hierarchy. This will include increasing recycling and composting services for residents and businesses and greater promotional work with schools, community groups and businesses. The diversion of waste from landfill will continue to be a key focus to ensure the council meets its obligation under the Landfill Allowance Trading Scheme (LATS) for the diversion of biodegradable waste from landfill. If these targets are not met unnecessary fines will be incurred.

It is estimated that in preparing London to manage its municipal waste in the most carbon efficient and economically beneficial way, the number of green collar jobs, ranging from research and development, project management and manufacturing through to maintenance and operation of facilities needed could grow by around 350 each year until 2025.

Current priorities are for Croydon council to expand the kerbside collection of food waste. Alongside this the council also plans to increase the recycling rates across the borough. Through the Sustainable Business Partnership the borough plans to engage businesses in developing good practice in reducing waste from packaging and increase recycling. This includes the Envibe Award Scheme as an incentive for businesses to do so.

10.3. Actions

Objective 5: Addressing waste and environmental quality

Aims:

- Reduce waste to landfill and increase the borough's recycling rate
- Improve street cleanliness

Action	Deadline	Lead Partner	Partners involved	Success criteria / milestones	Target / indicator	Progress to date
W1. Diversion of biodegradable waste from landfill	On going	LBC	South London Waste Partnership	Achieve landfill targets	Tonnage permitted to landfill: • 2009/10 75,700 • 2010/11 67.25 • 2012/13 50,421 • 2014/15 50,096 • 2017/18 39,607 • 2019/20 35,282	Have met landfill obligations in 2009/10
W2. Recycling and composting of household waste	On going	LBC	South London Waste Partnership	Achieve landfill targets	National targets • 40% 2010 • 45% 2015 • 50% 2020	
W3. Recovery of municipal waste	On going	LBC	South London Waste Partnership	Achieve landfill targets	National targets • 53% 2010 • 67% 2015 • 75% 2020	

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Acknowledgements

We would like to thank all Environment and Climate Change Partnership members for the information they have provided for this strategy and the valuable guidance they have offered. We wish to acknowledge the Environment Agency, Natural England, The Woodland Trust, Thames Water, Transport for London, Creative Environmental Networks, The Energy Saving Trust, utility partners, the G15 Registered Social Landlords, Cycling Star Alliance, Transport Initiatives, Peter Brett Associates LLP, Envibe, Streetcar, Sustrans, the GLA, the LDA, NHS Croydon, Mayday Hospital, Croydon Economic Development Company, John Laing, the BME Forum, The Diocese of Southwark and Al Khair School.

Thanks also goes to all council departments involved in providing information and guidance for the development of this strategy, among others Spatial Planning, Transport and Engineering, Strategic Transport, Waste Services, the Pollution Team, Adult Services, Housing and the Sustainable Development Service. Acknowledgements are also made to members of the Strategic Transport Board, The District Energy Programme Board and the South London Waste Partnership who form part of the Environment and Climate Change Partnership alongside the Residential and Low Carbon Economy Strategy Groups.

12

Glossary Of Terms

BME	*Black and Minority Ethnic*
CERT	*Carbon Emission Reduction Target (formerly the Energy Efficiency Commitment. This is a target imposed on the gas and electricity transporters and suppliers under Section 33BC of the Gas Act 1986 and Section 41A of the Electricity Act 1989, as modified by the Climate Change and Sustainability Energy Act 2006).*
CEN	*Creative Environmental Networks*
CESP	*Community Energy Saving Programme (this requires gas and electricity suppliers and electricity generators to deliver energy saving measures to domestic consumers in specific low income areas of Great Britain. CESP has been designed to promote a 'whole house' approach and to treat as many properties as possible in defined areas)*
CMEEP	*Carbon Management Energy Efficiency Programme*
CMC	*Croydon Metropolitan Centre*
CRC	*Carbon Reduction Commitment (the UK's mandatory climate change and energy saving scheme)*
CLP	*Construction Logistic Plans*
DE	*District Energy*
DECC	*Department of Energy and Climate Change*
DEFRA	*Department of Food and Rural Affairs*
DSP	*Delivery Service Plans*
DTT	*Driver Techniques Training*
ECCP	*Environment and Climate Change Partnership*
EMS	*Environmental Management Systems*
EVCP	*Electric Vehicle Charging Points*
FIT	*Feed-in Tariffs (payments to energy users for the renewable energy they produce)*
GHG	*Greenhouse Gas (gases in the atmosphere that absorbs and emit radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect. The primary greenhouse gases in the Earth's atmosphere are water vapour, carbon dioxide, methane and nitrous oxide)*
HEEP	*Home Energy Efficiency Programme (now known as RE:NEW)*
ISL	*Inspire South London*
$KtCO_2$	*Thousand tonnes of carbon dioxide*
LAA	*Local Area Agreement (Local area agreements (LAAs) are three-year action plans for achieving better outcomes, developed by councils with their partners in local strategic partnerships (LSP)*
LAEF	*Local Authority Energy Finance*

LATS	*Landfill Allowance Trading Scheme (The Landfill Allowance Trading Scheme (LATS) introduces significant and innovative changes in waste policy and practice for the diversion of biodegradable municipal waste from landfill. It is intended to provide a cost effective way of enabling England to meet its targets for reducing the amount of biodegradable municipal waste sent to landfill under Article 5(2) of the EC Landfill Directive)*
LBC	*London Borough of Croydon*
LCE	*Low Carbon economy*
LDF	*Local Development Framework*
LSP	*Local Strategic Partnership (A local strategic partnership (LSP) is a non-statutory body that brings together the different parts of the public, private, voluntary and community sectors, to work at a local level. The lead role in the LSP is taken by the local council)*
MBT	*Mechanical Biological Treatment*
MTB	*Meet The Buyer*
NI	*National Indicator (the National Indicator Set is the only set of indicators on which central government will manage the performance of local government. It covers services delivered by local authorities alone and in partnership with other organisations like health like health services and the police)*
NRF	*Neighbourhood Renewal Funding*
ppm	*Parts per million*
PAYS	*Pay as you save (this will give households the opportunity to invest in energy efficiency (such as solid wall insulation) and microgeneration technologies (such as solar panels) in their homes with no upfront cost. Householders will make repayments spread over a long enough period so that repayments are lower than their predicted energy bill savings, meaning financial and carbon savings are made from day one)*
RHI	*Renewable Heat Incentive (this is a new payment that, subject to confirmation from the government, is due to be introduced in the UK in April 2011 for generating heat from renewable sources. It works in a similar way to the Feed-in Tariff and will be introduced through the same legislation - Energy Act 2008..*
RLA	*Resident Landlords Association*
SDS	*Sustainable Development Service*
SER	*State of the Environment report*
SRES	*IPCC Special Report on Emissions Scenarios*
SSP	*Sustainable Schools Programme*
ST	*Strategic Transport*
STP	*School Travel Plan*
SWMP	*Surface Water Management Plan*
UKCP09	*UK Climate Projections 2009* **(http://ukclimateprojections.defra.gov.uk/)**
WFD	*Waste Framework Directive*
WTP	*Work Travel Plan*

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Croydon Strategic Partnership involves key decision makers from the public, private and the voluntary and community sector organisations in Croydon

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