

London Borough of Haringey
Zero Carbon Haringey
Direction of Travel

Issue | 18 March 2018

This report takes into account the particular instructions and requirements of our client.

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1 Introduction

Climate change is one of the most pressing concerns of our time, as we observe increasing frequency and severity of extreme weather events and disruption of natural systems. These changes are being felt through short term events such as droughts, flooding, heat waves and storm surges as well as longer term pressures including sea level rise and loss of productive land and fisheries. These changes will affect us all, and will become more severe over the course of this century unless concerted action is taken at every level of government and society.

In order to keep the global average temperature to within a 2°C increase over pre-industrial levels – and thereby avoid catastrophic climate change – radical reductions will be needed in net emissions of carbon dioxide and other greenhouse gas emissions. This target is incorporated into the Paris Agreement of the United Nations Framework Convention on Climate Change, which was ratified by 174 nations (including the UK) in November 2016.

Haringey was one of the first councils in London to respond to the climate challenge with a commitment in 2009 to reduce CO₂ emissions in the borough by 40% by the year 2020, against a 2005 baseline.

Haringey's annual carbon reports show that the borough's emissions have been falling year-on-year, and describe how community actions and council-led programmes have contributed to this success. However, for the council to make its fair contribution to the Paris Agreement, its ambitions must be greater. This greater ambition is reflected in the 'Haringey Zero by 2050' initiative which was launched in October 2017.

This is a big step up from previous targets and to achieve it the council will need support and engagement from every part of the community, including council members and staff, businesses, residents and community organisations.

Haringey should see this initiative as an opportunity not only to reduce emissions, but also as an opportunity to improve living standards through new job opportunities, economic growth, improved air quality, better health, and lower energy bills.

1.1 Direction of Travel report

This Direction of Travel report presents the results of Stage 1 of the Zero Carbon Haringey project. It describes Haringey's journey so far, the benefits of action, a vision for 2050 and a plan for achieving this vision.

This report is accompanied by a separate Stage 1 Technical Report, which provides evidence in support the proposed priority actions outlined in this report.

1.2 Feedback on Stage 1

Together this Direction of Travel report and the Stage 1 Technical Report are intended to be used to stimulate discussion and obtain feedback from Haringey Council staff and local stakeholders on the Council's opportunities, challenges and priorities to meet its zero carbon commitment. This process of engagement will inform a set of decisions by the Council to inform how the full Zero 2050 Plan is developed in Stage 2.

Feedback is strongly encouraged on all aspects of the work to date and proposed priority areas. Feedback is particularly sought on the following questions:

1. Is this the right level of ambition?
2. What actions should be prioritised? What is most important or urgent?
3. What, if anything, is missing?
4. What is the best way to deliver the plan? Should direct action be prioritised, setting regulation and policy, enabling grassroots action or working with institutional partners and large organisations?

2 The journey so far

In 2009, in response to community campaigns, Haringey Borough Council launched the 40:20 initiative. In the same year, Muswell Hill low carbon zone (LCZ) was set up with support of the local community, with funding awarded by the Mayor of London.

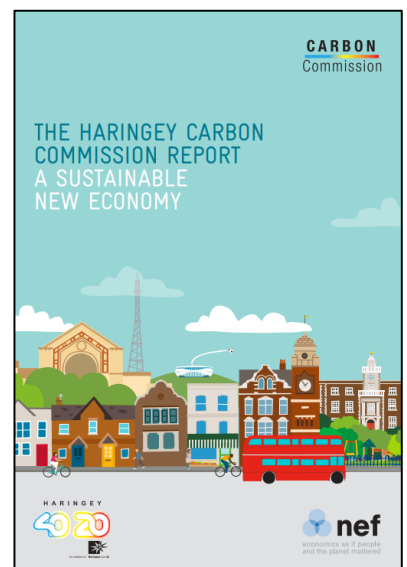


In 2011, Haringey published its first annual carbon report and commissioned the 40:20 Carbon Commission to develop a strategy to deliver the required 40% cut in CO₂ emissions by 2020.

The Carbon Commission's report was published in 2012, and provided a template for following years. In 2013 a 'one year on' follow-up report captured progress made against each target in the first year, and described the required next steps. Also in 2013, the Retrofitworks co-operative was established. To date, the co-operative has carried out more than £1million worth of retrofit work and continues to set an example of the kind of action and engagement that is possible with

the right strategy, business model, and local skills and support.

Between 2005 and 2015, emissions in the borough have decreased by 29%. If this trend continues the 40% reduction target will be met by 2020 (Figure 1). Actions since adopting carbon emission targets have been wide-ranging and ambitious, addressing the key emission sectors and engaging with a variety of stakeholders.



The borough’s progress on emissions should be seen in the context of rising population, which shows that per capita emissions have been falling even more sharply than the overall emissions trajectory (Figure 2).

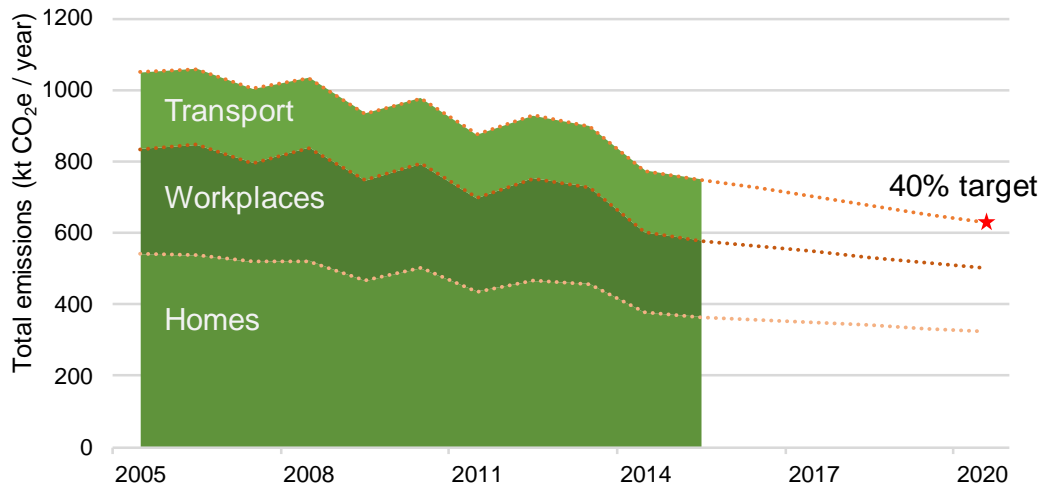


Figure 1 Haringey Annual CO₂ emissions, 2005-2015, with indicative pathways to meet the 40:20 Target (source: BEIS).

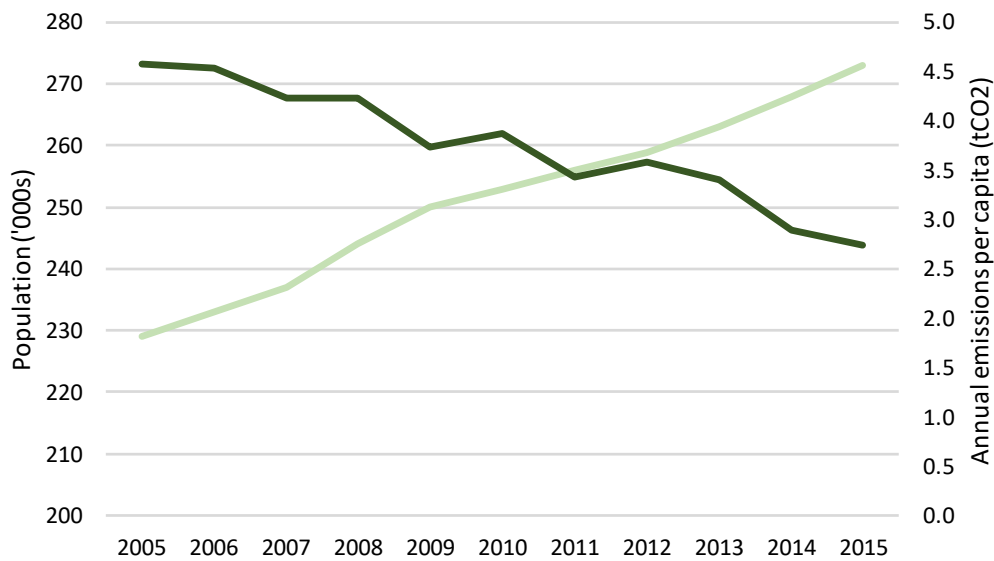
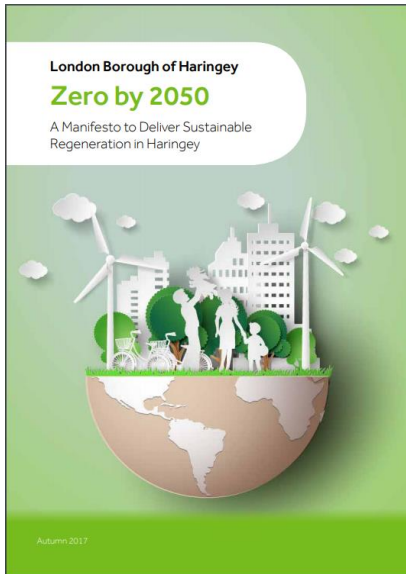


Figure 2 Haringey emissions compared to population growth 2005 - 2015

2.1 Recent developments

In the five years since the Carbon Commission’s original report, the social, political and economic situation has moved on. The Paris agreement in 2016 was a significant moment in history with regard to climate change: 174 states have ratified this agreement, committing to keeping global average temperature rise to below 2°C more than pre-industrial levels.

In 2016, the UK voted to leave the European Union in a referendum which has increased uncertainty in many areas of national decision making and leadership, including action on climate change.



Alongside these national and international events, local authority budget cuts are biting. The borough has seen government funding reduced in real terms by 40% since 2010. This represents a significant challenge, but also an opportunity to identify actions that will make financial as well as emission savings.

Whilst these political and financial challenges continue, at the same time local and regional climate action continues. In 2017, the Mayor of London announced his commitment to developing a plan for London to become a zero carbon city by 2050, in line with the commitments made at a national level to keep warming below 1.5°C.

Haringey is committed to working with communities and partners, both in the borough and the wider city, to bring these ambitious plans to life.

3 Benefits of action

3.1 Introduction

Action to reduce carbon emissions is important for its own sake but also generates concurrent benefits such as improvements to the local environmental, and social and economic benefits. These so-called ‘co-benefits’ are often clear. For example, a switch to zero emission vehicles will deliver benefits for local air quality and health. However, there are many other benefits that are less obvious, or less well understood. The key opportunities are listed below.

3.2 Jobs and the local economy

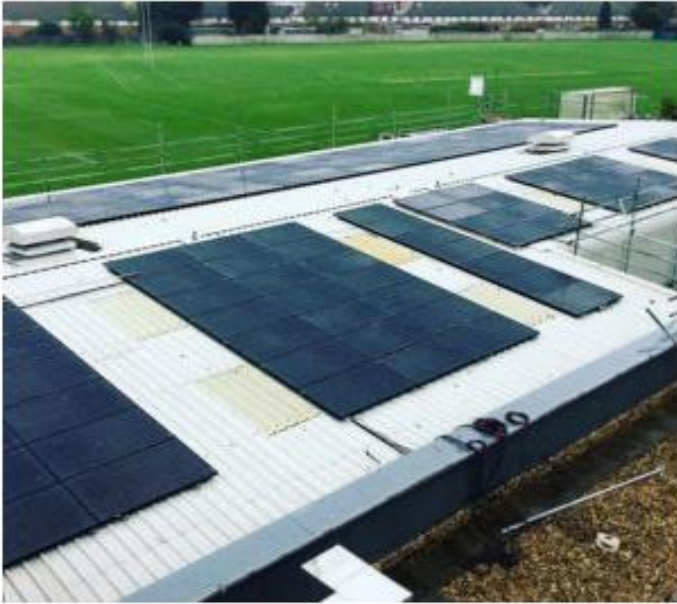
Climate action – whether it be installation of photovoltaic (PV) panels or low-carbon heating systems, or building fabric retrofit works – needs skilled people and creates local job opportunities. Supply chains that support these markets offer further opportunities for the economy to grow. The government’s Clean Growth Strategy indicates that the low carbon economy could grow four times faster than the rest of the economy over the next twelve years.¹ Haringey should encourage steady growth of these markets by creating a stable local business environment through policies and programmes put in place.

¹ <https://www.gov.uk/government/publications/clean-growth-strategy>

en10ergy share offer solar panels

In May 2017, local community energy generator, en10ergy, launched a community share offer to fund the installation of 150 solar panels on the roof of Woodside High School.

The share offer was very successful, with the target of £95,000 being raised in less than five weeks.



Since installation in November, the panels have generated 2,500kWh of electricity, sold at a discounted price to the school. This saves the school £1400/yr, and en10ergy uses the income to pay back shareholders and re-invest in other local projects.

The panels will save around 34tCO₂ each year.

In Haringey, local initiatives such as Retrofitworks have demonstrated how successfully the co-benefits of climate action on jobs and the economy can be realised. The council's Green Innovation Fund has provided grants to projects such as en10ergy, an innovative social enterprise set up by Muswell Hill Sustainability Group. En10ergy not only promotes and invests in local renewable energy generation but also negotiates bulk deals for energy saving measures and renewables through a low carbon buying group, and raises awareness through workshops, information sessions and household assistance and auditing programmes.

3.3 Air quality

Since 2004, the legal limit for air pollution has been breached each year in London before the end of the first week of January. Air pollution causes over 9,000 premature deaths in the city each year. The Mayor of London has referred to air quality as 'the most pressing environmental threat to the future health of London', and Haringey council have been tackling the issue across the borough, in particular around schools.

Many of the actions set out in planning for a zero carbon borough by

2050 will support improved air quality. For example, the electrification of transport, encouraging people to walk, cycle and use public transport instead of private vehicles, and encouraging car-free developments through planning considerations will all contribute to reduced tailpipe emissions.

3.4 Fuel poverty

Energy affordability is a real issue in the borough and this affects the health and well-being of many of its most vulnerable residents. The number of fuel poor homes in Haringey was estimated in 2015 to be 12,400,² representing around 12% of homes in the borough. In reducing emissions from buildings, an important co-

² <http://www.haringey.gov.uk/housing/housing-advice/home-heat-loss/energy-efficiency/fuel-poverty>

benefit of improved health and comfort will be realised if households in fuel poverty are prioritised. Energy efficiency measures also deliver increased comfort and decreased fuel bills for many residents. This will help the council deliver on promises in their corporate plan, while also reducing local health care costs from conditions associated with cold homes, and contributing to the success of the Mayor's 'Fuel Poverty Action Plan for London'³

4 2050 vision

4.1 Introduction

What could a zero carbon Haringey be like in 2050? We have worked to develop a technically achievable trajectory in emissions. This is shown in Figure 3, and the detail behind this work is covered in more depth in the accompanying Stage 1 Technical Report.

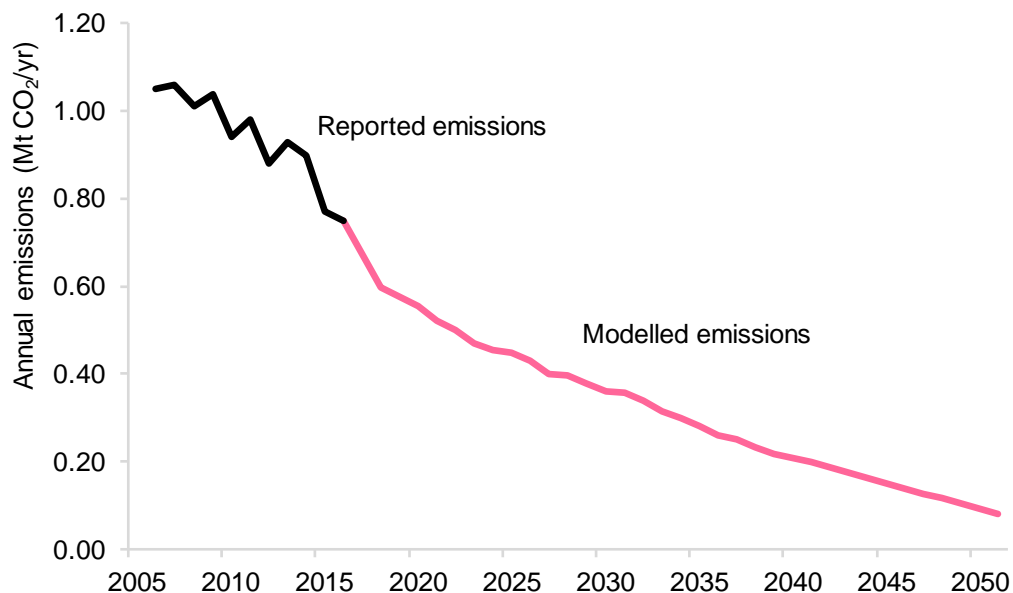


Figure 3 Haringey's pathway towards a zero carbon 2050; the black line shows historical emissions and the pink shows what could be achieved with the level of ambition set out in this report.

A vision for 2050 is described below for each of the major emission sectors. The subsequent sections of the paper discuss options for delivering these visions.



4.2 Energy supply

In 2050, most national energy supplies are from renewable sources. A proportion of this is locally generated, through solar rooftops, reservoir arrays and community owned wind turbines in the borough.

³ https://www.london.gov.uk/sites/default/files/draft_fuel_poverty_action_plan.pdf

With better insulated buildings, heating demand is reduced but still makes up the majority of the borough's energy demand. A move away from gas heating

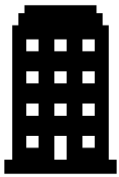
by replacing boilers with heat pumps, or connecting to district heating networks has significantly reduced emissions in the borough.

Electricity comprises a larger proportion of energy used in the borough due to the electrification of transport and heating systems. The trajectory relies on decarbonisation of the national grid as predicted and set out by the government to reduce the carbon emissions associated with electricity consumption.

Residents, businesses and the public sector can speed up this transition in 2018 by switching to green tariffs.

Energy supply goals

- Renewables in the borough contribute to nationwide decarbonisation, energy storage options increase borough net self sufficiency
- Heat pumps have replaced boilers in majority of homes and businesses
- Heat networks allow transfer of waste heat for heating buildings



4.3 Buildings

In 2018 buildings represented the biggest opportunity to reduce emissions within the borough. Buildings built since then demonstrate best practice in achieving zero or negative emissions on site, and are designed to allow easy connection to new sources of energy.

Significant retrofit work to improve insulation and glazing has improved the energy efficiency of every existing building in the borough to reduce energy consumption while making homes warmer, more comfortable and cheaper to heat. Smart meters and controls help us all to better understand our energy use, ensuring we use only the energy we need.

Buildings goals

- All existing buildings have been modified to reach EPC C or better.
- New developments are leading examples of zero and negative carbon buildings.
- Switching heating technologies allows for more efficient heating and transition to low-carbon energy sources.

Small businesses have taken advantage of the financial savings offered by measures to reduce emissions, and larger businesses in the borough will be demonstrating nationally leading innovation and foresight in their operations and buildings.

A switch in heating technology to low-carbon systems has reduced supply-side emissions; zero carbon electricity is used to power heat pumps that transfer heat from the air, ground or local water sources into homes, and new district heating networks within the borough provide communities of businesses and residents with cheaper heating and hot water.

Buildings are themselves sources of energy as adoption of rooftop and building integrated PV is widespread, exporting excess renewable energy to the grid and contributing to the national zero carbon ambition.



4.4 Transport

People in Haringey in 2050 enjoy using the dedicated cycling and walking networks throughout the borough and links to other key destinations. The number of journeys made by these active modes of transport has increased several times over since 2018. Pedestrianised zones in key areas allow people to enjoy spending time in the streets and boosts local businesses and the sense of community.

As well as being zero-emission, public transport is reliable, cheap and comfortable and people do not depend on privately owned cars as much. Where vehicles are still present they are all zero-emission, leading to cleaner and quieter streets.

Transport across the city has improved with the arrival of Crossrail 2 connecting key local centres in the borough to east London and beyond, providing important links to city interchanges.

Transport goals

- Walking and cycling are chosen for more than half of all journeys
- Public transport options are fast, cheap and clean
- Electric vehicle charging infrastructure and cheaper technology means most private vehicles on the road are zero emission in 2050.



4.5 Waste

Total waste produced within the borough is lower; much of the material previously viewed as waste is seen as a resource in 2050 and re-used as such. The local economy benefits directly through creation of jobs and the recovery of local resources. Unnecessary disposable packaging is non-existent and where it is necessary, innovations in materials means sustainable, biodegradable packaging is used instead.

Waste goals

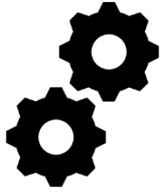
- Everyday products are sold with minimal and sustainable packaging.
- At least 60% of municipal waste is recycled
- Local businesses are leading the way in the local circular economy.

Recycling rates have reached a record high with more than two thirds of municipal waste being separated for recycling. This is achieved through on-street recycling, targeted action for under-performing locations and changes to collection services to facilitate increased recycling rates.

Commercial and industrial sources of waste are better understood and businesses take a leading role in Haringey's circular economy, from the producers and manufacturers who create the products that become waste to the end-users with responsibility for disposal or redirection at end of use.

Residual waste continues to be sent for incineration, producing electricity and heat for the borough, meanwhile food waste and other organic material is sent to an anaerobic digestion facility for energy recovery.

Overall there is reduced waste through reduced consumption of disposable goods, and increased lifespan of durable goods.



4.6 Industry

Industry remains a relatively small, but important proportion of Haringey's local economy. Industry partners are engaged, using their influence and capacity to drive change and maximise efficiency. They act locally to reduce and offset residual emissions and have supported the local community to achieve positive changes in homes and streets as well as the workplace.

Sector-based networks both within and extending beyond the borough boundaries give a focus for emission reduction efforts, knowledge sharing, and development of schemes that offer economy of scale. Such networks have built capacity by improving links between businesses, sharing the responsibility and providing opportunities for collaborative action.

Industry goals

- Sector based networks allow sharing of best practice and collective action
- The influence of key businesses within the borough amplifies the overall transformation

5 How to get there

5.1 Introduction

In the preceding chapter we set out a vision for the borough of Haringey in thirty years' time; in this section we describe how the council can take action to realise this vision.

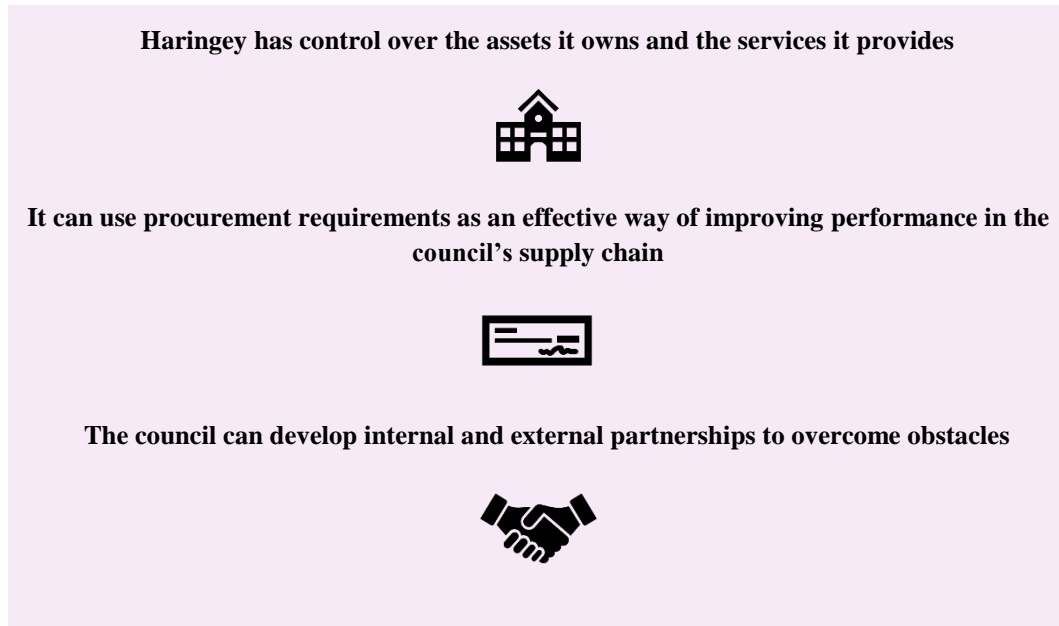
Action for the Council depends greatly on the shape of the powers and influence it holds: for instance, the council can take direct action where it has ownership and responsibility over assets, and it can guide action where it has statutory powers. Where ownership and responsibility rest with others, the council can seek ways to work with its partners and use its ability to mobilise funds enabling organisations to achieve change together.

The chapter is therefore structured to reflect the different routes for council action:

- Direct action
- Shaping decisions through policy
- Working with partners

5.2 Direct action

Haringey council has a number of ways of enabling change in the borough.



As a council, Haringey is directly responsible for its buildings and the services it provides. The council can set requirements for contracted services, licenced activities such as private landlords, and new developments in the borough. Where it cannot act directly, the council can facilitate and influence action through partnerships, and provide funding and technical assistance for the delivery of interventions.

For public buildings, the council can partner with other public services and institutions to collectively procure building improvements using financing facilities that are already available to public sector bodies.

Haringey can make procurement choices that support its carbon emission targets and provide an example for other businesses to follow such as purchasing electric vehicles, purchasing renewable electricity or favouring suppliers with robust energy and waste reduction policies.

The council has developed good relationships with local community groups and organisations; it should maintain and develop these relationships to ensure that benefits from co-operation and collaboration can be realised.

Local councils have responsibility for the maintenance of local roads and public spaces; so Haringey can integrate maintenance and improvement works with plans for improved routes and networks for cycling and walking.

5.3 Shaping decisions through policy

Through policy and pricing structures the council can incentivise positive action that supports their targets.

Haringey can set both planning policies to ensure developers reach the highest possible standards on development sites.



Haringey can shape council charges such as taxes and parking charges to reward low-carbon choices.



The council is already setting variable parking charges to reflect the carbon intensity of vehicles, and this could be extended to provide an even stronger behaviour influence to car owners and drivers. In addition, for new developments the council could consider setting a carbon price that reflects reality and makes zero carbon developments more cost effective. Haringey can consider scalable council tax based on the energy efficiency rating of buildings.

For any action where it creates a policy “stick”, the council should also recognise there is a need to provide balancing “carrot” policies that support and reward the desired behaviour change.

5.4 Working with partners

Partnership working is one of the most important ways Haringey can achieve change in the borough. As a council, it can both engage with others directly as well as facilitate partnership working amongst others in the borough. Haringey already has a strong base of active community groups who have developed successful projects across the borough. The council can use these links and widen its engagement with communities and neighbourhoods in the borough, encouraging independent action as well as gathering opportunities and support for council-led programmes.

Haringey can stimulate and support grassroots awareness and action of residents and community groups, and mobilise enthusiasm for action that already exist within the borough.



The council can set up business forums and explore ways of incentivising change in the non-domestic sector.



It can advocate for action at regional and national level through its relationships with strategic and national partners; providing convincing evidence to enable systemic change



Haringey can seek to engage with the largest landowners and businesses in the borough, who have the potential to achieve the greatest change.

To reduce emissions associated with Haringey workplaces, the council can facilitate sector-based networks to build capacity and resilience amongst businesses, allow sharing of information, experience and best practice, and encourage collective responsibility for the business sector's share of the borough's emissions. Such networks can also provide a platform for collaborative action and opportunities for achieving savings through economies of scale.

It is also important to build and develop links with partners outside of the borough; with neighbouring councils and the GLA, while also working to engage with national government to lobby and influence funding, legislative and policy issues.

5.5 Levers

The challenge Haringey faces in achieving its 2050 zero carbon goal will require the use of every action available to it in the most appropriate and effective way.

The council will need to implement physical and behavioural changes and to achieve these changes it requires 'levers': policies, programmes, campaigns and regulatory requirements, to inform, incentivise and deliver results.

Levers can be categorised by their approach;




- Informative – campaigns, outreach programmes, and education
- Technical assistance – access to free or low-cost technical advice and expertise
- Funding – direct grant funding or low-cost loans, commonly used to fund the capital costs of physical interventions or the operational costs of individual programmes.
- Fiscal measures – levies and charges, tax breaks and discounts can all be ways of stimulating behaviour change and action.
- Grass-roots action – action taken at an individual and community group level

- Contracting mechanisms – concepts like ‘pay back as you save’, ‘energy as a service’ contracting or general conditional arrangements with contract providers
- Regulation and enforcement – often seen as the strongest or most effective lever for change. Used with care and against a backdrop of supportive levers, regulation can be very effective.

5.6 Route map

Based on analysis reported in the Stage 1 Technical Report, the following priority actions are proposed.

These will be reviewed and developed in more detail in the next stage of this project.

<p>H1 – Programme of deep retrofit of all council owned social housing</p>	
<ul style="list-style-type: none"> • Bring all council owned housing up to an EPC C rating by 2035 or earlier • Domestic energy use leads to 50% of carbon emissions in the borough at present and the council has the authority to implement this change directly 	
<p>H2 – Programme of technical advice on energy efficiency for property owners and occupiers</p>	
<ul style="list-style-type: none"> • Develop a technical advice service for property owners and occupiers that covers fabric improvements, technology upgrades, funding availability, and approved installers etc. • Domestic energy use is responsible for 50% of carbon emissions in the borough at present and this programme will support individuals and private property owners 	
<p>H3 – Funding assistance to support delivery of energy efficiency in privately owned properties</p>	
<ul style="list-style-type: none"> • Set up a funding programme to support energy efficiency measures such as glazing, insulation, switching to low-carbon heat and improved heating systems in privately owned properties. <p>Privately owned properties are some of the most difficult to engage with to ensure emission savings are made, funding can be an important incentive for this group. Funding can be allocated based on locality, property type etc.</p>	

H4 – Enforcement of national regulations

Policy and regulation

- The council can use its existing power of enforcement in different areas to maximise improvements under different regulations. Building control, landlord licensing and the new energy efficiency regulations for private rented property are some of the key areas in which Haringey is able to undertake a more detailed review and enforcement of non-compliance.
- Enforcement is a particularly useful tool to tackle target groups that prove more difficult to engage with and incentivise through other means.

H5 – Planning policies that demand ambitious carbon reductions in new and redeveloped homes

Policy and regulation

- By increasing the targets and requirements of new and redeveloped properties in the borough, the council can provide opportunities for stimulating the market for low-carbon building technologies, and demonstrate that zero carbon, and even negative-emission buildings are a real possibility for the future.
- Up to 50,000 new homes are expected to be built within Haringey by 2050, comprising around a third of the properties that will exist at that time. The council needs to get these right.

W1 – Engagement with professional networks

Influence and partnership

- The council can form and facilitate networks of local businesses, or engage with existing professional networks to increase prioritisation of CO₂ reduction in commercial decision making
- Business emission contributions are considerable and in this field the council has more limited authority to make changes.

W2 – Funding assistance to support delivery of energy efficiency measures in commercial premises

Influence and partnership

- Set up a funding programme to support energy efficiency measures such as glazing, insulation, switching to low-carbon heat and improved heating systems for small businesses in the borough.
- Small and micro businesses typically lack the financial capacity to fund capital investment in energy saving measures within the buildings that they operate from and in their processes, so funding provision can be an

important incentive for this group. Funding can be allocated based on locality, property type, business sector etc.

W3 – Engagement with large enterprises and emitters to support large-scale projects and high-profile action



- Large businesses should have the financial capacity to plan for and undertake significant emission reduction efforts, especially given the opportunities for long-term financial savings that go hand in hand with many energy reduction and efficiency measures. The key to unlocking this action is better engagement and facilitation of landmark projects.
- Medium and large businesses represent over 40% of the employment in Haringey despite making up only 2% of the overall businesses in the borough.

W4 – Engagement with public bodies to support energy efficiency improvements in public buildings



- Other public bodies are in similar positions to the council with reductions in government funding and the challenge to achieve more with less. Haringey can partner with other organisations represented in the borough to inspire and share best practice, and make the most of large-scale shared opportunities and the economy of scale.

W5 – Action to improve energy efficiency and reduce energy consumption in council owned buildings










- The area of greatest control that Haringey has is its own estate, and it should lead by example and make significant improvements to existing council owned buildings. Haringey can use this opportunity to pilot opportunities with the potential for scaling up elsewhere in the borough, and should also ensure that robust monitoring and verification of completed work is undertaken to enable better informed decisions both in policy and programmes.



W6 – Planning policies that demand ambitious carbon emission reductions in new and redeveloped workplaces



- By increasing the targets and requirements of newly built and redeveloped areas of the borough, the council can provide opportunities for stimulating the market for low-carbon building technologies, and demonstrate that zero

<p>carbon, and even negative-emission buildings are a real possibility for the future.</p> <ul style="list-style-type: none"> • Businesses of the future will need premises that are cheap and efficient to run, and are well provisioned for taking advantage of future developments in technology. 	
<p>T1 – Engagement with Haringey residents to encourage mode shift towards public and active transport choices</p> <ul style="list-style-type: none"> • Haringey need to get a critical mass of people walking and cycling, and to encourage this to happen the council needs to clearly demonstrate where walking and cycling are the most convenient, cost-effective and fastest ways of getting around. Listening to residents is crucial to understanding the current barriers to walking and cycling, and subsequently building a plan of action to tackle them. • Increased walking and cycling will reduce the number of vehicles on the roads, have an immediate impact on air quality in the borough and improve the health of the population. 	
<p>T2 – Programme to improve active transport infrastructure</p> <ul style="list-style-type: none"> • Other cities have managed to foster significant increases in the uptake of cycling through substantial investment into well thought out transport infrastructure. Haringey should look at best practice from around the world, set aside or secure additional funding and look at interlinked opportunities for improving green space in the borough when delivering a leading class network of walking and cycling routes. 	
<p>T3 – Policies to that penalise private car use through parking charges based on fuel type/emissions etc.</p> <ul style="list-style-type: none"> • The council grant residents’ parking permits and controls some of the borough’s short stay parking facilities. Haringey already structures its charging arrangements to benefit those choosing lower-emission vehicles and incentivise the electrification of private cars. This should be continued and potentially extended. • Road transport makes up a significant proportion of the current emissions in the borough as well as contributing to poor air quality. Where people can afford to purchase mid- and high-end cars, there should be a financial incentive to choose the low-emission option. 	

<p>T4 – Programme to incentivise move to low and zero emission vehicles by residents and businesses</p>	
<ul style="list-style-type: none"> • To work alongside financial penalties and work to reduce the number of journeys made in any vehicles, Haringey will also need to provide a supportive programme to educate, inform and remove barriers to potential EV-owners. This could include a scaling up of the existing free EV trials, easily obtainable advice and loans for the installation of home and on-street charging points, or discount schemes for charging in the borough. • Transportation is one of the biggest contributors to emissions in the borough, and combined with the other adverse effects of tailpipe emissions on air quality and health, switching to low and zero emission vehicles represents a huge opportunity for the borough. 	
<p>T5 – Action to expand provision and accessibility of EV charging infrastructure</p>	
<ul style="list-style-type: none"> • Haringey could work with Source London (providers of EV charging infrastructure across London) as well as local businesses and public services to identify and make provision for more EV charging points in the borough. 	
<p>E1 – Action to install renewable generation in the Lee Valley through wind turbines and PV</p>	
<ul style="list-style-type: none"> • The council could look into options for larger-scale renewable energy generation in the Lee Valley; the park crosses the boundary between Haringey and Waltham Forest, and contains reservoirs owned by Thames Water. The council could set up a partnership to install a number of wind turbines and/or significant area of solar PV over the reservoir(s). Feasibility and viability of these options can be explored further. 	
<p>E2 – Programme to encourage installation of distributed renewable generation through roof mounted PV</p>	
<ul style="list-style-type: none"> • By increasing the amount of renewable capacity in the borough, Haringey can reduce its emissions even further than by just reducing final energy demand. Solar rooftop PV has good potential for providing energy within the borough and the council could set up a programme of technical advice and funding options to enable more residents and businesses in Haringey to adopt this. 	

<p>E3 – Policies to support appropriate installation of and connection to district heating networks</p>	
<ul style="list-style-type: none"> • The council is already looking in detail to installing a district heating network in Tottenham, but as more opportunity areas for district heating networks are identified, the council needs to ensure that the existing buildings in the local areas are capable of connecting to them. The council should be considering the options for improving this accessibility when it carries out other building interventions for efficiency to reduce future disruption, and to increase future viability. 	
<p>E4 – Programme of technical advice to encourage and support residents and businesses to adopt heat pumps</p>	
<ul style="list-style-type: none"> • Heat pumps are several times more efficient than traditional gas boilers at heating homes, and as they are powered by electricity they have the possibility to be a zero carbon alternative for heating buildings. The council should consider setting up a dedicated programme to assess the potential for replacing gas boilers with heat pumps in local homes and businesses and help owners understand the cost effectiveness of the options. 	

5.7 Actions for others

5.7.1 Grid decarbonisation

Haringey's zero carbon pathway is based on the assumption that the carbon content of electricity supplied by the national grid will continue to decrease in the manner predicted and set out by the government.

Haringey cannot generate all the power it requires within its boundaries using current practical technology, as discussed in the Stage 1 Technical Report, though it can support grid decarbonisation through local generation where practical and purchasing of renewable electricity by council, businesses and residents.

5.7.2 Regional and national engagement

Council powers to set policy are limited and in many areas mandates for change can only come from a regional or national level. Haringey can continue to lobby for change at a regional and national level, and can also support existing policies through enforcement, using innovative approaches where priorities conflict.

6 Key challenges and uncertainties

6.1 Introduction

Action on the scale contemplated to achieve a zero carbon Haringey will face significant challenges and barriers. This chapter considers what we believe will be the main challenges, and proposes possible measures to mitigate or overcome the challenges.

6.2 Political support

We have outlined a plan of action for Haringey and the overall priorities for the borough, but the ambition of a zero carbon Haringey by 2050 will only be possible with wider support – from both the local community and from central government. The council needs to recognise that the scale of change will inevitably demand changes in the way people work, travel and maintain their homes. The council will need the borough's communities to understand and support these changes for them to work. Haringey also needs the government to enable these changes through sustained leadership and communication, stronger legislation and better funding for essential investment in low carbon buildings and infrastructure.

The council's role is to engage with its communities and provide strong two-way communication channels, so that it can ensure the options it chooses are the right ones for the community. Haringey needs to call on Government to play its role through providing sustained leadership on climate action, which means both clear consistent messaging but also effective policy and funding to support real change, not just rhetoric.

6.3 Funding and project development

Haringey has already successfully demonstrated a variety of delivery models in programmes and activities, as described in the Annual Carbon Reports. However, these programmes have been small in scale compared with the challenge ahead, and very few programmes have maintained investment over a long period of time.

Meanwhile, government funding to the council has been cut in real terms by 40% since 2010. This restricts not only the council's ability to fund projects in the community, but also the resources available to facilitate and carry out the programmes identified in this plan. Given this, it is important to recognise that reduced energy consumption will bring associated financial savings.

Haringey should seek smarter ways to work to maximise the limited resources it has – such as pooling resources and aligning its goals with other boroughs and organisations, and leveraging private sector support to scale the impact.

It should also seek to maximise use of available funding programmes to support the initiatives.

6.4 Performance gap

Currently, it is common practice to plan and assess projects on the basis of standard benchmarks and industry best practice. However, it is recognised that the actual performance of installations, buildings and infrastructure can be much poorer than predicted at the design stage.

This problem undermines the plans that councils and others make and has the potential to reduce the level of emission reductions that Haringey can deliver in reality. To combat this problem, Haringey should ensure robust monitoring of final installed solutions, consider using pilot projects to provide real-world performance information before rolling out at scale, and engage with the relevant research/professional institutions to ensure it is using the best available information in its decision making.

The council should also work with local builders and installers and their knowledge networks to help build capacity and raise standards for installations (this links closely with the supply chain challenge, below).

6.5 Supply chain

In order to scale up action that delivers sizeable reductions in carbon emissions, Haringey will have to rely heavily on suppliers, installers and other key parts of the low-carbon economy supply chain. The required scale of activity will require a developed local market. Without a developed local market access to services, cost of delivery and quality of outcome are likely to suffer.

Roll-out of programmes in the borough needs to be done in a way that supports growth of the supply chain in a sustainable way. Pilot schemes for emerging solutions can facilitate this. Also, by setting out definitive long-term projects the

Green Open Homes days:

Over the last five years, Muswell Hill Sustainability Group (MHSG) have held regular ‘Green Open Homes’ days.

Two Green Open Home events were held on Sunday 5th and Saturday 11th November 2017, with 11 energy-efficient homes from across the borough taking part and opening their doors to visitors through hourly slots booked using Eventbrite.



Hosts provided information about the improvements process, energy savings, costs and installers/products used, and reported increased comfort levels.

Improvements on display included different types of wall, loft and floor insulation, glazing and draught proofing, solar thermal and solar PV, air source heat pumps, LED lighting and sun pipes.

A survey from visitors to the event confirmed they had found useful information and were inspired to take action.

council can provide predictable demand to increase confidence of suppliers and installers.

6.6 Offsetting

Haringey is committed to reaching the target of a zero carbon borough by 2050, and have accepted the reality of the challenge this presents. With ambitious action, it is possible to get close to zero carbon, but consideration should also be given to options for mitigating residual emissions in 2050.

Some of this could be from over-delivering renewable energy within the borough, thereby contributing to the wider decarbonisation of grid electricity.

There are other existing offsetting mechanisms, and more options may present themselves in the future. This option must not however detract from the importance of achieving the maximum possible in-borough emission reductions.

Further consideration of offsetting opportunities will take place in Stage 2 of the project.

6.7 The future of heat supply

Gas is a major source of emissions, particularly for heating buildings. Currently the only real way to cut emissions from gas heating is to electrify our heating – for example through the use of heat pumps, or through switching to an alternative fuel with lower associated emissions.

One alternative fuel is hydrogen, which is zero-emission at point of combustion. Hydrogen has been identified as potential solution to provide low-carbon heat which makes use of existing gas distribution network assets. However, hydrogen production and distribution present significant technical challenges which have yet to be resolved in a cost-effective way.

The uncertainty surrounding future heat sources is something that will be considered in planning for a zero carbon borough. By focusing on other areas of action in buildings, for example building fabric retrofit, appliance upgrades, smart meters and controls, and by keeping potential future sources of heat in mind when designing and delivering upgrades (ie. keeping measures ‘fuel- or technology-agnostic’), Haringey can continue to act without committing to a particular heating future at this stage.

Similarly, a switch to heat networks in areas of suitably high density provides a “technology agnostic” solution which can be supplied with large scale heat pumps or, if the challenges are overcome in time, with hydrogen-based applications.

6.8 The price of carbon and energy

The cost of carbon is increasingly incorporated into our cost of living, as we recognise the hidden costs of emissions in the production of electricity and goods. In some sectors carbon is attracting a monetary value through carbon trading markets, and the government also sets a non-traded price of carbon.

This cost of emissions, but particularly the cost of carbon in primary energy production, will impact the attractiveness of emission reduction policies and programmes.

If fuel prices increase this will provide further motivation for people to find ways to reduce their energy consumption. On the other hand, if fuel prices remain steady or fall, councils and government will need to work harder to incentivise change and use other tools to achieve reduction targets.

Within the planning context, a carbon offset price of £90/tonne is currently used by the Council, similar to the draft new London Plan figure of £95/tCO₂. However, recent studies indicate that a figure twice that value might be needed to provide adequate funding for equivalent carbon savings measures, as well as to provide the right incentives to developers to maximise opportunities for on-site reductions.

7 Next steps

The Zero Carbon Haringey project was designed to be completed in 2 stages. This report, together with the Technical Report comprise the conclusion of stage 1.

If the newly elected council decide to proceed to stage 2, the proposal is that the work will include the following activities:

- Review of stakeholder responses on the Stage 1 outputs.
- Development of detailed plans for the opportunities outlined in this report including financial models, policy assessments and funding options
- Working with key stakeholders to ensure the developed plans are right for all borough residents and focus on programmes that will deliver co-benefits as well as emission reductions
- Setting out a rigorous plan for monitoring and reporting progress that will establish Haringey as a champion of collecting and using real-world data to inform decision making