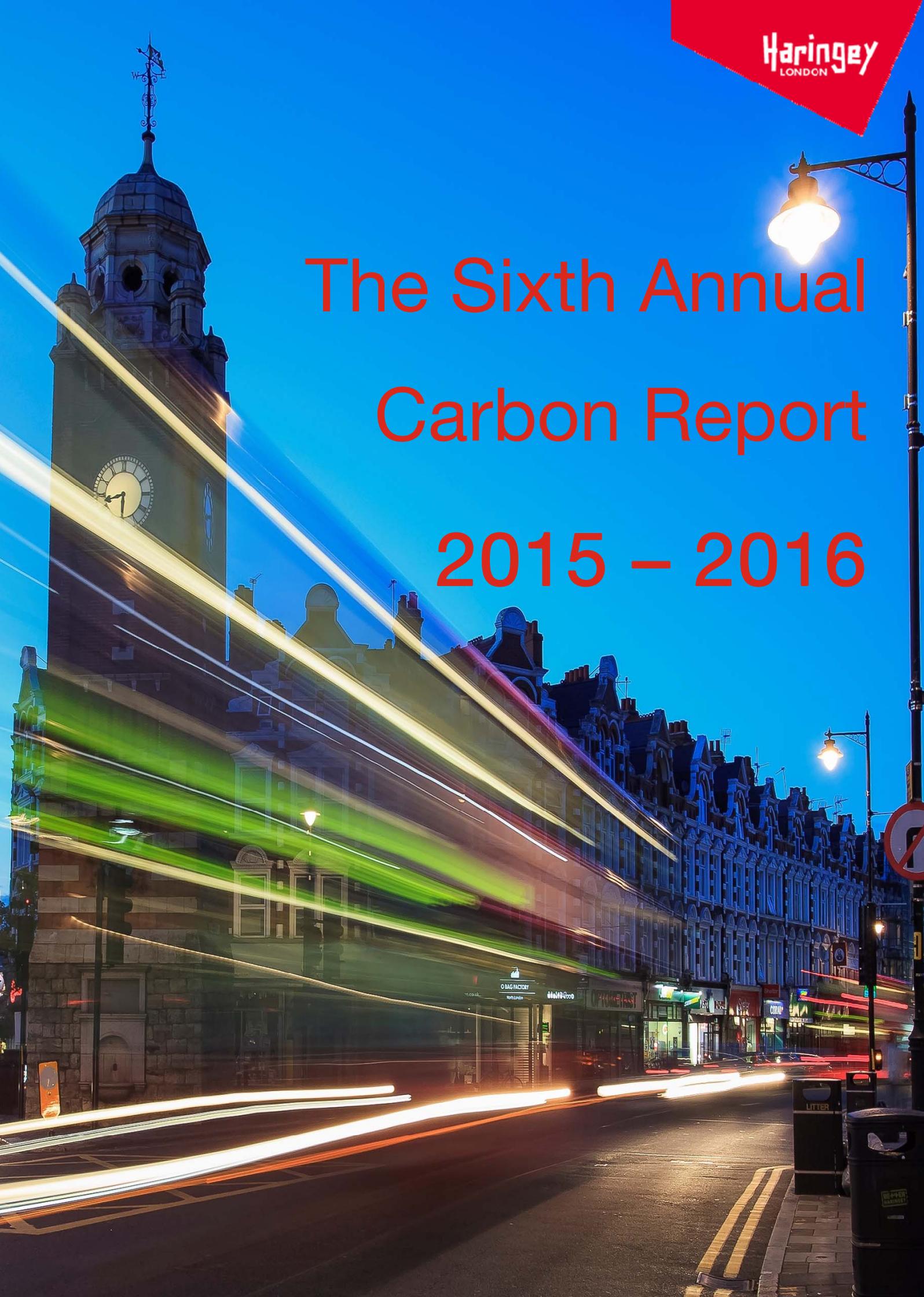


The Sixth Annual Carbon Report 2015 – 2016



Foreword

This is the 6th Annual Carbon Report produced for Haringey and tracks our performance from 2005 to 2014. It highlights the work we have done since 2015 and what we have done to meet our objective of a 40% fall in carbon emissions by 2020 (40:20). I am proud to present this report at our Full Council meeting as the delivery of carbon reduction has benefitted our community and continued to demonstrate Haringey's leadership. However, I am saddened that Haringey is still the only authority that publishes its carbon emissions at Full Council.

Haringey's 40:20 ambition is an extremely challenging target. Our work has led to a 26% fall in carbon emissions since 2005 showing great progress for the borough. We now have a lower carbon footprint than our neighbouring boroughs in North London including Barnet, Islington, Hackney, Camden, Enfield and Waltham Forest.

There is much to praise in this year's report. The Smart Homes project has been delivered, and has been recognised nationally after receiving the Green Apple Award 2016. Smart Business have supported local companies in cutting costs and carbon; the partnership with Durham University has supported our work to improve residents access to energy efficiency projects and we are continuing to develop a 'Decentralised Energy Strategy' for a low carbon heat network. We secured funding to increase measures for those in fuel poverty, and alongside this we have seen the benefits of the 40:20 grants which delivered carbon reduction projects designed by the community.

While our borough has shown leadership and delivered results, it is a shame to see the government failing to show the same level of commitment. Disappointingly, this year we saw the government Department of Energy and Climate Change disbanded and, in light of BREXIT, they have yet to commit to delivering the carbon reduction targets and legislative requirements which are set out through the European Union. In the last year, the Paris Agreement set out the scientific requirement for countries to reduce carbon emissions and manage the risk of a changing climate. This global agreement underlines the urgency and necessity for action at an international,

national and local level. But the UK is one of a few remaining countries yet to ratify the Paris Agreement on Climate Change^[1].

In the last year Haringey has continued to demonstrate leadership in reducing the borough's carbon emissions. Alongside the Mayor of London, the leader of Haringey, Cllr Claire Kober has agreed to work towards Haringey becoming a Zero Carbon authority by 2050 which will supersede the 2020 target. To help us achieve this, we are working with a panel of experts to deliver a set of recommendations for actions due early 2017. We will need to make choices now to embed these into projects as we work towards this long term target. Ensuring we continue to promote sustainable economic growth by creating new jobs, saving money and delivering carbon reduction.

In conclusion, we are moving in the right direction to deliver our ambition for 40:20, and would not have achieved this success without the support of residents, community groups and businesses. I thank all of those who contributed to reducing carbon emissions and who made this report possible.

Councillor Joe Goldberg

Haringey Cabinet Member for Economic Development, Social Inclusion and Sustainability

^[1] United Nations Framework Convention On Climate Change 'Paris Agreement – Status of Ratification' 2015 http://unfccc.int/paris_agreement/items/9444.php

Summary

Within the last year Haringey Council and community groups within the borough have sought to reduce carbon emissions even further than the previous year in order to reach the end target of 40% less by 2020. In terms of the overall decrease in CO₂, Haringey borough has achieved a 26% carbon reduction since 2005, amounting to 770.8kt by 2014. Using this data, the current trajectory proposes the 40:20 will not be achieved at this pace for overall carbon emissions.

However, taking into account population growth, per capita carbon emissions have decreased by 37% with a predicted percentage of 55% reduction by 2020. This not only meets the 40:20 target but exceeds it, suggesting Haringey are on track to accomplish a zero carbon borough by 2050.

Ongoing and future projects aim to decrease carbon emissions in the borough even further in order to meet these targets as well as addressing other issues such as fuel poverty, traffic congestion and a lack of awareness surrounding the impact of carbon emissions within the community.

Table of Contents

Foreword	2
Summary	4
List of Abbreviations	6
Introduction	7
Background	8
The National Picture on CO2	9
A new Government Energy Department	9
Reports from the Committee on Climate Change	9
Global Climate Agreement	10
EU influences	11
Regional CO2 Reduction.....	12
The role of the London Mayor	12
RE: NEW.....	13
RE:FIT.....	13
Greater London in comparison with the UK	13
Haringey's response to CO2	14
Reduction progress	14
Total Carbon Emissions for Haringey	15
Haringey in comparison to surrounding boroughs.....	16
Haringey in comparison with Great London	17
Key projects since 2015	20
Decentralised Energy.....	21
Smart Homes	22
Case study on Smart Homes	24
Smart Businesses	25
Fuel poverty intervention.....	26
Electric cars	26
Car clubs.....	27
Haringey Low Carbon Innovation Hub	28
Durham University relationship	28
Examining domestic retrofit systems and governance in Haringey:	29
Assessing energy vulnerability within Haringey:	29
Impact Acceleration Account Research:	29
Planning Policy Sustainability	30
Council corporate CO2 emissions.....	31
Zero Carbon by 2050 Commission	32
Zero Carbon developments.....	33
Smarter Travel	34
Case study on Smarter Travel	35
Personal Travel Planning.....	35
40:20 Climate Change Forum.....	36
Divestment	37
Homes for Haringey	37
Community engagement projects	37
Future plans	39
Decentralised Energy.....	39
Smart Homes	39
Smart Businesses	39
Fuel Poverty.....	39

Transport Infrastructure.....	40
Innovation Hub.....	40
Durham University	40
Planning Policy and Sustainability	41
Reducing corporate CO2	41
Smarter Travel	41
40:20 future plans	42
Other key community engagement projects	42
The Edible Landscape Project	42
List of contacts	43

List of Abbreviations

ALMO - Arms Length Management Organisation

BPL – Blue Point London

CHP – Combined Heat and Power

CO₂ – Carbon Dioxide

DBEIS - Department of Business, Energy and Industry Strategy

DECC – Department of Energy and Climate Change

EVCP - Electric Vehicle Charging Points

GLA – Greater London Authority

GULCS - Go Ultra Low City Scheme

KT – Kilo tonnes to measure amounts of carbon

LIP – Local Implementation Plan

MHSG – Muswell Hill Sustainability Group

MSE - Medium sized Enterprises

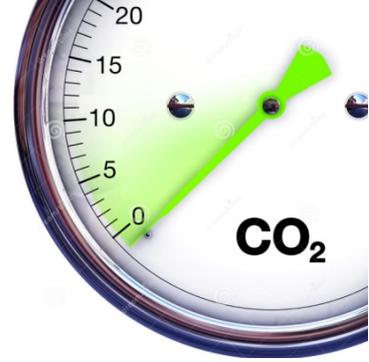
NoF - Neighbourhood of the Future

OLEV - Office of Low Emission Vehicles

SAP – Standard Assessment Procedure to measure energy efficiency

TFL – Transport for London

40:20 – Reducing carbon emissions by 40% from 2005 to 2020



Introduction

This report outlines why addressing local carbon emissions is important and shows the progress Haringey has made since 2005 by highlighting the work the council and partners have done to decrease its CO₂ levels.

The aim of this report is to showcase the levels of progress achieved in business, domestic, transport and the council's corporate estate within the last year in order to reduce CO₂ in Haringey. Additionally, predictions for future steps and projects are presented in this report which is designed to help meet the borough's target of 40% less CO₂ by 2020.

The main data source within this report was sourced from the Department of Energy and Climate Change (DECC) which, due to a change in government structures, has now merged with Department of Business, Innovation, and Skills (BIS) forming the Department of Business, Energy and Industry Strategy (DBEIS). For the purposes of this report, this data source will be referred to as DBEIS. Other information was located from the London Data Store, Haringey Council's Carbon Management Team and The Association for Decentralised Energy to name a few.

The data shown is from the 2014 statistics published in 2016 on carbon emissions. This is the most recent information. Therefore, there is no correlation between this data and the projects, schemes and campaigns that occurred within the last year.

It is important to note that whilst every effort has been made to ensure statistical and data collection on carbon emissions in this report are as accurate as possible, they are in many cases estimations. Variables such as changes to resident behaviour throughout the year, differing data collection methods for CO₂ reduction projects, change in economic factors and the inability to account for all forms of carbon emissions within the borough will have an impact on the data in this report.

Background

In order to understand the significance of this report it is important to gauge the importance of carbon emissions and its effect on the environment.

Carbon dioxide equivalent (CO₂e) is a universal unit of measurement used to assess the global warming potential of a greenhouse gas, expressed in terms of the global warming potential of one unit of carbon dioxide (CO₂)¹.

CO₂ is produced naturally as well as through human action such as burning fossil fuels. The increased CO₂ in the atmosphere has created a 'greenhouse effect' around the earth, trapping the sun's energy and causing the planet to increase in temperature². This rise in global temperatures correlates with polar icecaps melting, rising sea levels and more extreme weather conditions throughout the world.

For this reason it has become important to monitor how much carbon we, as a nation and as a local community, produce annually so that a year-on-year comparison of our progression towards more sustainable means of generating energy can be tracked. We need to link our performance against projects and programmes that will reduce our emissions.

By continually assessing Haringey's efforts to decrease the borough's carbon emissions, it is expected that the feasibility and realistic expectation of achieving a zero carbon environment by 2050 will become more attainable. Further to this, the annual reporting on carbon emissions within the borough allows us to compare our progress with the national performance. This demonstrates whether the borough is on track to provide a more sustainable environment for Haringey's community.

The carbon emission data used in this report incorporates the CO₂ emissions of the borough which are within the scope of influence by Haringey Council and is divided into three main sources:

- Business
- Transport
- Domestic

¹Department of Energy and Climate Change 'Guidance on how to measure and report your greenhouse gas emissions' 2009 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69282/pb13309-ghg-guidance-0909011.pdf

² GOV.UK 'Climate Change Explained' 2014 <https://www.gov.uk/guidance/climate-change-explained>

The National Picture on CO2

In order to know where Haringey sits in terms of local and national carbon emission reduction efforts, information has been compared to neighbouring boroughs, Greater London and the UK.

A new Government Energy Department

Following the change of Prime Minister in June, the Department of Energy and Climate Change (DECC) has been disbanded. The main functions from this department have now merged with Department of Business, Innovation, and Skills (BIS) forming the Department of Business, Energy and Industry Strategy (DBEIS). The newly created Department represents an opportunity to put carbon reduction at the heart of jobs and prosperity. However, the loss of a dedicated climate change department has the potential to send the wrong leadership messages.

Reports from the Committee on Climate Change

The Climate Change Act 2008 established a target for the UK to reduce its emissions by at least 80% from 1990 levels by 2050³. Since The Climate Change Act 2008 was passed, a UK, five-yearly carbon budget has been required to make sure the country meet the target, with the first four budgets set in to UK law as displayed in table 1.

Table showing the carbon reduction targets expected in each of the four UK carbon budgets.

Budget	Carbon budget level	% reduction below base year
1st Carbon budget (2008-12)	3,018 MtCO ₂ e	23% by 2010
2nd Carbon budget (2013-17)	2,782 MtCO ₂ e	29% by 2015
3rd Carbon budget (2018-22)	2,544 MtCO ₂ e	35% by 2020
4th Carbon budget (2023-27)	1,950 MtCO ₂ e	50% by 2025

Table 1

Performance is monitored by the Committee on Climate Change who, aside from data analysis, provide a report on up to date progress. Their 2016 report states that, in the UK, there has been good progress in reducing emissions. In 2015, emissions fell

³ Climate Change Act 2008 <http://www.legislation.gov.uk/ukpga/2008/27/contents>

by 3% and are now 38% below 1990 levels. Much of the progress has been achieved through carbon reductions in the energy sector.

Alongside this, in the last 12 months the Committee issued reports on the latest impact of a changing climate on the UK. Giving the most up-to-date and comprehensive analysis of the risks and opportunities posed by climate change to the UK. They have undertaken analysis on options to decarbonise District Energy Networks and provided a commentary on the flood risk and river management across the UK.

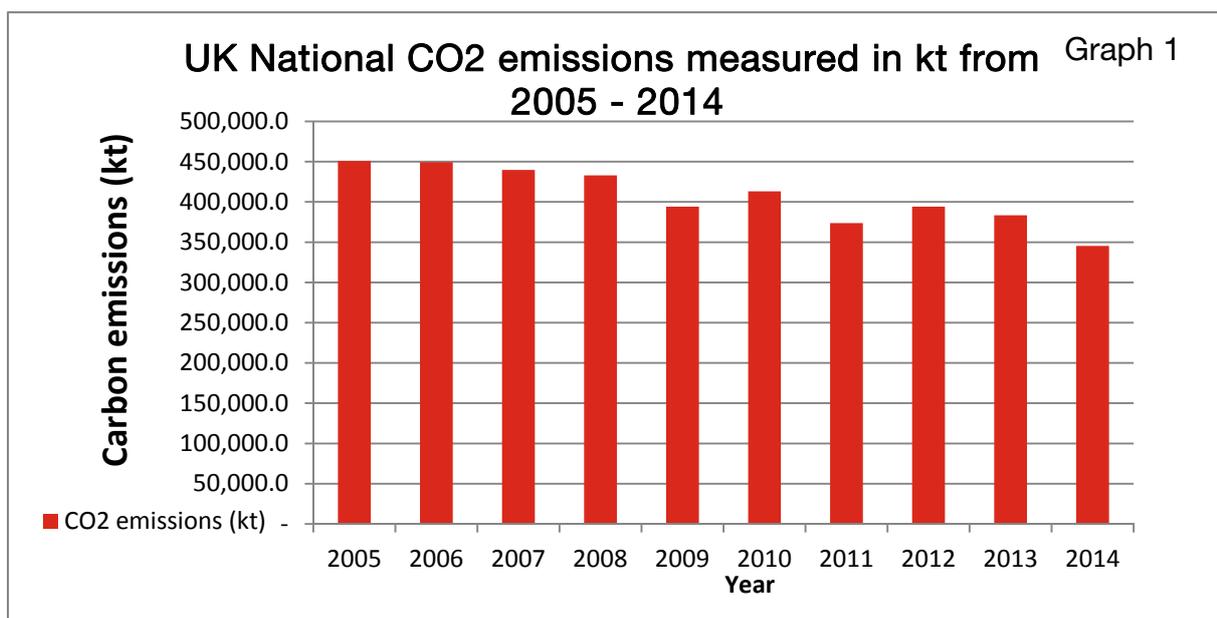
Global Climate Agreement

In December 2015 the United Nations Climate Change Conference (COP21 or CMP 11) was held in Paris, which introduced a global agreement to reduce carbon emissions. Representatives from 196 countries agreed to cut their green house gas emissions and prevent the global temperature rising above 2°C with an aim of achieving a zero carbon environment by 2050.



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21-CMP11

As of October 2016, 192 members agreed to the treaty, 92 of which having ratified it excluding the UK. After the European Union ratified, there were enough countries involved for the agreement to enter into force. The agreement took effect on 4 November 2016. Graph 1 outlines the UK carbon emission levels from 2005 to 2014 and shows a decrease of 23.4%.



EU influences

In June 2016, Britain held a referendum which resulted in the country deciding to exit the European Union⁴. This outcome raised much uncertainty within the financial, economic, political and social sectors. This alteration has resulted in many areas of Britain being unsure as to what will happen once we are no longer bound by EU law and governance. This statement may be of particular importance for environmentalists as some carbon emission reducing legislation was enforced by the EU body⁵.

It has been suggested that the exit of Britain from the EU will have no impact on UK energy policy due to The Climate Change Act. The Act imposes more stringent requirements for cutting carbon emissions on the UK compared to EU restrictions.



At this time we are unable to predict what will happen to particular areas of UK law; it has been suggested that one important piece of legislation is in danger of being altered in relation to carbon emission reduction⁵.

The UK could repeal this law once we have left the EU resulting in no foreign enforcement or sanctions⁵. This could impact on Britain's progress to reduce levels of carbon within a particular timeframe, leaving local authorities to decide where this matter sits in relation to other issue with higher priority.

Interestingly, the many regional and national projects on CO₂ reduction are co-funded by the Intelligent Energy Europe Programme of the European Union. These projects on local energy security and energy efficiency begs the question of whether projects such as retrofitting and other energy efficient schemes connected with the European Union will be affected once the UK withdraws from Europe.

⁴ GOV.UK 'EU Referendum'

<http://webarchive.nationalarchives.gov.uk/20160815143715/https://www.gov.uk/government/topical-events/eu-referendum>

⁵ The Telegraph 'What would Brexit mean for Britain's green targets?' <http://www.telegraph.co.uk/news/2016/06/13/what-would-brexite-mean-for-britains-green-targets/>

Conversely, as noted earlier, the changing relationship between Britain and the EU may have little or no impact on UK carbon emission reduction strategy and it would be unrealistic to predict the implications of such disaffiliation with the Union at this time.

Regional CO2 Reduction

The role of the London Mayor

In May 2016, Sadiq Khan was elected the new mayor of London. One of his ambitions is to set up a not-for-profit company to be called Energy for Londoners aimed at producing more of London's own, low carbon energy.

Energy for Londoners aims to provide a comprehensive range of energy services to help Londoners generate more low carbon energy, increase their energy efficiency and support local and community energy enterprises. It will buy clean energy generated across the city, using it to power Greater London Authority (GLA) and Transport For London (TFL) facilities.

Sadiq Khan has also made the ambitious objective of making London a Zero Carbon capital by 2050. These commitments include a measure to retrofit London's homes with energy efficiency measures, develop a city-wide strategy for solar panels, develop a distributed energy network in London and scale up investment in London transport. The Mayor hopes that these measures will promote economic growth in London, creating jobs, saving money and improving health and life expectancy. A report on the requirements and actions that need to be taken in order to deliver this target will be released early in 2017.

Over the next year the Mayor of London and the GLA will be reviewing the London Plan. This document will set the policy framework for major development across London. It has the ability to set energy standards in new development and push up standards in refurbishments and push the uptake of community energy networks.

RE: NEW

It is estimated that around 11% of London households are deemed to be fuel poor yet the level of retrofit activity to increase energy efficiency has continued to fall within recent years⁶. From 2014-2015, government-tracked home retrofitting in the UK fell by 44 per cent suggesting to have been influenced by a lack of funding from the energy companies under the Energy Company Obligation.

RE:NEW was established in 2009 by the previous Mayor of London to help make London's homes more energy efficient. By implementing retrofit projects and alleviating fuel poverty the programme has helped improve around 120,000 homes within London and a further 450,000 through receipt of the main subsidies. A total saving of 40,300 tonnes of CO₂ per annum has been approximated and an estimated cost saving is, in excess of, £4m over a 20 year period.

RE:FIT

The Mayor of London's RE:FIT programme seeks to facilitate retrofit to public sector workplaces and in future private businesses. The GLA has met the programme's main targets for each year of its operation. In the next year this programme will target schools and support them as they move towards independent academies.

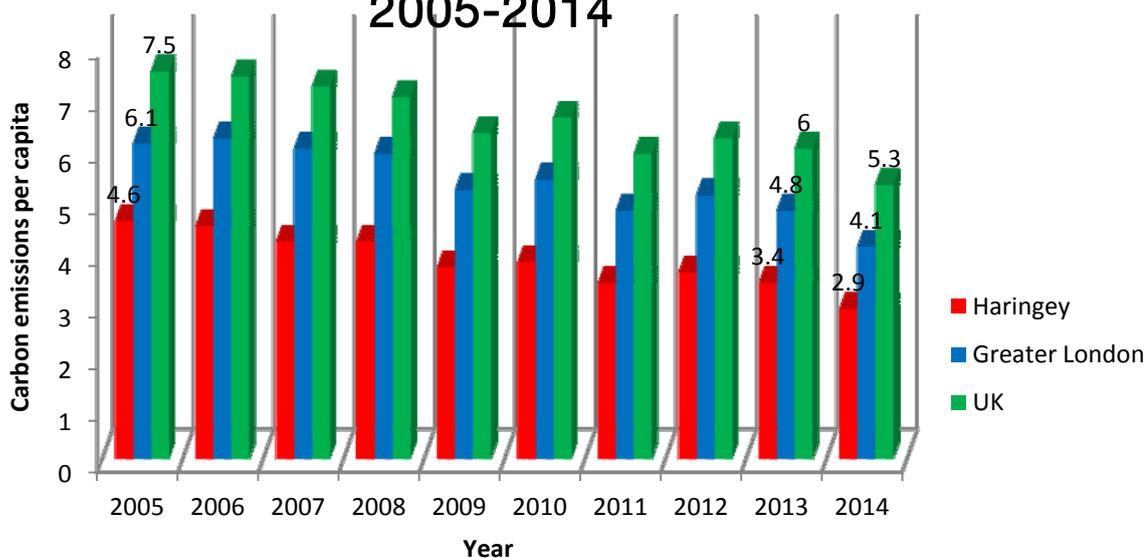
This programme has been signed up to by Haringey Council, and the council has benefited through this scheme to deliver carbon reduction in its main buildings.

Greater London in comparison with the UK

As well as comparing Haringey's CO₂ emissions with Greater London, it is important to know where the borough's progress sits with the rest of the UK regarding reducing carbon emissions. As can be seen from graph 2, carbon emissions per capita in Haringey is below the average for Greater London by 1.2t CO₂ per capita and 2.4t CO₂ lower compared to the whole of the UK by 2014.

⁶ Department of Energy and Climate Change 'Local Authority Carbon Dioxide Emissions Estimates 2014- Statistical Release' https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/533670/Local_Authority_CO2_Emissions_Statistical_Release_2014.pdf

Haringey borough, Greater London and the UK's carbon emissions per capita between 2005-2014



Graph 2

The main drivers of the decrease in UK emissions in 2014 were a decrease in the use of coal for electricity generation and a reduction in the use of natural gas for space heating⁵.

Haringey's response to CO2

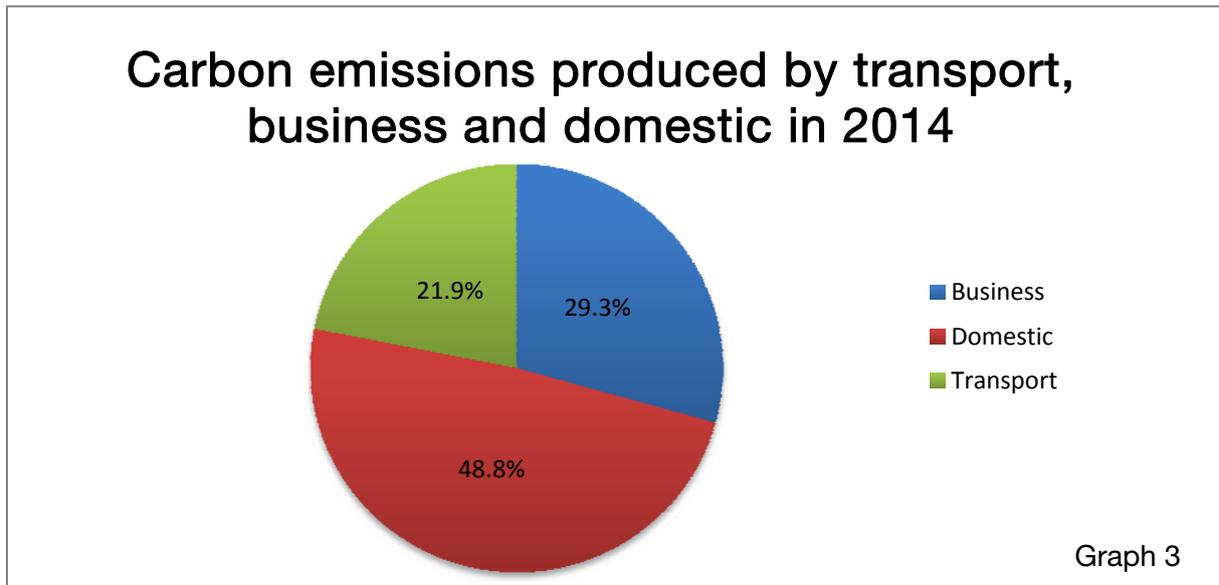
Reduction progress

The following data demonstrates the progress Haringey have made both within the last year and since 2005 (the baseline year). To achieve the 40% reduction, the borough would need to reduce carbon emissions by 616.92kt within the 15 year period.

The most recent DBEIS data was published in 2016 and provides information on 2014 emissions. It is important to note that the utilised statistics is the 'subset data' which eliminates any carbon emissions that cannot be influenced by Haringey Council.

Total Carbon Emissions for Haringey

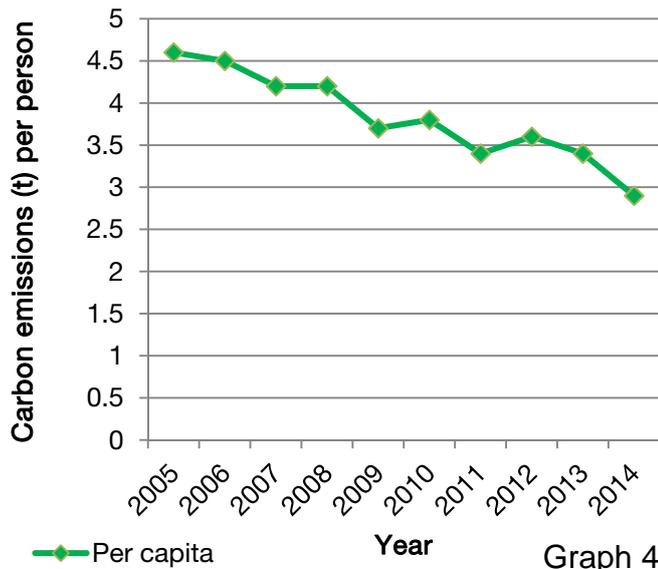
Since the baseline of 2005, the total reduction of carbon emissions in the borough, influenced by council action, is 26%. Haringey's total carbon emissions for 2014 were 770.8kt. From 2013 to 2014 a reduction of 11.8% was made resulting in this year being the largest decrease per annum in Haringey since 2005.



The pie chart (graph 3) above shows the three main sources of the borough's CO₂ emissions for this 2014 from businesses, domestic and transport sources. The data collected for Industry and Commercial carbon emissions totalled 295.5kt in 2005 and, by 2014 this has decrease by 23.5%. Carbon emissions from the domestic sector have reduced by 30% between 2005 and 2014 and Transport saw CO₂ emissions decrease by 18%.

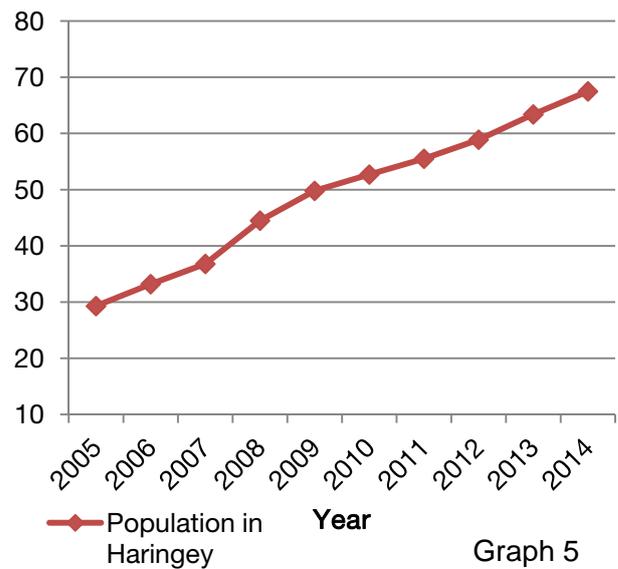
Against this since 2005 Haringey's population has increased by 14% from 2005 to 267,600 people in 2014. This has resulted in carbon emission data per capita being affected. By 2014, 37% (1.7 tonnes) of CO₂ emissions per capita were saved, with a 0.5t reduction per capita since 2013. This information is demonstrated in graph 4 and graph 5 below.

Haringey carbon emissions per capita from 2005-2014



Graph 4

Population of Haringey 2005-2014

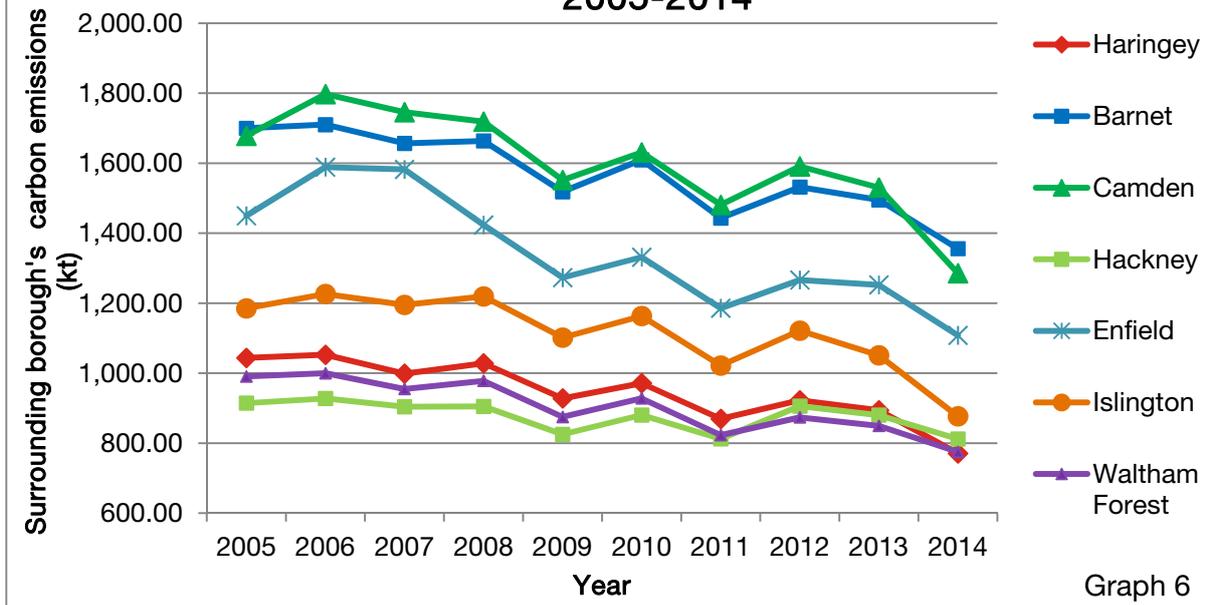


Graph 5

Haringey in comparison to surrounding boroughs

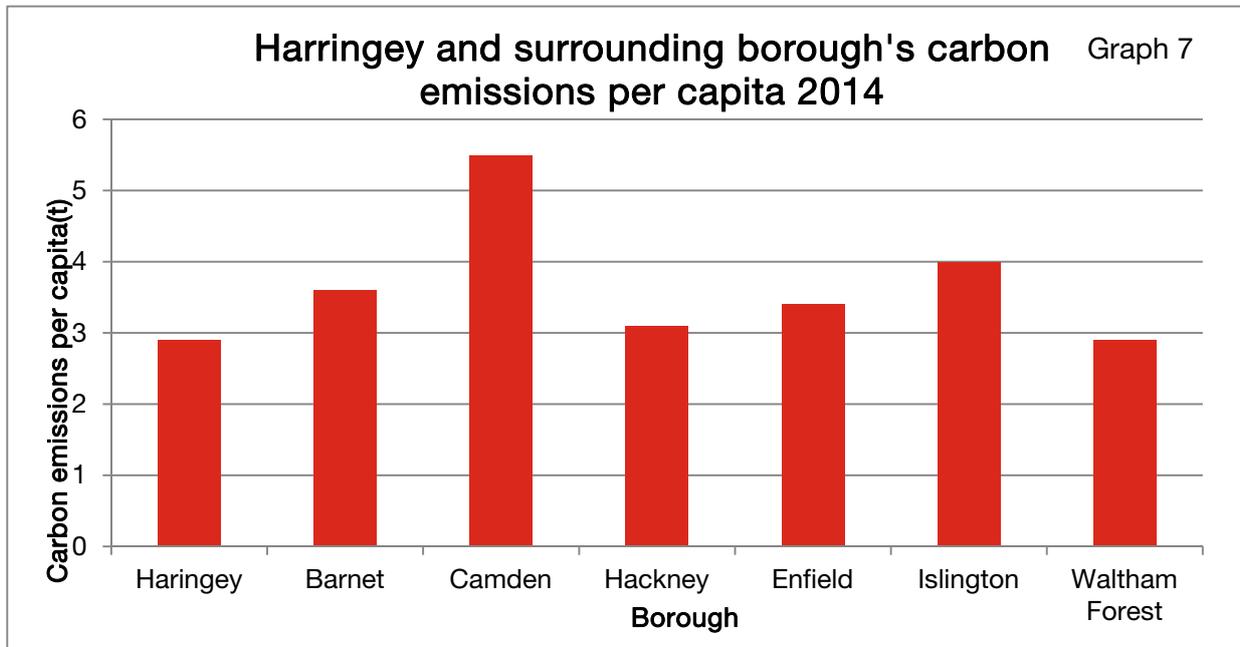
Graph 6 demonstrates carbon emissions for Haringey and its surrounding boroughs from 2005-2014. It can be seen that Haringey has one of the lowest carbon emissions in north London along with Hackney and Waltham Forest. Camden appears to follow a similar reduction trend but has the highest amount of CO₂ during this period. However, the boroughs vary in population size and this variation is likely to impact the overall CO₂ emitted per borough.

Haringey and surrounding boroughs' carbon emissions 2005-2014



Graph 6

Graph 7 shows Haringey and neighbouring borough's per capita carbon emissions in 2014. Haringey has consistently had one of the lowest carbon emissions in this grouping since the baseline year of 2005, as shown in graph 6. Compared with surrounding boroughs, Haringey has the lowest per capita carbon emission dataset in 2014 as demonstrated in graph 7.



Haringey in comparison with Great London

When comparing Haringey to the rest of Greater London, 27 out of the 33 boroughs are either equivalent or below the national carbon emission average for the UK, Haringey being one of them. This is positive for the borough's ambitious target of reducing their CO₂ emissions 40% by 2020.

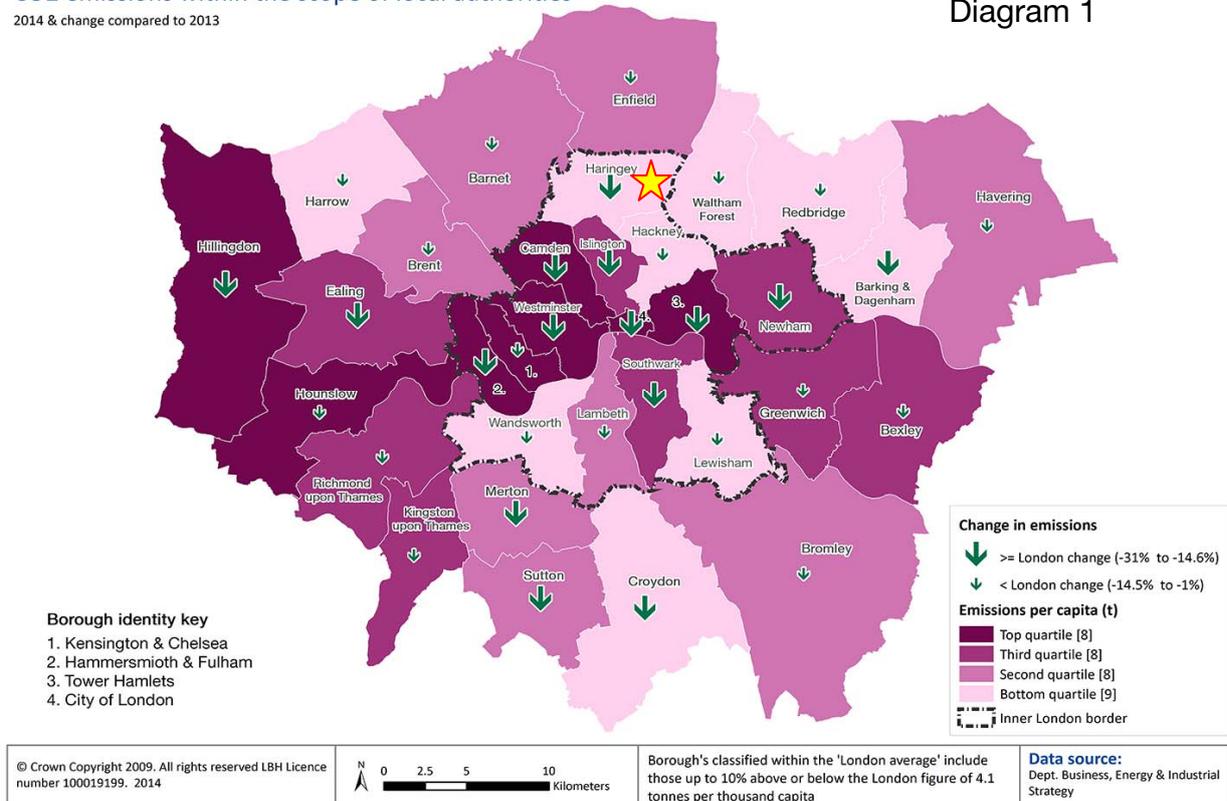
The below map (diagram 1) demonstrates the reduction of carbon emissions per borough between 2013 and 2014 in relation to one another. The larger arrows signify a greater reduction in carbon emissions (between -31% to -14.6%) and the smaller arrows resembles a lesser reduction (between -14.5% to -1%). The map also signifies what quartile each borough falls into depending on how much carbon per capita they produced between 2013 and 2014. As Haringey, highlighted by the yellow star, has a large arrow there has been a significant decrease in CO₂

emissions relative to the Greater London during this year. Additionally, Haringey is one of 9 boroughs with the lowest per capita carbon emissions within London.

CO2 emissions within the scope of local authorities

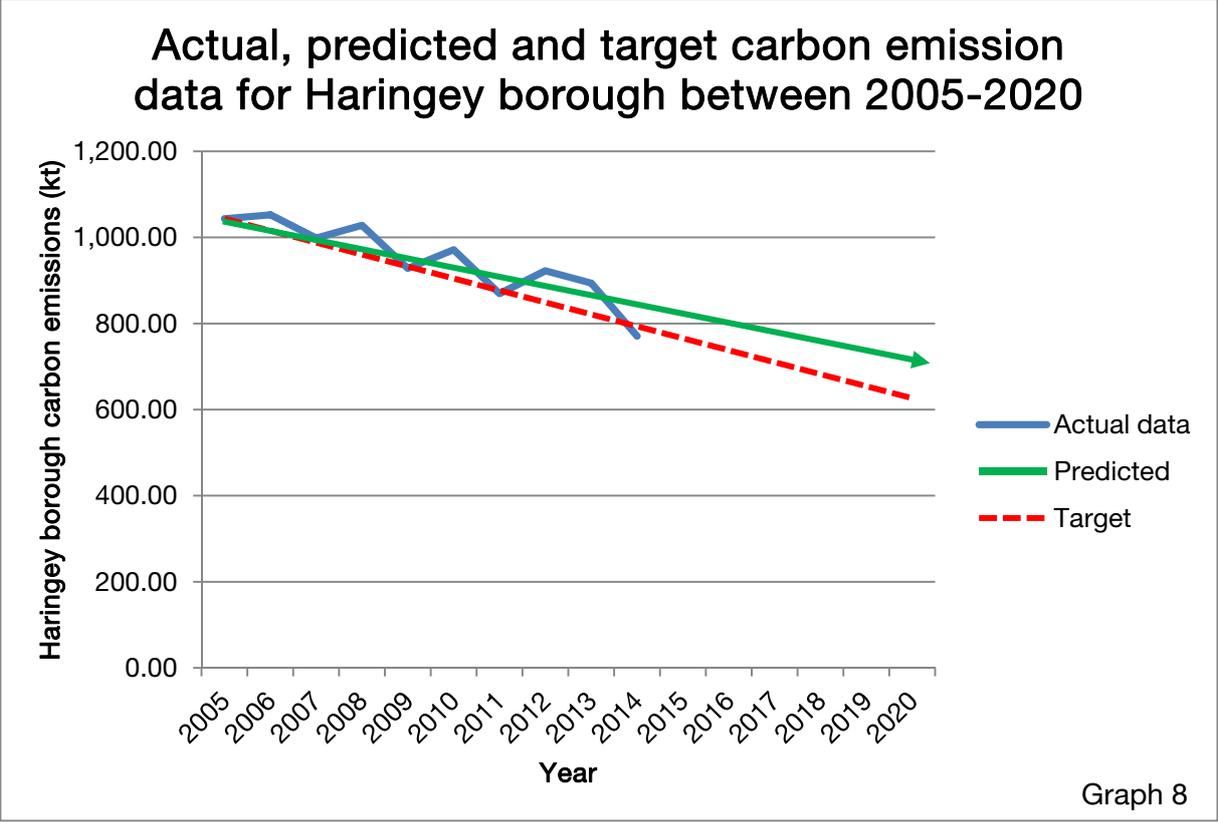
2014 & change compared to 2013

Diagram 1



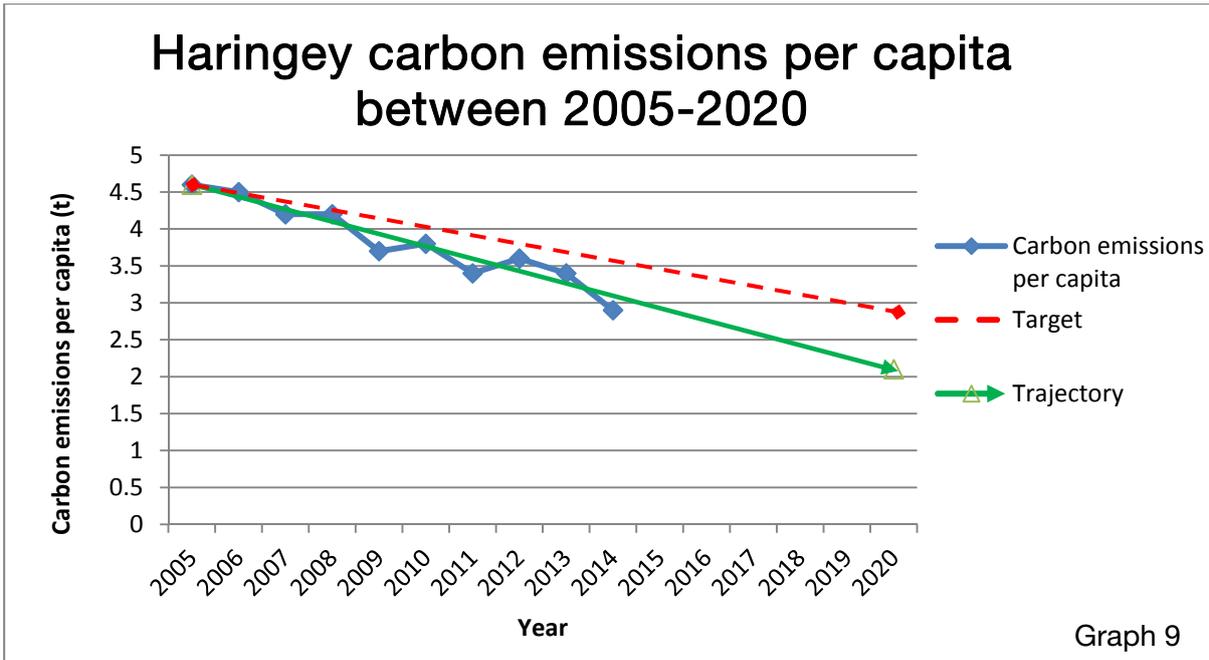
Haringey borough's annual progress

To assess whether Haringey will achieve the 40:20 target, graph 8 has been drawn to exhibit its progress from 2005-2014. The blue line demonstrates the current carbon emission data from 2005-2014 which shows an overall decline. By analysing the amount of carbon saved during this period, a trajectory can be made for further carbon emission savings.



The green line demonstrates the progress Haringey is predicted to make if the borough continues to reduce carbon emissions at the rate it has done since 2005. The red line provides a guideline for the borough to follow if the 40:20 target is to be achieved. Based on the trajectory, it can be seen that the target of reducing carbon emissions by 40% by 2020 is very challenging at the current rate and, we are likely to reach 27% instead.

It is important to consider population size when discussing carbon emission data as this can significantly impact the overall results. Per capita information on how Haringey residents have decreased their CO₂ from 2005-2014 is demonstrated in graph 9 below.



Graph 9 signifies per capita carbon emission data for Haringey will not only meet the target of 40% less by 2020, but exceed it. The 55% predicted decrease is assuming the efforts made by residents and the council to reduce their carbon footprint will continue.

The influential projects and schemes implemented to reduce CO₂ emissions within Haringey provide a benchmark or platform for additional developments to take place to reduce carbon emissions even further. Those that have taken place between 2015 and 2016 are outlined below.

Key projects since 2015

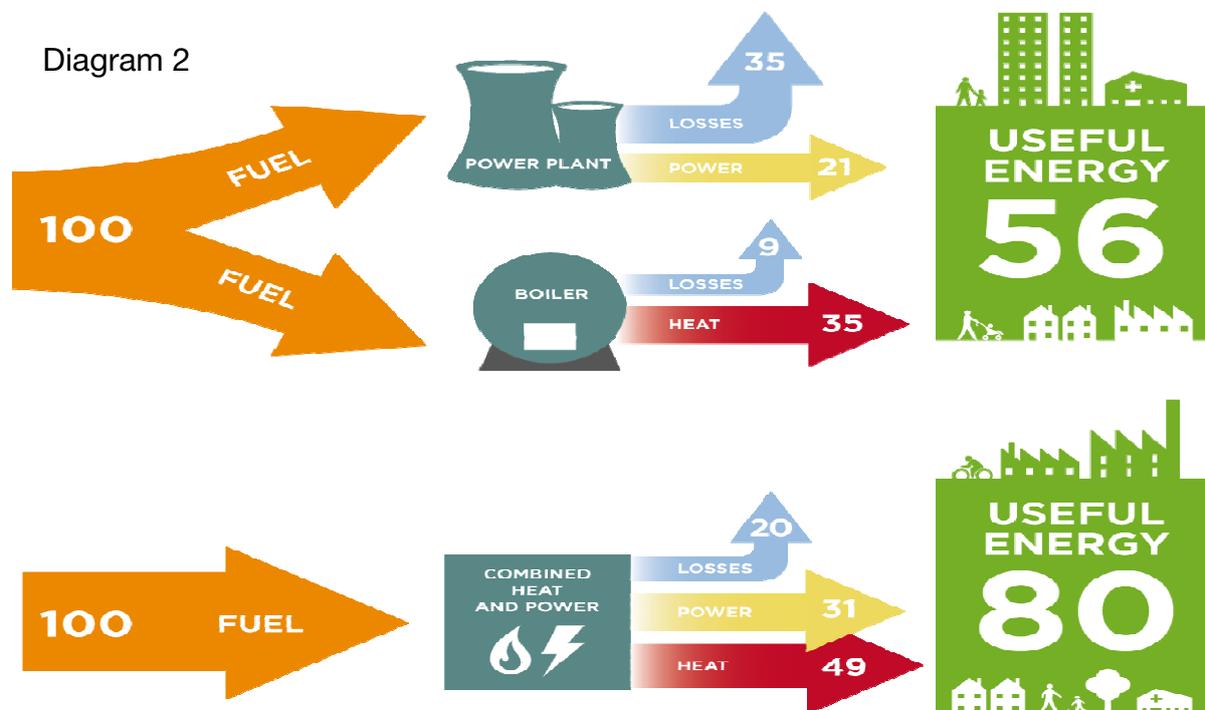
There have been many projects, schemes and organisations that worked both independently and as a multi-agency to reduce Haringey’s carbon emissions within the last year. Below are some key ones that have significantly contributed to the aim of reducing the borough’s carbon footprint.

Decentralised Energy

Haringey Council's bid to reduce CO2 within the borough has resulted in the uptake of decentralised energy. Centralised energy is the main source of energy provision for the UK and is inefficient and costly to residents and businesses⁷.

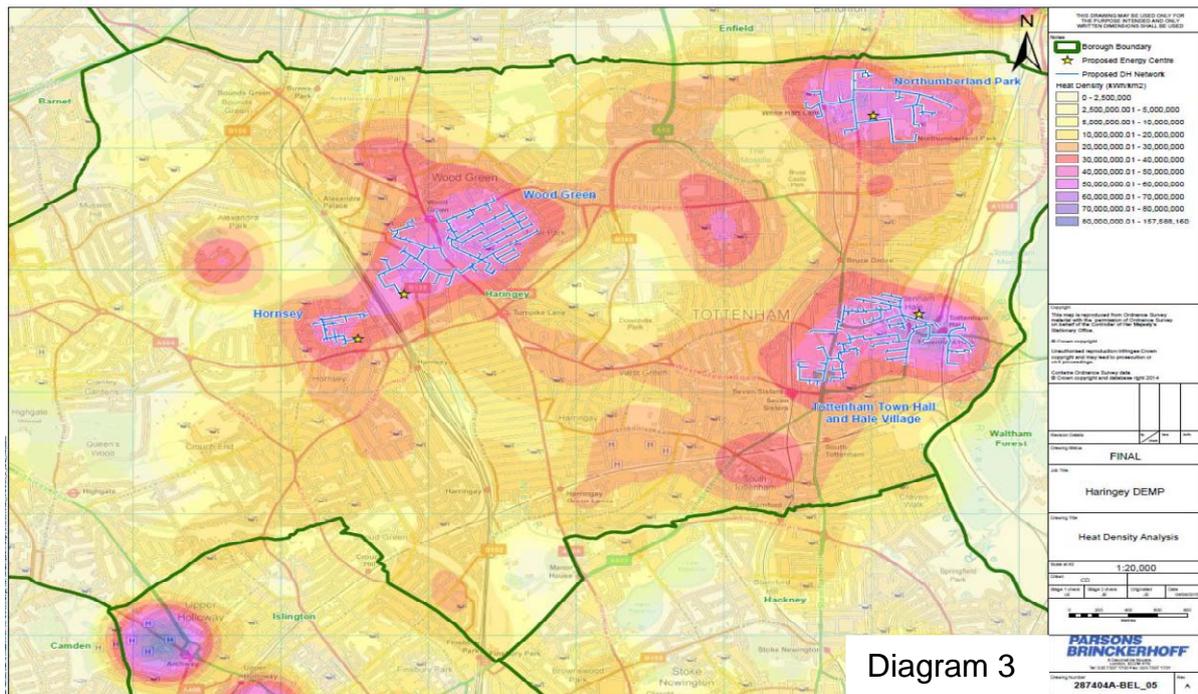
The council proposes a new system, District Energy Network (DEN), to be adopted. These networks run on 'Combined Heat and Power' (CHP) which integrates the production of usable heat and power (electricity), in one single, efficient process. These also operate at a local level ensuring increased security of supply and a reduction in energy transmission losses. Conventional methods of generating electricity wastes vast amounts of heat, losing up to two thirds of the overall energy consumed.

Diagram 2⁷ demonstrates the difference in efficiency between the two methods of generating electricity. The DEN distributes heat through a network of insulated pipes and the network is technology agnostic meaning future, innovative and energy efficient heat sources could replace gas CHP.



⁷ The Association for Decentralised Energy 'What is the demand side?' <http://www.theade.co.uk/what-is-the-demand-side-1915.html>

In terms of implementing this energy efficient system within Haringey, borough wide heat mapping (diagram 3) identified 3 decentralised energy opportunity areas in the borough: North Tottenham, Tottenham Hale and Wood Green. The below map was created using heat detection and highlights in pink three areas where there are high level of wasted heat. The council are currently working towards the district energy networks delivery framework.



Smart Homes

Smart Homes was a scheme set up and managed by Haringey Council in 2014 that ran until August 2016 with the aim of tackling energy efficiency across six London boroughs. This project focussed on owner occupiers, the private rented and non-domestic sector as it was estimated that 50% of carbon emissions were a result of energy inefficient building stock.

The DECC awarded £6.5 million to Smart Homes in 2014 which allowed the council to offer residents grants of up to £6,000 for solid wall insulation or £3,000 for other measures such as heating and window upgrades as long as residents provided a minimum of 25% contribution to the total cost.



There were 1,250 energy efficient installation measures installed throughout Haringey, Camden, Islington, Enfield, Hackney and Waltham Forest. A further breakdown of the data shows:

- The private home owner domestic sector received 728 installations
- The private rented sector receiving 450 installations
- The non-domestic sector receiving 72 installations

As a result, lifetime carbon emission savings of the Smart Homes programme was estimated at 42,338 tonnes with an average CO₂ savings per household of 1.02 tonnes. In terms of cost savings over the same period, an estimated £9,226,491 is expected to be saved on household energy bills, amounting to a household annual saving of £222 or 19%. The average annual carbon emissions expected to be saved expected to be 1.05tonnes per household within Haringey borough, amounting to 289.53tonnes overall. Within Haringey the total amount spent on the Smart Homes project is outlined in table 2 below.

	Smart Homes Grant Funding Amount	ECO Funding Amount	Green Deal Finance Contribution	Customer Contribution	VAT	Total Cost inc. VAT	Total ex vat
Haringey	£1,155,000	£39,000	£8,000	£682,000	£139,000	£1,864,000	£1,726,000

Table 2

Case study on Smart Homes

One Haringey resident joined the Smart Homes project to upgrade their end terraced house that was built in 1894 as it was very inefficient to heat. A grant spend with a 25% top-up from the resident amounted to £7,800. The external wall insulation was applied which resulted in improving energy efficiency within the home and reducing energy bills.



We are getting tremendous benefits from it -
Resident

“The actual feel of the house is better”
- Resident

“The External Wall Insulation has made an immense difference, as has the under floor actually. They're both remarkably good changes. I'm really pleased that we did them” - **Resident**

The Smart Homes project was subsequently shortlisted for the Shift (Sustainable Housing Index For Tomorrow) Award - Best Retrofit Project which aims to promote and highlight best practise, provide a route-map for improvement and allow organisations to compare performance against their peers in the Housing sector. The project was also awarded the Green Apple Award this year to commemorate the great progress and success achieved.

Smart Businesses

Smarter Businesses followed the same model as Smarter Homes, however it focussed on local businesses with inefficient buildings instead of residential housing. The target was to retrofit 72 non-domestic properties over 6 different boroughs:



Haringey, Camden, Islington, Enfield, Hackney and Waltham Forest. A total of 68 were completed by the end of the project, 44 of these properties were in Haringey. Data on the amount of cost and energy saved for a sample of businesses in Haringey are set out in table 3 below.

Business name	Location	Retrofit measures installed	Cost and energy benefit
Selby Centre	Selby	LED lighting	Saved approximately £5,800 per year
Mr Klass	Tottenham High Road	LED lighting and new energy efficient heaters	Saved approximately 25% of the energy previously used
Green Rooms	Wood Green	LED lighting and zoned heating and hot water system	Increased SAP rating from an F to a B

Table 3

Quotations from a few have been included below.



“We have been thoroughly enjoying our new lighting and the energy costs reductions that have come as a result.”

“Just to say that one point of feedback from our completion meeting today was how helpful it has been to have your support in enabling the Smart Business Grant.”



“Thank you also for commissioning Retrofit Works who have worked so well with our senior managers to get this project completed on budget and on time.”



“The lighting looks fantastic and has led to very positive feedback from licences, including those who are now interested in seeing further improvements.”



“If you do hear of any more energy efficiency improvements that are possible for non-domestic buildings, do let us know.”

Fuel poverty intervention

From 2015-2016 Haringey Council provided energy efficient measures to those at risk from fuel poverty. Within the last year 15 inefficient boilers were replaced with new combination boilers. Combination boilers are more efficient for households as there is no requirement for hot water storage due to hot water being produced on demand. Energy used to heat an entire cylinder of water is, instead, only used to heat the required amount.

This scheme received funding from central government to not only reduce the carbon emissions for residential dwellings but to increase the quality of life for service users by decreasing the amount of energy used to heat their homes.

Electric cars

One key project Haringey and many other London boroughs are in the process of conducting is to install Electric Vehicle Charging Points (EVCP). This will enable residents to invest in more efficient means of transportation. The Local Implementation Plan (LIP) has set aside £30,000 for the new charging points in 2016/2017.



The Go Ultra Low City Scheme (GULCS) is a consortium of London Borough representatives, Transport for London (TfL) and other organisations that are involved in the installation of EVCP. The scheme was successfully awarded £13 million of funding from Office of Low Emission Vehicles (OLEV) in order to expand London's electric vehicle charging network and Haringey are involved with this.

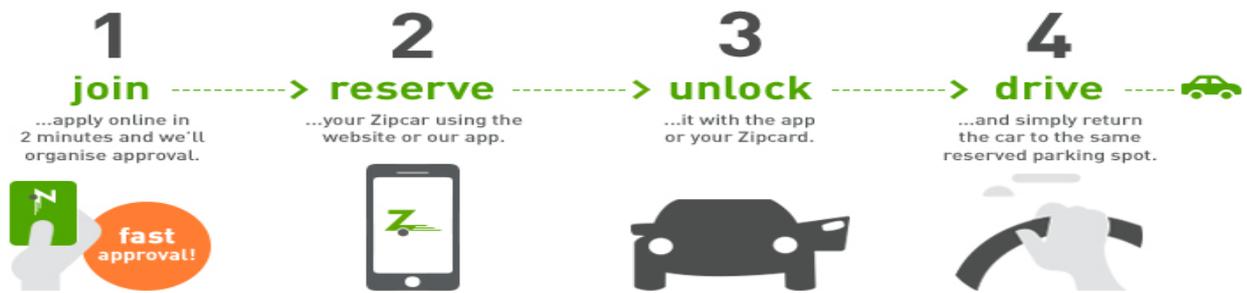
Currently, there is no specific figure set for how many new charging points will be introduced into the borough. The council is in the process of signing the Blue Point London (BPL) variation agreement. BPL will take over responsibility and costs for maintenance, repairs, upgrades and electricity use of the Haringey network, removing the cost burden from the council. BPL will fund the expansion of the Source London charging network in Haringey and plan to install over 6000 charging points across the London network by 2018.

By installing more EVCP in Haringey, the aim is to encourage electric vehicle uptake so that air quality is improved within the borough, health related issues are reduced and carbon emissions and noise pollution are decreased due to the transition from petrol/diesel cars to electric. Already, the numbers of recharging points are increasing and there are now 18 electric vehicle charging points in the Sainsbury's car park in Northumberland Park.



Car clubs

Haringey is expanding the car club network to increase accessibility and choice of car club services for residents. On average one car club car replaces over 20 private cars, reducing carbon, helping to reduce traffic jams and free up parking spaces. Haringey Council intend to utilise the GULCS funds to electrify existing and new car club bays across the borough. The below flow chart demonstrates the process in using a car club.



As part of the new multi-operator networks being introduced in the borough from spring 2017 there is a requirement for operators to have the capability to introduce 100% electric powered or electric hybrid vehicles into their Haringey fleets, in preparation of bay electrification.



Haringey Low Carbon Innovation Hub

The innovation hub was set up to design new technologies that assist the borough in reducing CO₂ emissions. To date, the hub has reviewed in detail over 50 emerging technologies. Fifteen of these have been presented to Hub members for further development. Some of the key, innovative designs are listed below:

- Heat Recovery from Sewers
- gas boiler optimisation
- combined PV/solar thermal collector
- passive ventilation
- pollution reducing pavement

The majority are in active discussion with one or more Members keen to move forward with certain projects in the borough.

Durham University relationship



Haringey Council have formed a relationship with Durham University to help research possible CO₂ reduction strategies for the borough. Research completed within the last year are outlined below.

Examining domestic retrofit systems and governance in Haringey:

Research into the delivery of Smart Homes and Smarter Businesses within Haringey borough was conducted to understand the positive outcomes, potential improvements and the impact these two projects had. The report outlined the importance of retrofitting, improving energy efficiency by reducing energy use.

The research found many positives of the user journey in energy efficiency measures. One positive was providing service users with a good understanding of the complex social issues around retrofitting and user motivations being involved.

However, one significant challenge that arose was installers felt the subsidies provided by Smart Homes and other sources negatively impacted on an 'emerging market' as residents who were prepared to pay for retrofitting before the scheme was introduced then expected free installations. This limitation is argued to have wider implications on Haringey's growing economy.

Assessing energy vulnerability within Haringey:

This research assessed the inefficiencies of community organisations when addressing energy vulnerability within Haringey. The study suggests that the inadequate and inconsistent support from central government has resulted in programmes being constantly shut down due to lack of funding. The reinitiating of similar but new programmes creates difficulties in staying connected with vulnerable people and is inefficient.

A second issue raised is funds made available for energy vulnerable residents tend to be directed to material interventions such as installing new boilers and solid wall insulation rather than supporting the community infrastructure and ensures technologies reach those most in need. As central government steer local authority funding towards implementing these material programmes, often education and community needs are not always met.

Impact Acceleration Account Research:

This research is ongoing and is assessing the different approaches to delivering energy efficiency services for vulnerable households. The project will document the

delivery pathway(s) offered to residents and consider the impact some options may have on the health and wellbeing as well as energy use and costs.

The findings will assist the design of delivery mechanisms for future schemes on delivering energy efficiency services in the borough. Data for how much carbon emissions can be saved by creating more energy efficient homes within Haringey will also be documented.

Planning Policy Sustainability

Planning policy is essential for providing strict guidelines for developers, one of which is designed to reduce carbon emissions, enabling the borough to grow in a sustainable and economical manner. In 2015-2016 Haringey Council secured £40,000 worth of carbon offset payments from four development schemes that did not meet the carbon reduction requirement set by the council. This money will support future carbon reduction projects in the borough.

The Haringey Design Awards showcased some of the best schemes built in the borough and reflected the council's commitment to working with the public and other stakeholders in delivering high quality, sustainable development.



With over 100 nominations across 7 categories that recognise schemes demonstrating exemplary sustainable design and construction techniques, the Crouch End Picture House created by Architects Panter Hudspith in conjunction with Picturehouse Cinemas Ltd. won the Best Green Design category. The 1950s factory and office building was converted into an art house cinema and included a wide range of sustainability features such as a unique pipe system which enables excess heat generated from cinema equipment (such as projectors) to be used to heat other parts of the building.



Other notable schemes recognised with commendations were:

- *Albion Knitting Factory by Floyd & Field Ltd* – A new high tech knitting factory bringing cutting edge textile manufacturing to Haringey
- *Lodge by Cachado and Muna Dawoodi* – A residential development including techniques for passive and sustainable design
- *Lordship Rec Ecohub by Anne Thorne Architects* – A centrepiece for the historic Lordship Recreation Ground designed to exemplary sustainable standards
- *Passivhaus by Metropolitan and Anne Thorne Architects* – A Passivehaus-inspired refurbishment of an Edwardian terraced property.

Council corporate CO2 emissions

A number of local schools have participated in a project to install solar panels over the last few years and in 2015-2016 two schools estimated a potential yield of 36,901kWh combined from the installations. The council now has 43 solar

installations of over 2,200 panels, after another 5 installations were added at the end of 2015. These now have the ability to generate approximately 537,000kWh of electricity for the council.

The project has been successful with energy savings helping to achieve the council target of reducing emissions 40% by 2015/16. It will further support the council's new Corporate Plan objective of a further 10% reduction by 2018.

In 2015 solar panels were installed on Tetherdown School, Haringey borough, achieving an annual electric consumption saving of 28,916 kWh and an annual cost saving of £2,099.19 (a 14% decrease).



Zero Carbon by 2050 Commission

In April 2016, Haringey Council commissioned a panel of experts to work alongside the council with the aim of helping the borough achieve zero carbon emissions by 2050 and improve the borough's environmental performance. This panel has a range of skills and backgrounds, including public bodies, developers, building designers, academics, engineers, and local residents. Following discussions and site visits around the borough, the panel will report back to the council in late 2016.

This report will advise the council on how to improve schemes and deliver environmentally sustainable and socially inclusive regeneration plans for the 21st century. This will include case studies of best practice from which the council can visit and learn from.

Smarter Travel

Funding for community projects that help to reduce carbon emissions is available within Haringey provided by TFL. The Active Travel Community Projects that were successful in their application for 2016 grants for active travel projects are listed in table 4 overleaf:

Group Name	Project	Main Outputs
Living Under One Sun (LUOS)	Cycling for healthier and closer communities	Cycling and walking sessions and bicycle maintenance
Selby Trust	Green Wheels	Family bicycle training classes, bicycle maintenance classes and local rides and walks
St Michael's Church	Bike Loan Scheme	Providing bikes for hire for parishioners and church attendees.
Step by Step	Get Set Go	Enabling up to 24 disabled children to cycle to and from school, and Sunday cycle sessions.
The Rockstone Community Foundation	Cycling Project	Bike maintenance workshop and cycling activities.
Markfield Project	Markfield Travel Training Scheme	Offering travel training by expert trainers, plus leading 18 group walks
Tottenham Hotspur Foundation	Cycle Fun	Weekly rides to encourage vulnerable local people to overcome personal difficulties relating to mental health, addictions etc.
Parents Forum Resource Group	Walking and promotion	8 weeks walking and talking sessions for 23 - 30 people.
Friends of Lordship Rec	Haringey Walking Weekend	Creating a book of Haringey Walks and marketing materials aiming at 5000 participants in the October walking weekend.
Table 4		

Case study on Smarter Travel

Smarter Travel organised the council's first cycling conference to help Haringey become one of the most cycling and pedestrian friendly boroughs in London. Attended by nearly 150 delegates, the conference was a great success with a host of local, national and international speakers including:

- *Marianne Weinreich, Head of Mobility*
- *President of the Cycling Embassy of Denmark*
- *VEKSØ, Denmark*

"It was an excellent event with good residents' participation and excellent speakers" - Catherine

"A great conference, there were some really useful presentations" - David Shannon,

"Thank you for having me speak at the Haringey Cycling Conference, I really enjoyed it" - Dr Rachel Carey, UCL



Personal Travel Planning

Since June 2016, a team of Travel Advisors have been placed in the Seven Sisters and Tottenham Green neighbourhoods as well as attending events in Tottenham Hale and St Ann's in order to provide free travel advice and planning for local residents until October 2016. The Travel Advisors spent time talking about the different options for getting around the city,

On average, a four mile trip in London takes:

- **40** Minutes by car
- **30** Minutes by public transport
- **22 Minutes by bike!**

working out a personalised travel plan and providing you with information on walking, cycling, public transport, car clubs and efficient driving techniques to help residents reduce their carbon footprint.



The aim of this project is to contact up to **5,000** residents and encourage them to consider the full range of travel options within London and specifically Haringey, in order to decrease fuel bills, improve people's health, reduce congestion within the borough as more people will be cycling or walking as well as creating a less polluted environment.

A follow-up survey revealed that **23%** of Haringey participants and **13%** of St Ann's participants provided with travel advice had changed one or more of their regular journeys to a sustainable mode in the past two months.



40:20 Climate Change Forum

The 40:20 initiative was introduced in 2009 when Haringey Council committed to reducing CO2 emissions by 40% before 2020 - the first local authority to do so. This initiative is co-owned by the council and the community. In 2015, the partnership awarded a total of £3,969.50 to *two community projects* that focussed on ways to reduce carbon emissions within Haringey. These are community led schemes that are owned and delivered by Haringey residents.

The Edible Landscapes Project – Were given a grant of £1069.50 to test the suitability for growing food crops in their garden and found elevated levels of lead and other metals in the soil. As a result, cleaner soil was imported so that growing local produce can commence as well as seeking to put in place raised beds to solve this problem. If successful, this project could grow produce that can be sold locally in salad bags. The benefits of doing so will result in preserved and enhanced soil

which is proven to be very useful for the environment as well as reducing CO₂ emissions.

The JAN Trust – Were awarded a grant of £2,900 to deliver energy efficiency workshops for Black and Minority Ethnicity (BAME) women so that more Haringey residents can be more informed on how to reduce the borough’s carbon emissions. The feedback regarding these workshops was that there appeared to be a lack of basic knowledge about energy efficiency amongst the target BAME women audience. The workshops were very well received and people were keen to implement changes in their own homes as well as to talk to others in their community regarding these changes.

Divestment

Towards the end of 2015, a borough wide campaign was launched to request the council move its pension funds and other investments away from fossil fuels. After reviewing the petition and all options in January 2016 the Pensions Committee agreed to move 33% of its share portfolio into a low-carbon indexed fund. This low-carbon index fund had been shown to offer a greater financial reward to investors. This new fund will continue to be monitored and assessed to compare its performance against other funds. And if a business case can be demonstrated the remaining investment portfolio will reviewed about whether to invest further into this low carbon index.

Homes for Haringey

Homes for Haringey is an Arms Length Management Organisation (ALMO) set up in April 2006, to manage Haringey’s council housing. There are approximated to be 16,000 tenants and 4,500 leasehold properties managed by the organisation. Between 2015-16 1,300 boilers were replaced to increase energy efficiency within the housing stock and decrease carbon emissions.

Community engagement projects

Sustainable Haringey Is a network of local volunteers set up in 2007 to tackle environmental issues within Haringey such as



recycling, sustainable energy policies and local production of food to name just a few. Within the last year Sustainable Haringey along with another sustainability group EN10ERGY organised several projects that helped reduce the borough's carbon footprint. They arranged visits to the Eco Park in order to demonstrate to residents how residual waste is incinerated to make electricity and garden and food waste made into compost. Bi-annual compost free giveaways were set up so residents could meet other like-minded individuals, swap gardening advice and take home some eco-mud! In addition, Muswell Hill Sustainability Group set up a stall at the Compost Giveaways to publicise their energy-saving projects.

<ul style="list-style-type: none"> •100 local shareholders that generates electricity from solar panels on the roofs •The money that the society earns from its Feed in Tariff is used to carry out carbon reduction projects in the N10 postcode •Green-a-Neighbour project- Aimed to reach people who had not previously got involved in energy saving projects •Hot Tips for Warm Homes - Event to help residents be more energy efficient 	<ul style="list-style-type: none"> •Part of the Sustainable Haringey network and brings together groups in the Borough to promote local food growing. • Organised two seed swaps at the Old School House on Tottenham Green •This year we have had plant stalls at various local events including Tottenham Green Sunday market, and Lordship Rec produce show
<p>EN10ERGY</p> 	<p>Growing in Haringey</p> 
<ul style="list-style-type: none"> •Organised information events to inform residents on home energy saving ideas •Open home events allowed attendees to see how local energy-efficient homes are made •Outreach programmes such as festival stalls helped to raise MHSG profile in community •MHSG members took part in the Climate Change March that took place before the Paris Summit •Organised a film night showing film on climate change and had over 30 attendees 	<ul style="list-style-type: none"> •An international network of communities that are looking beyond the fossil fuel age, to build resilient, sustainable, low carbon communities. •Hosted film events focussing on sustainability with speakers and discussion over 2 months •Holds an Annual Apple Day event with over 200 guests to celebrate fruit harvest •Worked with other sustainable groups to lobby the Council to divest its pension fund from fossil fuel investments
<p>Muswell Hill Sustainability Group</p> 	<p>Transition Crouch End</p> 

Future plans

Decentralised Energy

The ongoing project to decentralise energy from the national grid and make Haringey borough more energy efficient will continue into 2017 as well as promote other opportunities when they arise. The current plan is to deliver several district energy networks alongside the growth and regeneration agenda.

Smart Homes

There are currently no future plans for Smart Homes due to a lack of funding. However, during 2016-2017 there will be a review of the learning outcomes and successes of the project in order to build a business plan for a similar, self-funded development scheme.

Smart Businesses

Smart Businesses are currently working with the Carbon Trust to promote their grant scheme, the Green Business Fund. They are also co-hosting alongside Smart2Act workshops for Small to Medium sized Enterprises (SMEs) and young businesses (less than 5 years old) to raise awareness of ways to be more energy efficient.

Additionally, they are looking to develop a new scheme around the Private Rented (Non-Domestic) Minimum Energy Performance Regulations to encourage landlords to retrofit their properties and comply with legislation.

Fuel Poverty

There are currently 12 application approvals for new combination boilers to be installed in homes where fuel deprived residents live and an estimated 30 more properties are being reviewed as potential sites for retrofitting.

Transport Infrastructure

Haringey Council are awaiting confirmation on their Neighbourhood of the Future (NoF) application submitted to Transport for London (TFL) regarding funding for a number of projects that are listed below:

- Increase the number of electric vehicles in Car Clubs in Wood Green
- Offering electric vehicles trials to businesses and residents
- Business Engagement on electric vehicles
- Planning Guidance through the Area Action Plan to increase recharging infrastructure
- Rapid Taxi Rank
- Work with the Driving School to increase knowledge of electric vehicles
- Physical Regeneration Project which will integrate wider environmental messages (Air Quality / Carbon) to electric vehicles recharging

An announcement should be made later this year as to whether these projects will be implemented within the borough.

Innovation Hub

The majority of the technologies discussed previously are in active discussion with members of the Hub in order to take these projects forward. Suez Environment and Thames Water are liaising with the Hub regarding the development of sewer heat recovery units and further updates on these discussions will be provided early next year.

Durham University

Haringey Council's relationship with Durham University is ongoing and the proposed research into the way people access energy efficiency advice and the easiest method to do is due to be carried out. This will include looking at how to access advice, either through phoning up the council directly or contacting the Energy Saving Trust, which is the easiest method and what is the pathway from first contact through measures being installed. The outcome of this research is expected to be published in 2017.

Planning Policy and Sustainability

Haringey's emerging Local Plan documents (including the Alterations to Strategic Policies, Development Management, Site Allocations and Tottenham Area Action Plan) were submitted to the Secretary of State for independent examination in May 2016. Examination hearings were subsequently conducted during August and September. Subject to being found sound by the Planning Inspector, it is expected that these Local Plan documents will be adopted by the council in 2017.

The Council are currently preparing two Area Action Plans (AAPs) for Tottenham and Wood Green which will form part of the council's Local Plan. These documents will set out further detailed planning policy requirements and guidance for identified strategic sites which will help facilitate the development of Decentralised Energy networks within the Borough. The Plans are being informed by Haringey's Decentralised Energy Master plan.

Reducing corporate CO2

Following policy changes regarding the feed-in-tariffs (FITs) of solar panels, there are currently no plans to widen the programme at this time.

In 2017 it is proposed that the council will undertake a review of its corporate estate to deliver further carbon reduction. This includes developing schools programmes looking at energy efficiency measures. The number of schools involved with this review will be determined toward the end of 2016.

Smarter Travel

During 2017 the drafting of Haringey's new transport Strategy and accompanying cycling, walking and public transport strategies will focus on delivering sustainable transport schemes which deliver low carbon transport schemes.

One main objective for future projects is to encourage the use of low carbon transport alternatives to ensure the transport sector is making the necessary contribution to achieving a 40% carbon reduction by 2020 and a 60% reduction by 2025 within Haringey.

40:20 future plans

The 2016-17 grants programme is funding a solar energy and energy efficiency workshops programme at the Selby Centre and a project to enhance domestic recycling in the Noel Park area, so reducing emissions from waste and from associated vehicle movements.

Other key community engagement projects

The Edible Landscape Project

The project is now seeking to put in place raised beds with imported clean soil to solve the problem of high levels of lead in the soil making the area unfit for growing produce.

For further information on the projects or organisations discussed in this report please see the list of contacts in table 5.

List of contacts

Organisation/Group/Project	Name of department and contact	Contact details
Decentralised Energy	Carbon Management Team – Simone Sullivan	Simone.Sullivan@haringey.gov.uk
Smart Homes	Carbon Management Team – Sadhbh Ni Hogain	Sadhbh.NiHogain@haringey.gov.uk
Smart Businesses	Carbon Management Team – Gill Cox	Gillian.Cox@haringey.gov.uk
Fuel Poverty Intervention	Carbon Management Team – John Mathers	John.Mathers@haringey.gov.uk
Electric car charging points	Carbon Management Team -	Joe.Baker@haringey.gov.uk
Car Clubs	Drive Now – City Car Club – Zip Car	https://uk.drive-now.com/ https://www.enterprisecarclub.co.uk/ http://www.zipcar.co.uk/
Innovation Hub	Carbon Management Team – Christopher Lee	Christopher.Lee@haringey.gov.uk
Durham University Research	Carbon Management Team – Christopher Lee	Christopher.Lee@haringey.gov.uk
Planning Policy and Sustainability	Planning Policy – Erik Nilsen	Erik.nilsen@haringey.gov.uk
Corporate Carbon Management	Carbon Management Team – Kamar Zaman	Kamar.Zaman@haringey.gov.uk
Zero Carbon Developments	Carbon Management Team – Joe Baker	Joe.Baker@haringey.gov.uk
Smarter Travel/Personal Travel Planning	Traffic Management – Denise Adolphe	Denise.Adolphe@haringey.gov.uk
Edible Landscape Project/JAN Trust	Community resident – Quentin Given	Quentin.Given@btinternet.com
40:20 initiative grants	Haringey 40:20	http://haringey4020.org.uk/offers-grants/community-fund/hcf4020@gmail.com
Homes for Haringey	Homes for Haringey – Jacinta Walters	Jacinta.Walters@homesforharingey.org
Sustainable Haringey	Community Resident - Joyce Rosser	JRosser@gmail.com
Growing in Haringey/EN10ERGY/Transition in Crouch End	Community Resident – Pamela Harling	PJHarling@hotmail.com
Muswell Hill Sustainability Group	Community Resident – Mary Blake	Mary@MHSGroup.org

Table 5