ISLINGTON

Vision 2030:
Creating a Net Zero Carbon Islington by 2030

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Foreword

We know that Islington is a great place to live and work but we also know that it faces challenges, none more so than the immense challenge of providing a sustainable future for our children and grandchildren. By doing so, we will contribute to a sustainable future for the planet. If we need a reminder of how important this is we only need to listen the schoolchildren who come to the steps of the town hall as they ask us to take action.

This draft Net Zero Carbon strategy sets out our vision of a fair and green future for local people and our plan for a net zero carbon Islington by 2030. It builds on our work to make our borough a fairer place for everyone by helping with the cost of living and mitigating the inequalities exacerbated by climate change.

To achieve that future, we need central government to step up and provide adequate and sustained funding and a legislative framework which can help us to drive forward our ambition for a net zero carbon borough. After ten years of austerity, councils such as ours have little spare resources and we must get the support we need. Our housing retrofit programme alone demands funding which we can't raise. We need decarbonised electricity generation to stand any chance of meeting our commitments, which is only something central government can do.

The council has direct control over only 4% of the carbon emissions with indirect responsibility for about 4% as a landlord to about 25,000 properties. While we have a great responsibility to reduce our emissions, we must also lead the way in supporting local people, business and our other partners to reduce their impact.

I am immensely proud of our achievements over recent years, which include:

- Achieving a 39.8% reduction in borough-wide carbon emissions between 2005 and 2017, meaning we are on course to meet our 2020 target of a 40% reduction ahead of schedule despite a 28% increase in our population over the corresponding period.
- Setting up Angelic Energy, London's first municipal energy supplier for over 100 years, which now has approximately 3,500 homes on supply (69% of customers are Islington residents), including many people on lower incomes[1].
- Launching the Bunhill Heat and Power Network, connecting Phase 1 (serving 600 homes, two leisure centres and four office blocks) to Phase 2, which has recently been launched meaning that an additional 1,500 homes will be connected to an expanded network with waste heat provided from London Underground, the first project of its kind in the world.
- Each year helping over 5,000 vulnerable residents in Islington and beyond to stay warm and well through our award-winning fuel poverty referral scheme the Seasonal Health Intervention Network (SHINE).
- Cutting energy use for 2,900 vulnerable households by installing low-cost energy-saving measures through our Energy Doctor in the Home service.
- Winning Council of the Year at the Regional Energy Efficiency Awards for Greater London in 2018 and Council of the Year at the National Energy Efficiency Awards in 2019.

[1]Figures accurate as of 25 December 2019

- Deciding to decarbonise our Pension Fund's investments by 2022, by reducing the fund's exposure to carbon emissions and reducing the fund's equities exposure to fossil fuel reserves.
- Launching the pioneering Carbon Offset Fund[2] in 2012, which remains the largest offset fund in London.
- Providing all residents with a comprehensive recycling service for a wide range of materials.
- Being amongst the first places to set parking permit charges based on vehicle emissions.
- Being the first borough to implement a parking permit surcharge for diesel vehicles and to call for diesel vehicles to be banned from London by 2025.
- Pioneering the low-emission neighbourhood at the City Fringe, banning all vehicles not classed as ultra-low emission during the peak morning and evening commuter periods.
- Introducing 13 'School Streets', restricting traffic outside schools during drop off and pick up time.
- Cleaning up the council vehicle fleet and working with Transport for London to ensure buses in Islington are clean.
- Introducing 170 electric vehicle charging points, with over 400 electric charging points planned to be in place by 2022.
- Introducing electric vehicles and trialling a range of low emissions vehicle technologies to reduce our fleet emissions.
- Investing in energy efficiency measures at the Sobell Leisure Centre and Islington Tennis Centre, delivering significant reductions in cost and carbon emissions.

In response to this climate emergency, we as the council are taking the lead but we need you to help us achieve our ambitions together. We will be asking you for your ideas on our Net Zero Carbon Strategy and on how to go forward to engage local people and our Islington-based businesses and organisations to come up with a vision for Islington 2030 in which we all play our part.

Councillor Rowena Champion
Executive Member for Environment and Transport

[2]http://www.energyforlondon.org/islington-establish-new-carbon-offset-fund/

Glossary

Angelic Energy: An Islington Council-owned non-profit energy company that is specifically focused on reducing prices for residents and ensuring the terms are easy to understand.

Carbon Emissions: Any process that produces CO_2 emissions, usually by burning fossil fuels.

Carbon Neutral: The aim of having no carbon dioxide emissions produced. If any are produced, they are offset by carbon reducing processes.

Carbon Offset Fund: A fund that collects from developers that fail to meet emission targets on new developments. This money is then used to support carbon reduction projects in Islington.

Carbon Offsetting: Reducing emissions or capturing carbon in one sector in order to allow for another sector to still produce emissions.

Carbon Sequestering: Capturing carbon through long-term storage methods. The easiest of these is to plant more trees, which capture carbon through their leaves.

Climate Emergency: A declaration stating that Islington Council will prioritise a net zero carbon future, setting the target of meeting this by 2030.

Decarbonisation: The process of removing all energy sources that produce carbon emissions from the energy grid.

ECO Funding: Energy Company Obligation scheme, set up by the government to contribute to energy saving measures. The funds are provided by major energy companies to installations that cut carbon emissions.

Energy Doctor: Members of the energy advice team who visit residents' homes for free. They provide many services such as helping with heating controls and fuel bills to fitting radiator reflectors and draught proofing.

Energy Efficiency: The amount of useful energy produced per unit of fuel. The more energy produced or used, the higher the energy efficiency. For example, loft insulation keeps the useful hot air in the home, increasing the energy efficiency of the building.

EPC Rating: Energy Performance Certificate is a rating scheme to assess the energy efficiency of a building, with A being the most efficient and G being the least.

EV: Electric Vehicle. Any vehicle powered through recharging at an electrical point.

Fuel Poverty: The ability of a household to afford their energy needs without compromising other basic needs.

Global Warming/Climate Change: The process by which the earth is heating up due to an increase of greenhouse gases trapping heat from the sun, warming the earth.

Greater London Authority: The regional governance body of London.

Green Energy: Any energy source that does not produce a high amount of carbon dioxide emissions, preferentially producing none at all.

GreenSCIES: Green Smart Community Integrated Energy Systems. A project with the aim of creating a communally owned energy grid, with a specific emphasis on green energy sources.

Heat Network: Also known as district heating; a system for distributing heat generated in a centralised location through a system of insulated pipes for residential and commercial heating requirements such as space heating and water heating.

Heat Pump: The most energy efficient form of electric heating available. Heat pumps operate by transferring heat from a cold space (e.g. outdoors) and releasing it into a warmer one.

Hydrogen Fuel Cell: An energy source that converts hydrogen and oxygen into water and electricity; it does not produce any carbon emissions.

ICEF: Islington Community Energy Fund. Aimed at supporting community projects that reduce carbon emissions and benefit Islington residents, with emphasis on helping those struggling with fuel poverty.

ISEP: Islington Sustainable Energy Partnership. A network of public and private organisations with the aim of collectively managing energy costs and reducing carbon emissions.

LED lighting: Light Emitting Diode. A more energy efficient form of lighting when compared to standard bulbs. They do not get as hot and release more of their energy as light.

Low Carbon Energy: Any energy source that does not produce a high amount of carbon dioxide emissions, preferentially producing none at all.

MEES: Minimum Energy Efficiency Standard. Regulations that require a minimum energy efficiency in domestic private rented buildings.

Net Zero Carbon: The aim of having no carbon dioxide emissions produced, and if any are produced, that they are offset by carbon capturing processes.

PPM: Pre-payment meters, a pay-as-you-go system for energy supply. The resident pays for energy before they use it, usually by adding money to a key or a smart card which is then inserted into the meter. This is usually the most expensive way to buy electricity.

RHI: Renewable Heat Incentive. A government scheme that subsidises the installation of domestic and commercial heat pumps.

Scope 1 Emissions: Direct emissions that occur locally from activities such as burning gas in boilers to heat homes and businesses or petrol/diesel vehicle emissions.

Scope 2 Emissions: Indirect emissions that occur from using electricity generated in another location, i.e. from the electricity grid where the emissions could be from coal or gas-fired power stations that supply electricity to homes and businesses in Islington.

Scope 3 Emissions: Emissions that are related to consumption and are recorded at the point of production of the goods e.g. emissions caused by the manufacture of vehicles outside of Islington.

SHINE: Seasonal Health Intervention Network. A network of public, private and charity sector groups such as the NHS and the Welfare Rights Team. They provide a broad range of health and welfare services with the aim of reducing fuel poverty. These range from help with bills and energy debt to safety checks from the Fire Service.

Smart Meter: A device that records energy use and sends the data to the energy supplier. This allows the supplier to have more accurate information which allows for more accurate bills.

Solar PV Panels: Solar photo-voltaic panels convert light from the sun into electricity as a form of green energy.

Social Value: The Public Services (Social Value) Act came into force on 31 January 2013. It requires people who commission public services to think about how they can also secure wider social, economic and environmental benefits.

Zero Carbon Working Group: A cross-service group of council officers that will report and monitor on our progress towards the net zero 2030 target. This group will work very closely with external stakeholders such as community groups and public and private sector partners.

Introduction

Introduction

On 27 June 2019, a motion declaring a Climate Emergency was unanimously supported at a meeting of the full council. This motion committed the council to working towards making Islington net zero carbon by 2030.

At the London level, in November 2019 the London Environment Directors' Network (LEDNet) and the Transport and Environment Committee (TEC) issued a joint statement that identified six priority areas that boroughs will seek to prioritise and support delivery of, through meaningful collaboration with each other, wider partners, residents and the business community:

1. Retrofit London: Retrofit all domestic and non-domestic buildings to an average level of EPC B. Programme timescale: 2020 – 2030.
2. Low-carbon development: Secure low carbon buildings and infrastructure via borough planning. Programme timescale: 2020 – 2022.
3. Halve petrol and diesel road journeys: Halve road journeys made by petrol and diesel vehicles via combined measures that can restrict polluting journeys and incentivise sustainable and active travel options. Programme timescale: 2020 – 2030.

Figure 1. City Road

4. Renewable power for London: Secure 100% renewable energy for London's public sector now and in the future. Programme timescale: 2020 – 2030.

5. Reduce consumption emissions: Reduce consumption emissions by two thirds, focusing on food, clothing, electronics and aviation. Programme timescale: 2020 – 2030.

6. Build the green economy: Develop London's low carbon sector and green our broader economy. Programme timescale: 2020 – 2030.

The council will need to work with partners across the borough to deliver this goal, and make representations to regional and national government to urge them to take action, including giving local authorities the necessary resources and legal powers.

In this strategy, we set out an overview of the sources of carbon emissions in Islington, identify the commitments that we as a council can make today and the actions required needed to eliminate or offset these emissions in the future.

We examine the challenges and risks that we face in attempting to meet the net zero carbon target by 2030 and what we could ask of regional and national government. Throughout the document we categorise our actions and commitments into three sections:

1. What the council can commit to immediately and actions we will take.

2. What the council sees as potential commitments, but requires further investigation before committing to.

3. What the council needs from others in order for the borough achieve net zero, including funding, powers and legislation.

Given the wide scope of our ambitions, this strategy incorporates the council's commitments from other strategies thereby ensuring a coherent approach across all our services.

The latest figures published by the Department of Business, Enterprise and Industrial Strategy (BEIS) show that carbon emissions in 2017 for Islington as a borough were 708,982 tonnes[3], representing a reduction of almost 40% since 2005. However, the latest annual carbon emissions from the council's own operations and buildings only amounted to under 30,000 tonnes[4]. Despite the council's own carbon footprint being less than 5% of the overall borough's, we believe that the council is in a strong position to influence carbon reduction in our borough, using a range of techniques, measures and powers.

The required collaboration with our borough partners, the Mayor of London, the GLA and Transport for London presents a genuine opportunity. The government has to take decisive action to provide local authorities with the powers and resources required, whilst putting in place legislation and funding to ensure that businesses, landlords, the education, health, energy and waste sectors, transport providers and the motor and haulage industries can all play their part in achieving net zero carbon by 2030.

This new target is even more ambitious than our previous of a 40% reduction in emissions and will require an immediate and sustained acceleration of our decarbonisation agenda. Our strategy builds on our past achievements

[3]https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017

[4]Figure taken from council internal carbon emissions records for 2018/19

and sets out our vision, aims and objectives between now and 2030. During this period, we will intensify our efforts and focus on six priorities:

1. **Residential buildings, Commercial and Industrial buildings and Infrastructure**

   Improve the energy efficiency and reduce the level of carbon emissions of all buildings and infrastructure: We will continue our work on the insulation of properties and seek ways of converting heating systems away from gas where possible. In doing so we will work with borough partners such as schools and colleges, universities and the NHS to support them to reduce carbon emissions from their estates.

2. **Transport**

   Reduce emissions in the borough from transport: We will reduce vehicular emissions by encouraging walking, cycling and public transportation. By working collaboratively, we will explore how to transform our streets, secure better, cleaner and more accessible public transport services for Islington and improve air quality for residents. We will also electrify our fleet and encourage residents and local businesses to do the same by ensuring the appropriate infrastructure is in place.

3. **Sustainable Energy Generation and Supply**

   Accelerate our development of smart energy networks in the borough: We will continue to deliver publicly-owned and innovative decentralised energy projects that deliver secure, reliable and affordable energy to residents. We will also install more solar PV panels and battery storage on our own buildings, and support residents and local businesses to do the same.

4. **Affordable Energy and Fuel Poverty**

   Support residents in fuel poverty and increase access to fairer energy tariffs for all: We will continue to support residents in fuel poverty through SHINE. In addition, we will continue to grow Angelic Energy, London's first municipal energy company for over 100 years, through working alongside other local authorities and housing associations that share our ethos of fair energy tariffs for all. Finally, we will also focus on helping residents into work and other means of increasing their household income.

5. **The Green Economy and Planning**

   Deliver on our net zero carbon target whilst assuring the economic success and vitality of our borough by working closely with the 18,800 businesses in the borough, most of them small or micro-sized: We will ensure that our development and planning policies require growth and new developments meet the highest emissions reductions targets possible.

6. **The Natural Environment, Waste Reduction and Recycling and Carbon Offsetting**

   Integrate our ongoing activities in recycling and reducing waste, offsetting carbon emissions and managing our natural environment: To ensure that these are coherent in our efforts to achieve net zero and help mitigate the risks from severe loss of biodiversity which will impact people, the economy and the environment.

This draft Net Zero Carbon Strategy complements several other key council policies and strategies, including:

- Draft Islington Transport Strategy 2019-2041.[5]
- Air Quality Strategy (2019-2023).[6]
- Draft Islington Biodiversity Action Plan.
- Housing Strategy 2014-2019.[7]
- Housing Asset Management Strategy 2013-2043.[8]
- The London Environment Strategy.[9]
- Islington's Waste Reduction and Recycling Plan 2018-2022.[10]
- Islington Joint Health and Wellbeing Strategy 2017-2020.[11]
- Other policies for a green borough.[12]

Our timetable for adoption of this draft Net Zero Carbon Strategy will commence with a public consultation in early 2020 prior to adoption.

Following adoption, the council has agreed to hold an additional annual meeting of the Environment and Regeneration Scrutiny Committee to focus on tackling the climate emergency. This annual meeting shall be in addition to the many other opportunities that residents will have to share their views on our response to the climate emergency.

In conjunction with this, our Zero Carbon Working Group shall monitor and report on progress on a quarterly basis and develop detailed action plans where necessary.

[5]https://www.islington.gov.uk//consultations/2018/transport-strategy
[6]https://www.islington.gov.uk//consultations/2019/air-quality-strategy-2019-to-2023-consultation
[7]https://www.islington.gov.uk///~/media/sharepoint-lists/public-records/housing/businessplanning/policies/20142015/20140603housingstrategy20142019
[8]https://www.islington.gov.uk/-/media/sharepoint-lists/public-records/housing/information/adviceandinformation/20132014/20130816housingassetmanagementstrategy20132043.pdf
[9]https://www.london.gov.uk/what-we-do/environment/london-environment-strategy
[10]www.islington.gov.uk/recycling-and-rubbish/recycling/waste-reduction-and-recycling-plan-2018-2022
[11]https://democracy.islington.gov.uk/documents/s9717/Islington%20Joint%20Health%20and%20Wellbeing%20Strategy%20-%20Draft%20for%20consultation.pdf
[12]Tree policy https://www.islington.gov.uk/~/media/sharepoint-lists/public-records/planningandbuildingcontrol/information/adviceandinformation/20192020/20190920islingtontreepolicy1.pdf
Residential environmental health https://www.islington.gov.uk///~/media/sharepoint-lists/public-records/publichealth/teammanagement/collaboratetopublish/20152016/20151207housingandhealththeroleofenvironmentalhealthofficers
Housing strategy action plan https://www.islington.gov.uk///~/media/sharepoint-lists/public-records/housing/businessplanning/policies/20142015/20140602housingstrategyactionplan20142019
Islington core strategy and local plan etc.
https://www.islington.gov.uk/planning/planning-policy/local_plan_review

Figure 2. City Road

Islington's Vision

Islington's Vision

The UK government set a statutory target in the 2008 Climate Change Act to reduce UK greenhouse gas (GHG) emissions by 80% from 1990 levels by 2050. In 2015 the UK committed to keeping emissions well below 2°C by signing up to the Paris Agreement of the United Nations Framework Convention on Climate Change.

The Intergovernmental Panel on Climate Change (IPCC)'s Special Report on Global Warming of 1.5°C, published in October 2018, sets out the impacts of global warming of 1.5°C above pre-industrial levels with available scientific, technical and socio-economic evidence. Due to historic GHG emissions, the globe is set to warm significantly, with wide-ranging impacts as a result.

Following a recommendation by the UK Committee on Climate Change (CCC), the UK legally amended the target in June 2019 to reduce all GHG emissions to net zero by 2050.

Human pressures on the world's ecosystems and natural resources and the changing climate have also resulted in a serious threat to our biodiversity, with nature eroding at unprecedented rates.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) published its Global Assessment Report on Biodiversity and Ecosystem Services in May 2019, warning of the severe loss of biodiversity and how this will impact people. Climate change and large-scale biodiversity loss need to be tackled simultaneously and are both critical in ensuring human wellbeing, economic viability and the functioning of the natural world.

In response to clear scientific evidence and consensus on climate change, and rising public concerns, Islington Council declared a Climate Emergency in June 2019, giving a clear commitment to adopt the final version of the Strategy at, or before, the Executive meeting on 18th June 2020.

We believe that the best way to tackle the perils of climate change is to build a clean and green borough that leaves none of our residents behind. The availability and use of clean, affordable energy for our residents is central to this.

We will need to build infrastructure, retrofit energy inefficient homes, increase access to fair energy tariffs and build low carbon energy networks. We need to make sustainable transport accessible and appealing.

Islington Council is in a strong position to lead the response to the climate emergency; however, residents, businesses, public sector and borough partner organisations, regional and national government must play a very active part in turning this vision into reality.

Our vision is thus:

"Creating a clean and green Islington in response to the Climate Emergency."

This net zero carbon strategy sets out how we will reach our net zero target and what we will gain: energy efficient homes, affordable green electricity, lower energy costs, cleaner air and streets free of harmful emissions.

To date we have already made significant strides towards this vision:

- We have already begun reducing carbon emissions in the borough and have achieved our target to reduce carbon emissions in Islington from 2005 levels by almost 40 per cent, two years ahead of the 2020 deadline.

- As a landlord, building owner and fleet manager, we as a council are committed to further decreasing carbon emissions from the built environment and future developments.
- We've worked hard to reduce energy consumption and costs through schemes such as Angelic Energy, which supplies renewable energy at a low cost to 3,500[13] households across London.
- We've also been working on delivering a healthy, safer and more accessible transport environment, highlighted in our new transport strategy. Accomplishing this involves working closely with businesses to figure out ways that freight can maintain access to buildings without having as much impact during peak road times.
- We've also begun taking steps to 'decarbonise' the council's pension fund by reducing any investments in fossil fuels and the fund's exposure to carbon emissions by 2022.

We acknowledge that many elements of achieving our objectives are outside the control of the council. As a result, much of our efforts will be directed towards influencing and actively lobbying the relevant parties at regional and national level.

What will success look like?

In order to have created a net zero Islington, the following will need to have happened:

- Emissions from gas boilers and vehicles are eliminated.
- Buildings in the borough are as energy efficient as possible.
- Renewable heat and power generation in the borough is maximised.
- Any remaining electricity needs are sourced from certified renewable or zero carbon sources.
- Any outstanding emissions are offset through carbon sequestration and other methods.
- Residents are net zero carbon literate and adept in how to reduce their utility bills.

[13]Figures accurate as of 25 December 2019

Figure 3. Energy advisor

Defining Net Zero Carbon

Defining Net Zero Carbon

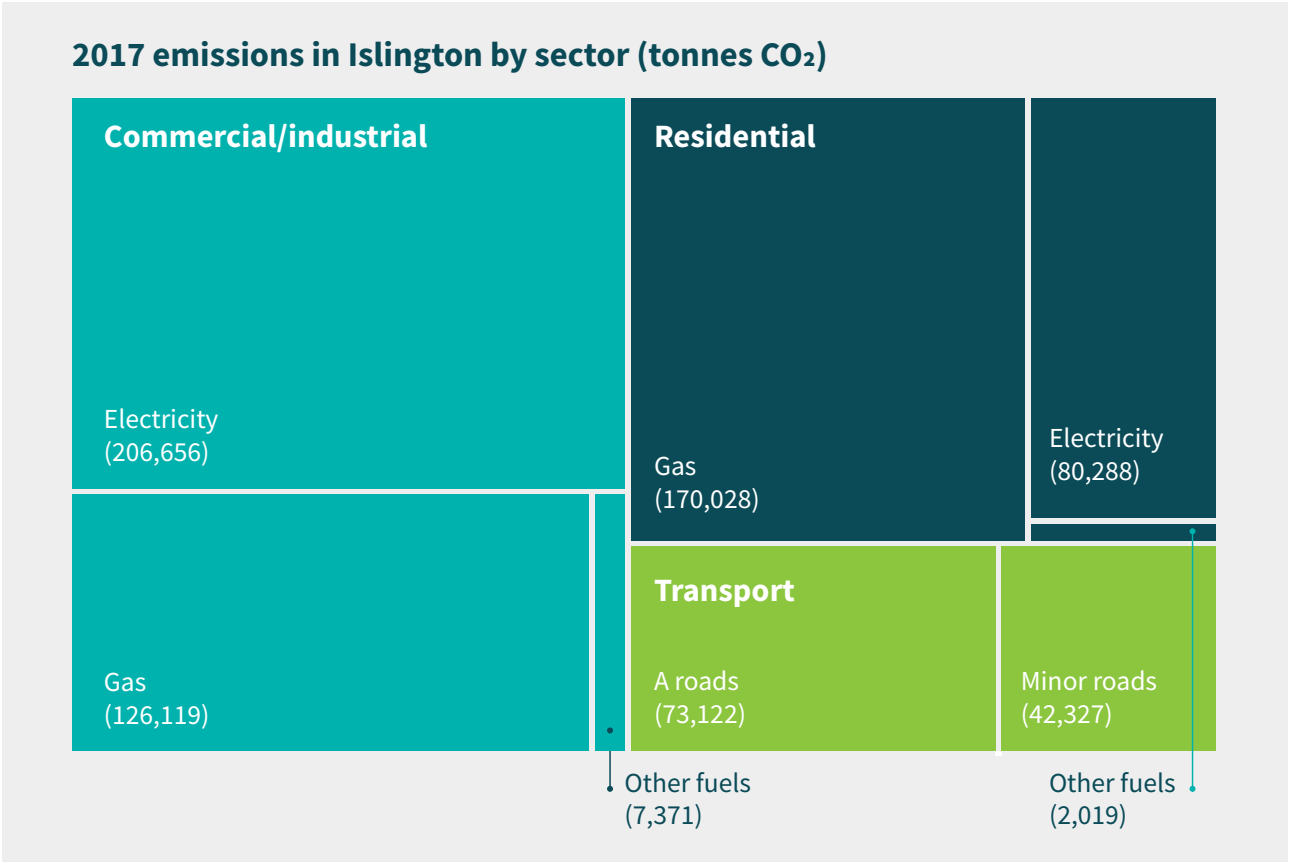
The data on Islington's carbon emissions is produced by the Department of Business, Energy and Industrial Strategy (BEIS) as part of a nationwide dataset of carbon emissions by local authority area.

The data is updated annually two years in arrears – the latest data published in June 2019 goes up to 2017[14]. The data also only looks at carbon dioxide and does not consider other greenhouse gases such as methane.

The figures are broken down by source of emissions: Commercial and Industrial, Residential, and Transport. Within each of these the figures are broken down even further, with Commercial and Industrial and Residential split into emissions from gas, electricity use and other fuels, and Transport broken down into road classes, and railways.

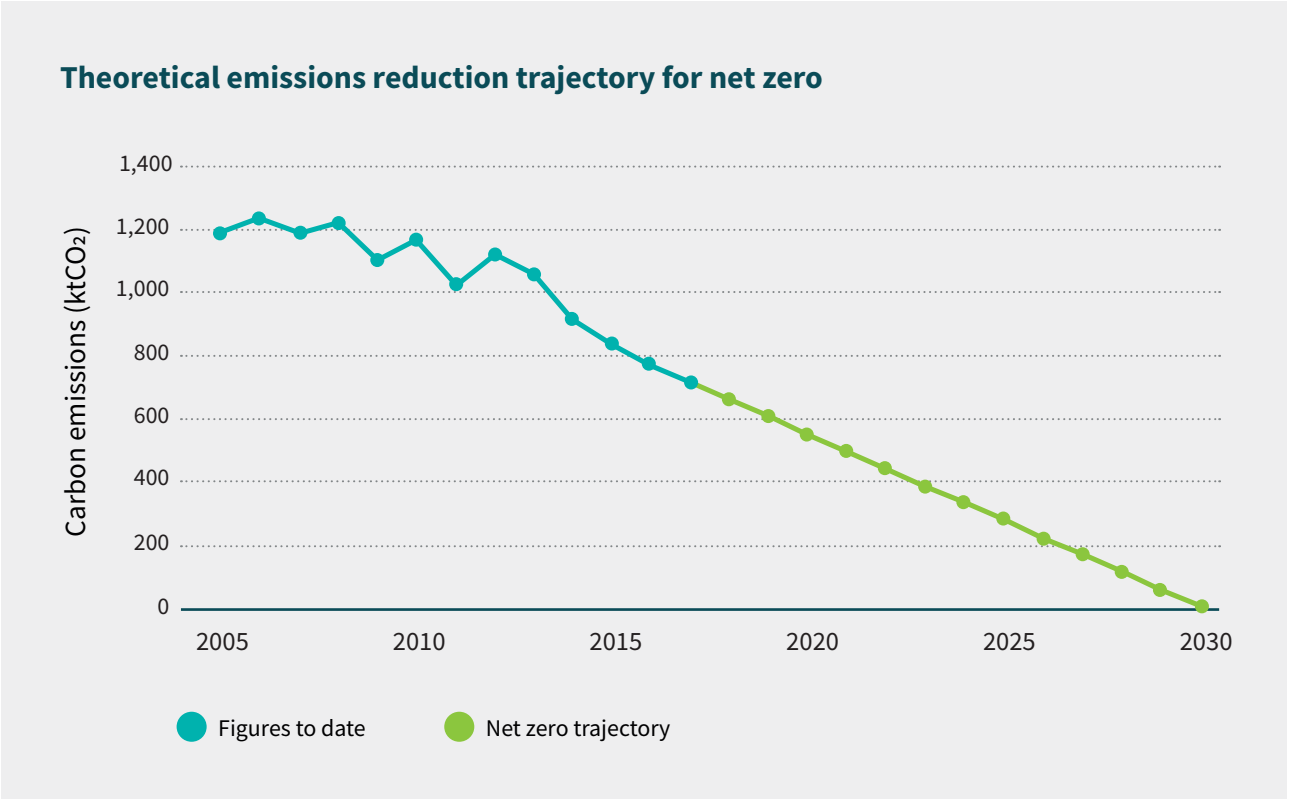
These emissions come from two types of sources. The first is direct emissions that occur locally from activities such as burning gas in boilers or petrol or diesel in vehicles and plant equipment; these are classified as Scope 1 emissions. The second is indirect emissions from using electricity generated

Figure 4. Islington's carbon emissions by sector in 2017.



[14]UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2017

Figure 5. Actual and theoretical emissions reduction trajectory, 2005-2030.



in another location, where the emissions will be from coal or gas power stations that supply electricity to Islington; these are Scope 2 emissions.

It is important to note that the data does not include consumption-related emissions (Scope 3), as these are recorded in the area of production of the goods in question. As a result, inclusion of Scope 3 emissions would mean double counting – for example, the emissions related to the production of a washing machine made somewhere in the UK would be included in the figures for that local authority area rather than the area where the machine was purchased. However, we recognise that many of the goods consumed in Islington are imported from areas that are not necessarily committed to taking the same level of action as the UK in reducing emissions. Therefore, we have also looked at how the council can influence consumption within the borough.

Emissions from shipping and aviation are excluded from the figures due to the difficulty in assigning the national totals to districts. However, similar to consumption-related emissions, these also require consideration in our efforts.

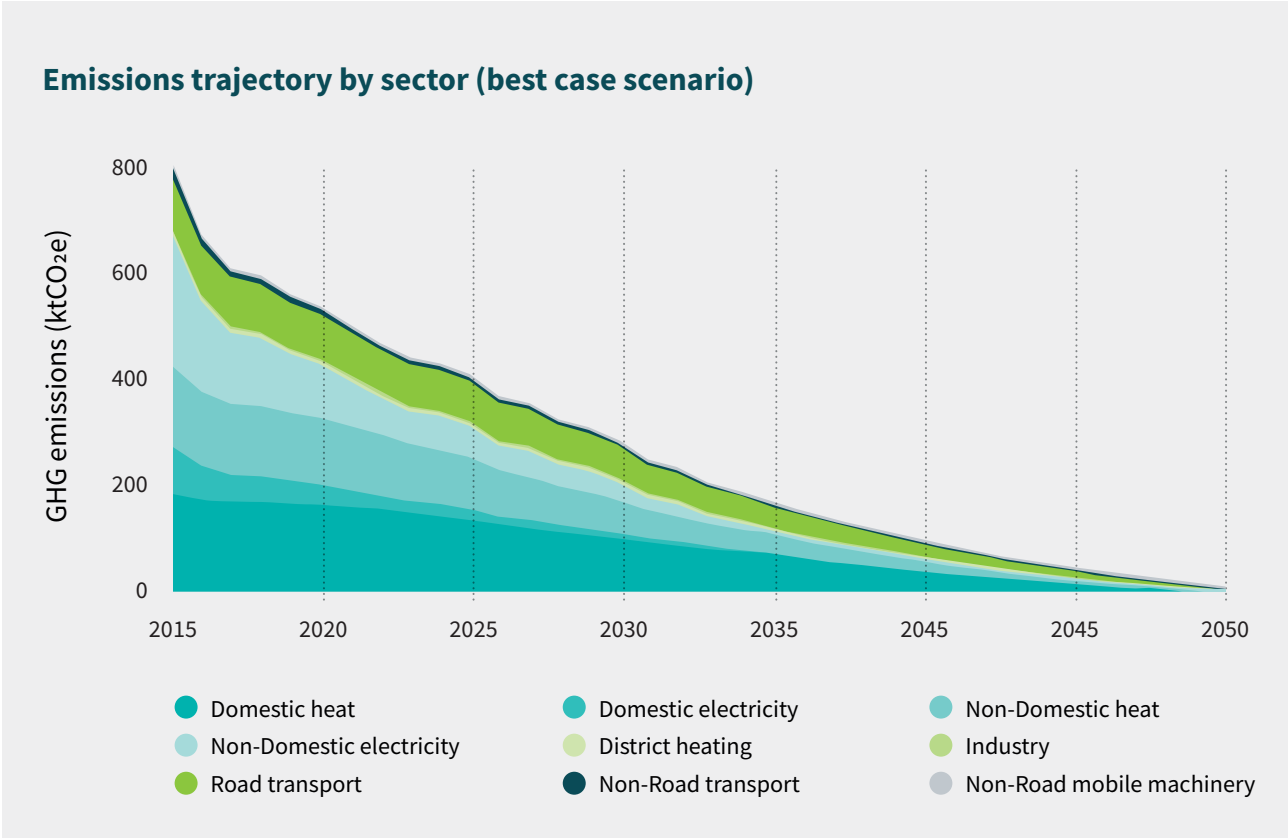
Overarching strategy

Achieving the net zero carbon target will mean reducing Scope 1 and 2 emissions as far as possible and offsetting any remaining emissions. With this in mind, our ability to generate renewable energy locally is constrained by a number of factors including history, location, lack of open spaces and age of building stock. This means it is highly unlikely that our renewable energy needs could be met within the borough. As a result, we will be reliant on importing renewable energy from outside the borough.

It is important to note that our plans are heavily reliant on the increased decarbonisation of the electricity grid. Although the electricity grid has heavily decarbonised since 2005, it is expected that by 2030 for every kilowatt hour of electricity consumed, 48g of CO_2 will still be emitted[16].

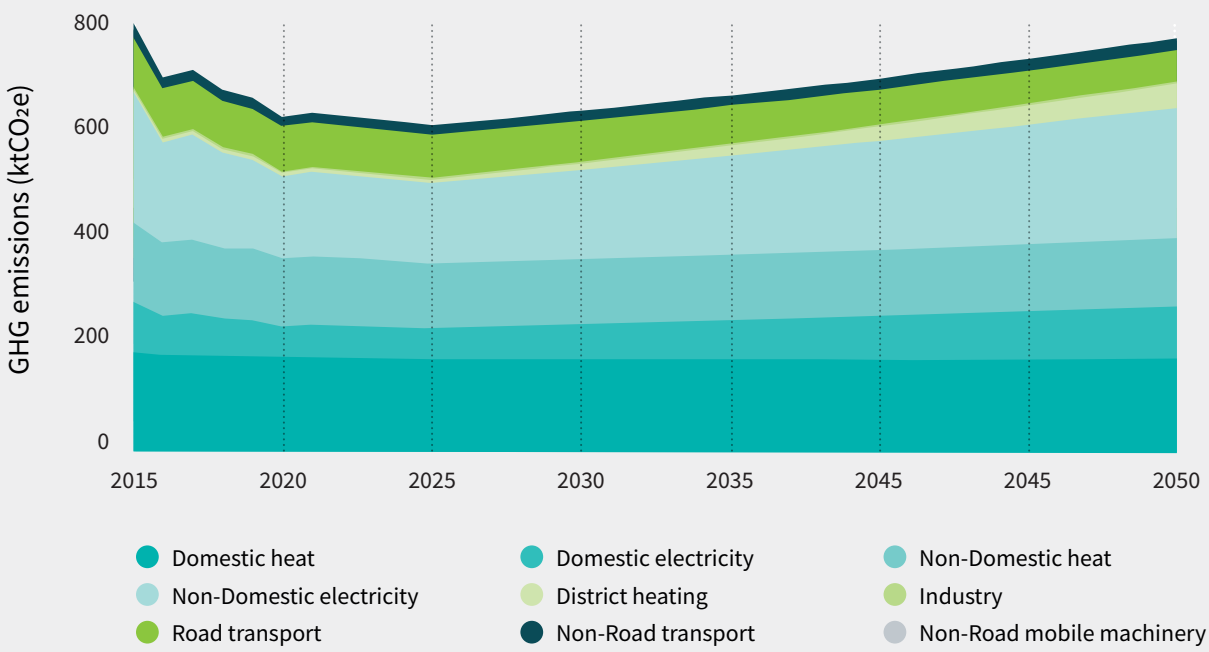
Although green gas (bio-methane) is available for industrial and commercial customers, it is in short supply and it is unlikely that there would be sufficient volumes to replace natural gas at the current scale of demand by 2030. For the purposes of this strategy, we have therefore assumed that green gas is unlikely to be a viable option for residential properties, and that it should be seen as an option of last resort in commercial properties.

Figure 6. Islington emissions by sector over period 2005–2050 based on the most optimistic scenario of electrification of heat, retrofit and electricity grid decarbonisation. Source: GLA[15]



[15]https://data.london.gov.uk/dataset/london-s-zero-carbon-pathways-tool
[16]National Grid Future Energy Scenarios, July 2018, p97

Figure 7. Islington emissions by sector over period 2005–2050 based on the do nothing scenario. Source: GLA[17]



Offsetting

We acknowledge that eliminating carbon emissions in Islington is a huge challenge, and that even with our best efforts there will likely be residual emissions. This is where our actions related to offsetting carbon emissions, by sequestering carbon dioxide from the atmosphere[18], will be required.

The simplest method of achieving this is by tree planting. According to a 2019 report by Forest Research[19], the average mature oak or London Plane tree stores three tonnes of carbon (equivalent to 11 tonnes of CO_2). However, we need to consider the annual sequestration – i.e. how much carbon a tree absorbs each year to offset the carbon dioxide being produced by human activity.

The amount of carbon sequestered changes as trees mature, with young trees absorbing less than 5kg (18kg CO_2), and mature trees anywhere between 20 and 60kg (73-220 kg CO_2). After the mature phase, some trees see an increase in their sequestering and others a decrease[20]. Islington's own tree stock sequesters an average of 10.8 kg of carbon a year.

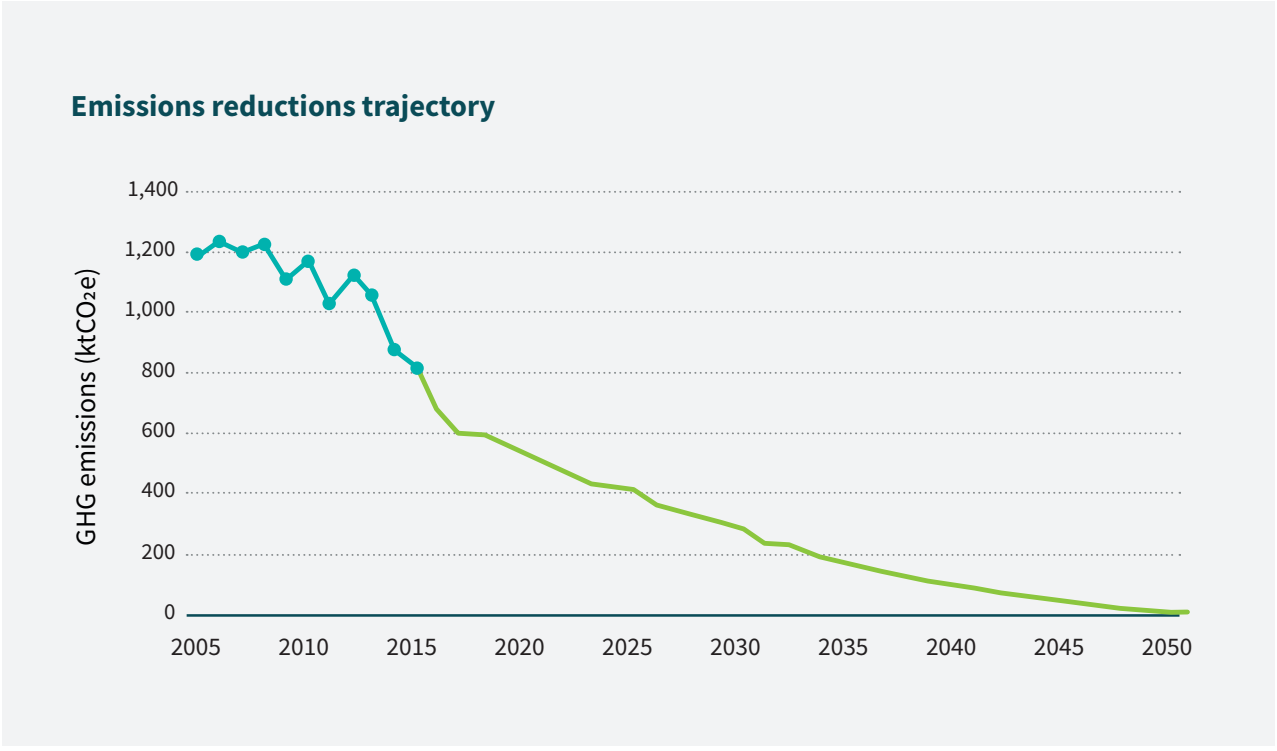
Based on the GLA's Zero Carbon Pathway tool[21], even in the most optimistic scenario (high electrification of heat, maximum levels

[17]https://data.london.gov.uk/dataset/london-s-zero-carbon-pathways-tool
[18]The removal of carbon dioxide from the atmosphere and long-term storage of it in some form.
[19]Ecosystem services delivery by large stature urban trees
[20]'Young' is defined as a tree at 0-17% of its maximum size/age, semi-mature at 17-33%, 'mature' at 33-67%, over-mature at 67-83% and veteran at 83-100%.
[21]https://data.london.gov.uk/dataset/london-s-zero-carbon-pathways-tool

of building retrofit and the national electricity grid decarbonising to achieve the 2 degrees target), there will still be residual emissions of around 285,000 tonnes per annum (see figures below) by 2030. Based on the average sequestration of Islington's tree stock, this would require over seven million trees to offset the borough's outstanding emissions, an implausible figure.

To put this into context, Islington currently has around 32,000 trees in areas managed by the council[22]. However, as the most densely populated district in the UK, there is limited space for the council to carry out more planting in the borough. We as a borough shall therefore have to look at other forms of offsetting e.g. investing in renewable generation but within and outside of Islington.

Figure 8. Islington emissions during the period 2005–2050 based on the most optimistic scenario of electrification of heat, retrofit and electricity grid decarbonisation.



Nevertheless, in accordance with our soon to be published Biodiversity Action Plan, we shall ensure that any tree planting to offset carbon emissions will be done in a way that enhances biodiversity.

Collective action

Islington Council is only directly responsible for around 4% of the borough's emissions, with around another 4% coming from boilers in homes of council tenants. Therefore, it will not be enough to rely solely on the council to take all of the action necessary. Becoming a

[22]13,000 on housing sites, 11,000 on highways and 8,000 in parks

net zero borough will need each and every one of us to take action – residents, businesses, public bodies and the third sector.

As the principal agency for Islington, the council will lead by example in decarbonising its own housing, buildings and fleet. We will also have to enable and encourage other sectors to follow suit – this will mean leading a movement for change amongst our residents and businesses and provide them with support through the transition.

Eliminating our carbon emissions will have hugely positive side effects for issues like air quality, but we must also be aware of unintended consequences, particularly with respect to mobility or fuel poverty.

This section sets out some of the possibilities open to us to achieving a net zero carbon borough whilst at the same time highlighting the risks and challenges that we face.

Challenges and risks

There are numerous challenges in achieving a net zero borough by 2030. The table below sets out a brief summary of these

Figure 9. A1 Holloway road

key challenges, as well as the risks that may seriously impact on the goal of achieving net zero or be inadvertently caused by the drive to do so.

Challenges and Risks	
Challenge, Risk	**Description**
Fuel poverty	a. Electrical heating systems are generally more expensive than gas-fired heating with the market for the former not well-developed, meaning that replacement of gas boilers with electric heating must be accompanied by improved insulation in order to mitigate the risk of fuel poverty.
Finance	a. Scale of costs required and lack of available funding from the council. b. Little funding available from regional and national government. c. Lack of finances on part of social housing landlords, private landlords, owner-occupiers, businesses and third sector organisations. d. Increased running costs for the council through procuring good and services on zero carbon basis. e. Council income affected by reduction in number of cars in borough.
Lack of direct control	a. The majority of properties in the borough are owned by organisations or individuals over whom the council does not have the power to require them to switch to zero carbon heating and power or insulate their properties to a higher standard. b. The capacity of the local electricity grid would need to be increased to support a shift to electric-based heating systems and vehicle charging.
Planning	a. Proposals for external wall insulation in certain areas and locations will not be acceptable under current planning rules. b. Installation of solar panels in some cases will require planning permission in conservation areas and on flat roofs.
Staff capacity	a. Scale of zero carbon activities requires significant increase in number of council staff at a time when the council's budget is still shrinking due to Government cuts.
Local electricity grid capacity	a. The capacity of the local electricity grid would need to be increased to support a shift to electric-based heating systems and vehicle charging.

Technology availability	a. Achieving a net zero carbon borough by 2030 is reliant on there being viable alternatives to current fossil fuel-based technology. b. The technology used for new homes must be thoroughly tested, theoretically and then on actual schemes.
New and existing buildings	a. Space constraints in the council's new build programme can limit the use of certain low carbon technologies. b. Strong collaboration between the council's teams, facilities managers and occupiers will be essential. c. Funding-related challenges. d. Many of the council's remaining inadequately insulated buildings are extremely difficult to insulate.
Equality considerations	a. Some changes – particularly in the area of transport – risk affecting protected groups e.g. electric mobility cars do not become available as rapidly as standard vehicles. b. Certain technologies may pose other problems e.g. air source heat pumps can potentially dump heat on neighbouring properties during the warm summer months.
Regional and national policies	a. Many of the policies required to help Islington to become a net zero carbon borough are set at the regional (London) or national level and as such are beyond the council's control. b. A relaxation of energy efficiency standards for new buildings, Minimum Energy Efficiency Standard or the withdrawal of support for electric vehicles or heat pumps would adversely impact our net zero carbon efforts. c. The decarbonisation of public transport in Islington is dependent on external organisations such as TfL. d. Failure of Government to ensure the rail network is electrified will mean continued travel of diesel trains through the borough.

Figure 10. City Road

Funding and Resources

Funding and Resources

In recent years, the council has invested significantly in measures that reduce carbon emissions from transport, infrastructure and buildings in the borough. These include:

- £200,000 on school streets.
- £4m on new LED street lighting.
- £7.7m on transport projects that encourage active travel or use of public transport.
- £200,000 on Community Energy Fund grants.
- £16.3m on Bunhill II, a new energy centre using waste heat from the London Underground to heat nearby homes. This follows on from the £4m the council invested in Bunhill I.
- £150,000 on LED replacement schemes at the Town Hall and Waste Recycling Centre.
- £923,000 on new electric vehicles and charging infrastructure for our fleet.
- £39,000 on insulation in our housing.

Figure 11. Mildmay Community Centre, the first Passivhaus non-domestic retrofit in the UK

- £120,000 on upgrading lighting in our housing to LED.
- £232,000 on our Warmth on Prescription scheme and Energy Doctors, which install energy saving measures in homes of vulnerable residents; the total annual savings to residents since 2016 from these measures are over £200,000.
- An allocation of £100,000 to the Energising Small Business Fund, which gives grants to small businesses in the borough to reduce their energy consumption.
- Spending £1.395m a year funding the teams whose work reduces carbon emissions, including Energy Services, Environmental Health and Transport Planning.

The council also has significant spending commitments in the immediate future to continue our decarbonisation work. These include:

- Committing £1.5 million for providing the electrical connection necessary to allow for the electrification of the council's fleet at the main depot. We have also put forward a £1.5 million match funding bid from the Mayor's Good Growth Fund for this project.
- A further £3.5m for transport projects that encourage active travel or public transport for 2020/21 and 2021/22.
- A further £1.3m for new electric vehicles in 2019/20.
- A further £300,000 for school streets by April 2021.
- £1.2m to continue our Warmth on Prescription and Community Energy Fund schemes.

Islington was one of the first councils to establish a dedicated Carbon Offset Fund in 2014. Since then we have raised £11m of funding to deliver carbon reduction projects, of which £2.5m has been spent and £7m allocated to projects, some of which are included in the list above. We anticipate receiving a further £3m between 2019 and 2021.

The council currently spends around £20.4m a year on collecting waste and £9.3m a year on disposing of waste generated in the borough.

The council will need to develop business cases for investment in order to reduce carbon emissions. We will also look how services are currently configured to ensure that we maximise annual budgets to reduce our carbon impact.

The council will particularly need the government to make significant and on-going funding, including capital grant funding in order to deliver our ambition for Islington. Specifically, the cost of retrofitting the council's housing stock to become both energy efficient and zero carbon in terms of energy is well in excess of what the Council can afford. This also applies to private housing and social housing provided by other organisations

Given the above, the overwhelming responsibility for funding falls on the shoulders of the Government and so the council will seek to maximise the amount of external grant and project funding we receive from the GLA and the Government to support the delivery of the strategy. This will include bidding for funding on behalf of residents, business and partner organisations where the council is eligible to apply. We will also explore alternative funding opportunities, such as community municipal bonds and crowdfunding.

Figure 12. Community Energy Fund recipients

Engaging, Empowering and Partnering Others

Engaging, Empowering and Partnering Others

Although the council has a leading role in delivering carbon emissions in Islington, we cannot deliver on the net zero carbon target on our own. We will need to work closely with residents and local businesses and community groups to enable and encourage them to help our borough achieve net zero. This will include working with stakeholders to address their emissions related to aviation and consumption, even though these two sectors are not included in the overall emissions figures.

The council will also have to play a leading role as the champion of Islington's residents and businesses at the local, regional and national level in order to push for the necessary powers and funding that will enable us to achieve our target.

Islington Council has long prioritised community engagement with our residents, local businesses and the third sector. We recognise how much our residents value their community and in our efforts to reduce carbon emissions and increase energy efficiency we will to continue to promote grass-roots level innovation. We also recognise that there is strong public support for addressing the carbon agenda, with local pressure pushing for faster decarbonisation.

The council is committed to engaging and involving residents, commercial organisations, businesses, borough partner organisations including the voluntary sector; health and higher education partners, schools; the Greater London Authority (including Transport for London) and National Government Departments and agencies.

The council will work with the partners across the capital including London Councils (including London Environment Director's Network), the Greater London Authority (including Transport for London) and London Waste and Recycling Board (LWARB) in support of London-wide efforts to tackle climate change and to support Islington's vision. For example, we will explore how to encourage small businesses who provide circular economy services to see what opportunities exist for Islington.

The council will investigate developing the Islington Sustainable Energy Partnership (ISEP) overseeing the borough's zero carbon strategy.

In addition, the council will use existing business fora and networks to discuss how to collectively understand and tackle issues faced by businesses.

We will also work with local environmental organisations to help us both engage with stakeholders and help to deliver changes required.

We are keen to engage with residents and so we will explore establishing zero-carbon themed events such as citizen assemblies to have the conversation. The aim of this will be to co-design our approach to achieve the required changes. Alternative funding models referred to above may also provide future opportunities to engage residents, such as crowdfunding for specific zero-carbon projects.

The council's commitment to producing a zero carbon Supplementary Planning Document (SPD) will also include a public consultation process.

Some examples of how the council has successfully partnered with residents, community groups and businesses include:

- Since inception, ICEF has awarded over £240,000 to a number of community-led initiatives including:

- A local housing cooperative to install solar PV panels to generate electricity, making all communal lighting LED, installing electric vehicle charge points, and putting in battery storage to use all energy generated.
- A local church to install battery storage to and radiant heat panels, which will allow small areas of the church to be heated for community and play groups.
- An adventure playground has been given a grant to purchase solar-powered toy car kits to help the children learn how solar power works. Their parents built and installed larger solar panels for an outdoor summer house.

Figure 13. Public Drinking Fountain

- Launched the Energising Small Business Fund[23], offering grants of up to £1,500 to small businesses in the borough for energy efficiency improvements, including new LED lighting and boiler replacements.
- Completed the Green Light North London energy efficiency advice project, which saw almost 60 organisations in Islington given advice on how they could reduce their energy consumption.
- Participated in the Solar Together London programme[24], a group buying scheme which led to the installation of 27 new solar PV arrays totalling 55 kWp, and saving an estimated 16 tonnes of CO_2 a year.
- Set up the Islington Sustainable Energy Partnership (ISEP)[25], which has helped its members cut their carbon emissions by over 31,000 tonnes and saved an estimated £6.7m in energy costs.

We are mindful that alongside the above, the council will need to do more to effect the behavioural change that will be required to meet today's challenges. In addition to this, we shall do more to work with businesses

[23]https://www.islington.gov.uk/business/energy-services/energy-efficiency-grants-for-small-businesses
[24]https://www.london.gov.uk/what-we-do/environment/energy/solar-together-london
[25]http://isep.org.uk/islington-sustainable-energy-partnership-about-us-2/

and third sector organisations to build on the successful efforts of ISEP.

ISEP members collectively account for over 15% of the borough's commercial carbon emissions. The council will therefore make it a priority to bring together residents, businesses and other organisations to work on community-led energy efficiency initiatives that will reduce our carbon footprint.

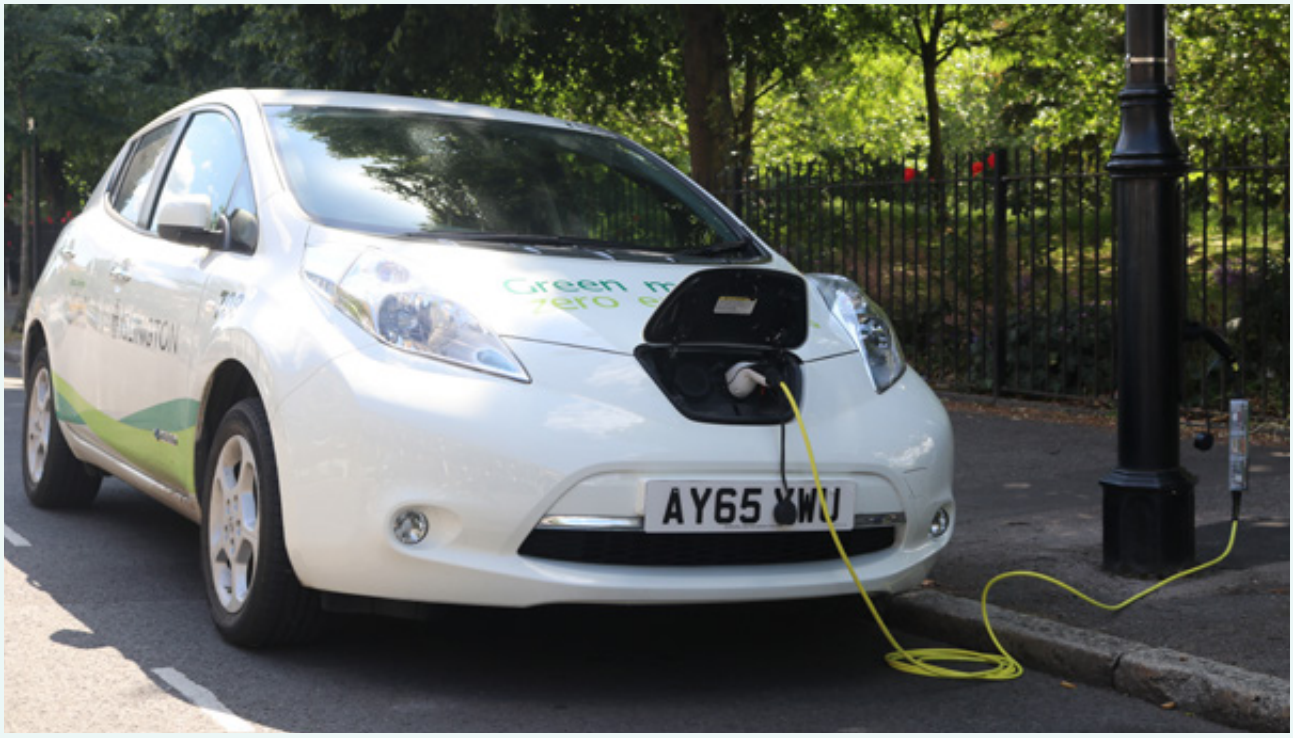
Our Zero Carbon Working Group will engage directly with our residents and businesses and will help with drafting the detailed action plans that these external stakeholders shall require in achieving the net zero carbon target. Through the Zero Carbon Working Group, we plan to launch a Net Zero Carbon Islington 2030 campaign that will empower and educate our communities to embark on a carbon reduction pathway.

Some of the immediate actions we intend to take as part of our commitment to engage widely include:

- Raise awareness amongst our public sector partners e.g. the NHS, the Metropolitan Police and higher and further education institutions, on the importance of this priority and support them to look at their own operations.
- Ensure that our residents' and local businesses' interests are firmly represented in the Zero Carbon Working Group's action plans.
- Continue to deliver the Community Energy Fund and Energising Small Business Fund for local organisations.
- Refresh the focus of ISEP towards our borough-wide zero carbon partnership efforts.
- Educate our residents and businesses on low carbon food supply and other activities that are linked to the reduction of our energy consumption.
- Engage with schools through their head teacher, school business manager and premises manager forums, as well as school governor meetings.
- Engage with schools Green Teams or Eco Teams where they exist.
- Support residents and businesses in maximising how much they can recycle or compost by providing sufficient facilities.
- Install public drinking fountains that reduce the need for plastic consumption and promote the Refill Scheme[26] more widely.
- Encourage a repair and reuse economy by supporting the use of washable nappies by offering subsidies, holding regular give and take events for baby clothes and other clothes swaps, supporting reuse schemes such as Bright Sparks[27] and creating low plastic zones such as that in Cowcross Street[28].
- Increase uptake of solar PV on domestic and commercial properties by promoting the Solar Together scheme to residents and local businesses.
- Quickly scale up successful pilots through the use of external funding such as the Mayor's £500 million Energy Efficiency Fund (MEEF)[29] to help bring about a significant reduction in residents' energy bills and carbon emissions in the borough.
- Increase ISEP membership, particularly amongst small businesses and third sector organisations.

[26]https://refill.org.uk/
[27]Bright Sparks repair and sell second-hand electronics and furniture and offer furniture reuse collections
[28]https://www.islington.media/news/first-low-plastic-zone-launches-in-islington-as-businesses-respond-to-demand
[29]https://www.amberinfrastructure.com/our-funds/the-mayor-of-londons-energy-efficiency-fund/

Figure 14. Islington is replacing fleet vehicles with electric vehicles



- Develop an educational resource for residents at the Bunhill Energy Centre so residents can learn more about the system which powers their homes.
- Explore how we can provide a green and cheaper electricity tariff for businesses through Angelic Energy.
- Set up a Community Energy Hub to encourage knowledge sharing for businesses and the local community – a shared space for the dissemination of information and practical advice, the sharing of ideas and the development of practical projects.
- Promote a sharing society by encouraging the roll-out of communal washing machines and dryers in both social and private residential buildings and rally residents to participate in garden and DIY tool sharing schemes.
- Set up a web portal for residents to make their own climate emergency declarations.

Other commitments we can make will require us to work with stakeholders outside of the borough including Government:

- Investigate how we can employ innovative financial instruments such as community municipal bonds to fund onsite generation schemes.
- Advocate for financial measures that can reduce the cost of climate action, e.g. VAT reduction on energy efficiency measures.
- Partner with our suppliers in order to generate Social Value by focusing on the energy consumption of our supply chains.

Figure 15. On-street electric vehicle charging

Priority 1

Priority 1: Residential buildings, Commercial and Industrial buildings and Infrastructure

Why is this important?

Buildings are the largest source of carbon emissions in Islington, generating 84% of all emissions according to the 2017 dataset. Commercial and industrial buildings (which includes the public sector) are the largest single contributor to carbon emissions in our borough and account for 340,194 tonnes of carbon emissions a year, 48% of the borough's total. This consists of 206,655 tonnes from electricity usage (61% of the total), 126,119 tonnes from gas usage (37%), 7,371 tonnes from other fuels (2%) and 48 tonnes from large industrial installations and agriculture (0.01%).

Residential buildings account for a further 252,335 tonnes, or 36% of total emissions. This consists of 170,028 tonnes from gas (67%), 80,288 tonnes from electricity (32%) and 2,019 tonnes from 'other' fuels (1%)[30].

Energy efficiency, also a key driver of fuel poverty, plays a part. The lower the energy efficiency of a home, the higher the amount of fuel that is required to heat the home adequately (at least 18°C[31]). In many cases this means higher overall fuel costs than should be necessary.

90% of all fuel poor households in England are living in a household band D or below using the Fuel poverty Energy Efficiency rating (FPEER), compared with just 10% of households in band A-C[32]. A BEIS study found that households with insulated cavity walls

Figure 16. High quality insulation helps reduce energy demand

[30]Likely to be largely wood fuel

[31]The Cold Weather Plan for England (2018) suggests heating your home to at least 18°C in winter poses minimal risk to your health when you are wearing suitable clothing.

[32]Annual Fuel Poverty Statistics in England 2019 (2017 data) FPEER is like SAP, but accounts for the impacts of policies which discount households' energy bills (e.g. Warm Home Discount.)

Figure 17. External wall insulation has been installed on blocks in the Holly Park estate

are least likely to be in fuel poverty (7.5%) compared to 16.8% for households with uninsulated solid walls[33].

These figures highlight just how important a factor insulation is in the fight against fuel poverty. Islington statistics from 2017 show that households living in properties built between 1900 and 1918 were most likely to be fuel poor (18.6% of households). This is compared to just 4.1% of fuel poor households in dwellings built post-1990. In Islington, there are approximately 9,300 households in fuel poverty, based on 2017 figures[34].

In simple terms, in order to eliminate carbon emissions from our buildings, we will have to:

1. Replace gas heating and cooking facilities with electric alternatives.

2. Maximise the energy efficiency of buildings through insulation and retrofit of fittings like lighting.

3. Maximise on-site renewables (this is addressed in Priority 3, Sustainable Energy Generation and Supply).

4. Purchase any remaining electricity needs from renewable sources.

Looking at the types of buildings in Islington, there are around 103,000 homes in Islington (of which around 25,000 are owned by Islington Council)[35] and 21,010 business premises[36]. As 60% of our housing stock was built before 1919[37], solid walled properties are very common. These buildings offer the greatest challenge for retrofit efficiency measures and in many cases, the most effective option for raising the energy efficiency of these properties is external wall insulation. However, this will be a challenge as 50% of the borough is classed as conservation area.

If we are to achieve the net zero ambition for council housing and our corporate buildings, gas boiler systems will need to be replaced by either an electric form of heating via heat pumps or a connection to a heat-pump-fed district heating network. Buildings will have to be made more efficient – with at least EPC rating of B – through wall and roof insulation, energy efficient fittings such as LED lighting and the installation of renewables. Our new

[33]https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2019
[34]https://www.gov.uk/government/statistics/sub-regional-fuel-poverty-data-2017
[35]Live tables on dwelling stock (including vacant)
[36]Islington's Labour Market Profile
[37]Housing Strategy 2014–2019, p35

Figure 18. Installing underfloor insulation using Q-bot

build properties will have to be gas-free from the start.

In addition to taking action on our own corporate and housing stock, the council will need to encourage and enable the owners of domestic and commercial properties to take the same actions to eliminate their carbon emissions and achieve the same targets.

What we've done

Between 2013 and 2019 we achieved several successes related to energy efficiency in both council and private buildings:

- Replaced over 1,000 low grade boilers (rated F and G) in social and private tenant homes and started a Low Standard Assessment Procedure (SAP)[38] boiler replacement scheme to replace 100 boilers a year (ahead of scheduled replacement) in the council's lowest SAP-rated properties until 2020/21.
- In the last year alone, helped SHINE clients achieve cost savings of £207,213 through 8,560 interventions covering Energy Doctor home visits, Warm Home Discount[39] referrals and fuel debt relief.
- Carried out energy efficiency improvements in 1,646 households and 19 businesses and community buildings over the last 12 months, saving an estimated 1,443 tonnes of CO_2 and £360,000 a year.
- Converted almost all 11,350 streetlights in the borough to LED versions, saving the council around £400,000 per year.

What we'll do

Between 2020 and 2030, we will carry out a number of initiatives to eliminate the use of fossil fuels and increase energy efficiency in buildings.

What the council can commit to immediately and actions we will take

- Prepare detailed feasibility studies for eliminating the carbon footprint of our larger housing estates.
- Complete a comprehensive review of how our new build programme can meet the net zero carbon target whilst improving quality, liveability, thermal comfort, maintainability, fuel poverty, and end user experience.

[38]https://www.gov.uk/government/consultations/public-consultation-on-proposals-to-amend-the-standard-assessment-procedure-sap

[39]https://www.gov.uk/the-warm-home-discount-scheme

- Phase out gas boilers in new build by 2025 with development schemes being identified to pilot alternatives to gas and develop a clear and approved net zero carbon design strategy across a range of building types.
- Test new approaches between now and 2030 to ensure that the council's net zero carbon requirements are properly incorporated throughout all design stages.
- Ensure 100% of electricity procured by the council is from certifiable renewable sources.
- Connect our communally-heated buildings to district heat networks where possible.
- Increase resident access to low carbon heat by enabling and supporting private property owners to connect to these networks.
- Begin replacing gas boilers in the council's corporate properties with electrical heating or connections to heat networks and improve energy efficiency through insulation and lighting replacements.
- Complete our first EnerPHit[40] refurbishment, one of the most stringent and integrated standards available internationally for energy retrofits.
- Maximise the efficiency of council housing communal equipment e.g. lighting and lifts e.g. through use of LED lighting and insulation of heating system pipework.
- Restart our hard-to-insulate programme on the council's remaining properties that still require such insulation.
- Work with landlords of commercial and domestic properties, through our HMO licensing function, to ensure that their properties are compliant with the Minimum Energy Efficiency Standards (MEES) when they grant a new tenancy to new or existing tenants, including encouraging landlords to upload a copy of their EPC when applying for a licence.
- Proactively enforce the Minimum Energy Efficiency Standards for all other privately-rented housing and commercial buildings through our Trading Standards team.
- Implement new technology such as the GLA and UCL's London Building Stock Model[41], which will greatly improve the way in which we identify houses to treat for energy efficiency.

What the council sees as potential commitments, but requires further investigation before committing to

- In cases where carbon free heating isn't feasible, we will explore installing hybrid heating systems with an overall lower carbon footprint.
- Support private property owners (both commercial and domestic) by developing a loan scheme similar to the Green Deal[42] that allows property owners easier access to financing necessary efficiency improvements such as installing heat pumps, as well as promoting schemes that help simplify the retrofit market.
- Trial new technologies that reduce energy consumption in building systems, building on existing energy efficiency pilots that we are running at our Waste Recycling Centre.
- Launch pilot schemes for verified technologies in fuel poor homes and

[40]https://europhit.eu/content/enerphit
[41]https://www.ucl.ac.uk/bartlett/energy/news/2018/may/greater-london-authority-commissions-ucl-develop-london-buildings-stock-model
[42]https://www.gov.uk/green-deal-energy-saving-measures

Figure 19. Boleyn Road, houses built with heat pumps

those with poor energy efficiency ratings, given that homes heated with storage heaters are twice as likely to be fuel poor as homes with central heating[43].

- Promote aspirations towards a net zero requirement in all council-secured affordable workspace.
- Investigate the possibility of requiring landlords registered with our licencing scheme to provide tenants with a copy of the Energy Performance Certificate (EPC) at the start of their tenancy.
- Investigate the possibility of setting a higher energy efficiency standard for licenced privately-rented housing in Islington than the national MEES requirement (currently an EPC rating of E).
- Investigate and bid for funding from the funding streams available (such as the Mayor's Energy for Londoners scheme) to support retrofitting zero carbon energy systems and installing insulation.

What the council needs from others in order for the borough achieve net zero, including funding, powers and legislation

- Request that Government funds a major insulation and zero carbon heating retrofit programme.
- Certainty from Government that gas boilers will be phased out in new build – both commercial and residential – and that significant grant funding for low carbon heating will be made available.
- Government to commit to the Minimum Energy Efficiency Standards requirements for all residential properties rising to B by 2030 and make assistance available to support landlords to do so.
- Government to bring forward the target date of a decarbonised electricity grid from 2050 to 2030.

[43]https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2019

Priority 2

Priority 2: Transport

Why is this important?

According to the BEIS data for 2017, transport in Islington accounted for 116,514 tonnes of carbon emissions annually, or 16% of the borough's total. Of this, 73,122 tonnes were from petrol and diesel vehicles on "A" roads (63%), 42,327 tonnes from petrol and diesel vehicles on minor roads (36%), 601 tonnes from diesel railways (0.5%) and 465 tonnes from other modes (0.4%), which include LPG vehicles and canal boats. Achieving our net zero carbon target will require us to eliminate all of these emissions.

In 2018 there were 3,076 goods vehicles licenced in Islington[44], and it is likely that most of these are diesel or petrol vehicles. In the same year there were 36,275 cars and 2,899 motorcycles registered to Islington addresses[45], although not all of these will be private cars owned by residents.

The number has remained steady for several years and is only slightly down on the 2009 figures of 37,789 and 3,175 respectively. Based on our parking permit data, which accounts for around 70% of the total number of vehicles in the borough, the split of vehicle by fuel type is 24% diesel and 76% non-diesel, of which just under 1% are thought to be zero emissions[46]. However, the number of ultra-low emission vehicles (hybrids and electrics) licenced in Islington is rapidly rising, with just under 900 registered in March 2019, up from under 350 in Q1 2017[47].

The council itself has around 500 vehicles, of which 448 are diesel, 18 petrol, 3 CNG, 6 hybrid and 23 electric. Almost all of these are filled at the council's own fuel pumps, which dispensed 1,051,100 litres of diesel or petrol in 2018/19. This would have produced just over 2,700 tonnes of CO_2, around 2.3% of the borough's total transport emissions.

Based on the split of transport-related emissions between "A" roads and minor roads, through traffic is possibly the biggest contributor to transport emissions in Islington, whilst incoming traffic such as deliveries, commuters and visitors also contribute to the borough's emissions – during 2018/19 a total of 1,450,882 short stay parking permits were purchased, of which 796,346 (55%) were for diesel vehicles.

These are the sectors where we have the least control or influence. Islington also has no control over TfL routes, namely the A1 (Upper Street/Holloway Road), the A501 (City Road/ Pentonville Road) and the A503 (Camden Road/Seven Sisters Road/Tollington Road).

Achieving a net zero transport system would require all vehicles to be converted to electric (and in some cases hydrogen) and require new infrastructure for recharging or hydrogen filling. However, the starting point should be reducing the total number of vehicles by encouraging a modal shift away from vehicle use, for example cycling, walking and public transport.

Where vehicle use is unavoidable, we should look to increase car sharing and, in the case of the commercial sector, freight consolidation.

[44]London Datastore: Licenced Vehicles by type and borough
[45]London Datastore: Licenced Vehicles by type and borough
[46]The council recently (April 2019) introduced a band for zero emission vehicles. However, as permits are renewed annually, a full year of renewals is needed to get the complete number of zero emission vehicles. In the meantime, the number of zero emissions vehicles whose permits were registered in the first two months of 2019 gives a rough estimate of 0.9% of vehicles being in this category.
[47]Licensed ultra low emission vehicles by local authority: United Kingdom

These objectives are encapsulated in our Islington Transport Strategy[48].

In addition to those emissions from transport, this section also considers emissions from plant equipment such as diesel generators or construction and grounds maintenance equipment. Such non-mobile machinery and equipment is included in this section as the equipment burns the same fuels i.e. diesel and petrol.

What we've done

- The council has been implementing School Streets since 2018, restricting traffic during drop-off and pick-up times to improve air quality, reduce road danger, and encourage people to use sustainable and active modes of transport.
- Islington was amongst the first places to set parking permit charges based on vehicle emissions and became the first borough to implement a parking permit surcharge for diesel vehicles and to call for diesel vehicles to be banned from London by 2025.
- We pioneered the low-emission neighbourhood at the City Fringe, banning all vehicles not classed as ultra-low emission during the peak morning and evening commuter periods.
- We are cleaning-up the Council vehicle fleet and introducing other sustainable methods of transport alongside working with Transport for London to ensure buses in Islington are clean.
- As of 2019, we have installed 170 electric vehicle charging points, and will have over 400 electric charging points by 2022.

Figure 20. The council is the first London borough to order new fully electric refuse collection vehicles

[48]https://www.islington.gov.uk//consultations/2018/transport-strategy

- Provided electric bollards for idling canal boats.

What we'll do

What the council can commit to immediately and actions we will take

- Reduce our overall vehicle fleet and increase the number of electric vehicles within the fleet; where electric is not possible replace engines with electric motors.
- Install charging infrastructure at council locations where vehicles are kept overnight.
- Enable Vehicle 2 Grid[49] (V2G) at locations with parked vehicles, expanding on the Town Hall V2G trial.
- Reduce the need for cars by making active travel (i.e. walking, cycling and public transport) the easiest option[50].
- Ensure new developments are car-free or have restricted on-site parking and access to controlled parking zones, and have adequate cycle facilities.
- Support and promote electric car club schemes and carpooling initiatives.
- Ensure public EV infrastructure is powered by renewable sources.
- Ensure the borough invests in EV charging infrastructure, including lamp column and rapid chargers, carefully locating chargers to avoid pedestrian access issues. 75 EVCPs were installed in 2018 and 90 EVCPs were installed in 2019. We will have over 400 electric charging points by 2022.
- Encourage the use of electric taxis by ensuring Islington has sufficient on-street rapid chargers for taxi drivers[51].
- Encourage local businesses to switch to zero emissions vehicles or cargo bikes[52].
- Deliver 'School Streets' or similar interventions where possible at all primary schools in the borough by 2022, restricting through traffic at school gates at the start and end of the school day.
- Replace grounds maintenance equipment, e.g. the council has been trialling electric blowers and strimmers.
- Introduce a borough-wide lorry control scheme working towards banning lorries (HGVs) from driving through the borough on residential roads. Enhance measures to enforce the existing 7.5t lorry ban and consider an expansion of this ban to include all lorries of 3.5t or higher.
- Develop and deliver an Accessibility Plan and a Walking and Cycling Action Plan by 2025 to transform Islington into an exemplary borough for walking, cycling and accessibility.
- Investigate phasing out resident and business parking permits for diesel and petrol vehicles by 2030 and review our charges.

What the council sees as potential commitments, but requires further investigation before committing to

- Replace diesel generators with emissions-free alternatives such

[49]Vehicle-to-Grid charging allows for electric vehicles to return power to the electricity grid
[50]Please refer to the Transport Strategy 2019-2041
[51]In 2018 TfL introduced new licencing requirements for taxis which will ensure that all taxis licenced for the first time are zero emission capable - https://tfl.gov.uk/info-for/taxis-and-private-hire/emissions-standards-for-taxis
[52]Recent programmes including Archway ZEN have given local businesses trials of electric vehicles and cargo bikes, whilst the Town Centre groups have purchased electric vans to help with deliveries

Figure 21. Dockless bicycles make cycling easier for residents and commuters

as battery packs or fuel cells in our non-road mobile machinery[53].

- Install electricity supply points at locations where there is regular need, such as parks with frequent events[54].
- Investigate options for significantly increasing EV infrastructure to meet increasing demand for electric vehicles.
- Develop a freight consolidation strategy to reduce the impact of on-street deliveries, particularly at peak times, through measures to limit access at peak times and encouraging the use of cargo bikes.
- Explore options such as workplace parking levies (WPL) to encourage commuter use of public transport.
- Develop and implement a programme of Liveable Neighbourhoods for every residential area in the borough, which will contain measures such as road closures, protected cycle routes, improved crossings and improvements to public spaces and seek funding to support the programme.

What the council needs from others in order for the borough achieve net zero, including funding, powers and legislation

- TfL to partner with us to ensure the successful expansion of the ULEZ and make it a Zero Emission Zone by 2030.
- TfL to work with us to ensure that all bus routes through Islington are served by electric or hydrogen fleet by 2030.
- Work with the Canal and River Trust to phase out solid fuel stoves on boats by 2022 as part of the initiative to implement the UK's first Eco Zone at the Regent's Canal.
- Collaborate with the Mayor of London to develop London-wide approaches to workplace parking levies and road user charging.
- Continue to lobby national government for additional actions and national policies, including those on red diesel subsidies, changes to road tax, strategic support for local authorities, national diesel scrappage scheme and improvements to charging infrastructure before the ban of new diesel and petrol vehicles in 2040.

[53]A hydrogen fuel cell was used by TfL during the Highbury Corner works in 2019

[54]Installing supply points is unlikely to be feasible for larger-scale power demand, as substations will have to be installed, which are extremely costly and would be difficult to achieve planning permission for.

Figure 22. On-street electric vehicle charging

Priority 3

Priority 3: Sustainable Energy Generation and Supply

Why is this important?

Given that the main sources of carbon emissions are from the generation of heat and power, sustainable heat and power provision is a key element of achieving our net zero target. Heat networks can deliver zero carbon heat to buildings and eliminate the need for gas boilers, whilst solar panels and other local sources of clean electricity can reduce our reliance on the electricity grid.

According to the GLA, enough heat is wasted in London to meet 38% of the city's heating demand[55]. Alongside this, a report published by the Committee on Climate Change (CCC) in February 2019 called for new homes to be banned from connecting to the gas grid[56].

We in Islington, as a result of our densely populated urban environment, have large amounts of waste heat, a valuable resource that can be exploited in the fight against climate change and fuel poverty.

By delivering a world-first in capturing the heat from the tube for Phase 2 of our Bunhill Heat and Power Network, Islington is setting an example of best practice nationally and internationally in decentralised energy projects.

Figure 23. Solar panels on the Waste Recycling Centre

[55]https://www.lsbu.ac.uk/stories/waste-heat-recovery
[56]https://www.theccc.org.uk/publications/

Figure 24. The Bunhill 2 Energy Centre on Central Street, which captures heat from the London Underground

The now expanded Bunhill Heat and Power Network is both scalable and can be replicated across the borough. We shall look to increase the number of properties connected to Bunhill and develop new heat networks as per our District Energy Master Plan, published in 2014, which identified potential annual carbon savings of up to 40,000 tonnes while serving up to 8,000 homes.

In addition to heat networks, we also want to increase the capacity of locally-generated electricity by installing more solar PV panels and battery storage units in homes and businesses in our borough. This focus on local, clean electricity generation will both reduce our carbon footprint and reduce our reliance on the electricity grid.

A net zero borough would involve thousands more properties – both residential and commercial – being connected to zero carbon heat networks and having solar panels installed.

What we've done

- Connected the Bunhill Heat and Power Network to two new private developments: 76 Central Street and Worcester Point, around 214 properties.
- Completed Phase 2 of the Bunhill Heat and Power Network and expanded it to serve the King's Square Estate (around 500 properties) and other new developments in the area.
- Completed seven feasibility studies which have identified potential new decentralised energy projects in the Archway area, and the wards of Caledonian, Bunhill and Highbury West.

- Installed over 500kWp of solar PV panels on council buildings, including 222 Upper Street, the Sobell Leisure Centre and the Waste Recycling Centre.
- Launched the Green Smart Community Integrated Energy Systems (GreenSCIES)[57] project in partnership with nine partners including London South Bank University and Transport for London.
- Started THERMOS, an EU-funded project to develop a free online mapping and modelling tool that will aid us in refining our planning for heat networks in the borough.

What we'll do

The council has demonstrated, by already delivering two heat network projects, that we are capable of successfully developing low carbon heat networks.

Our District Energy Masterplan identified 15 clusters of heat networks in the borough. The evaluation of these projects was based on a number of criteria including fuel poverty impact, number of council tenants served and carbon savings.

We have identified a substantial number of secondary waste heat sources that can be tapped into in order to deliver these heat networks. These sources include Combined Heat and Power (CHP) heat rejection, data and telecommunications centres, power substations, sewers and TfL ventilation shafts.

The developing of heat and energy networks helps us address climate change by reducing the level of carbon emissions in the borough whilst providing affordable heat for our residents.

What the council can commit to immediately and actions we will take

- Complete detailed engineering and design of two smart energy networks under the GreenSCIES project, a business case development project with the scope of heating and cooling more than 3,000 homes, providing enough electricity to supply 500 homes and generating more than 10,000 tonnes in carbon emissions savings.
- Conduct further detailed studies on smart energy networks in the borough

Figure 25. A screenshot of the THERMOS tool we are helping develop to map and model new heat networks

[57]http://www.lsbu.ac.uk/about-us/news/smart-energy-network-study-launches

Figure 26. Moreland Primary School, one of the buildings connected to the extended Bunhill Heat and Power Network as part of the phase II project

using funding from the government's Heat Networks Delivery Unit[58].

- Look at opportunities for ground source heat pumps in parks and housing estates.
- Maximise generation of solar power combined with battery storage on council and other buildings.
- Contribute to the government's Heat Networks Market Framework consultation by ensuring the use of low carbon networks while providing consumers with fair pricing and quality of service standards.

What the council sees as potential commitments, but requires further investigation before committing to

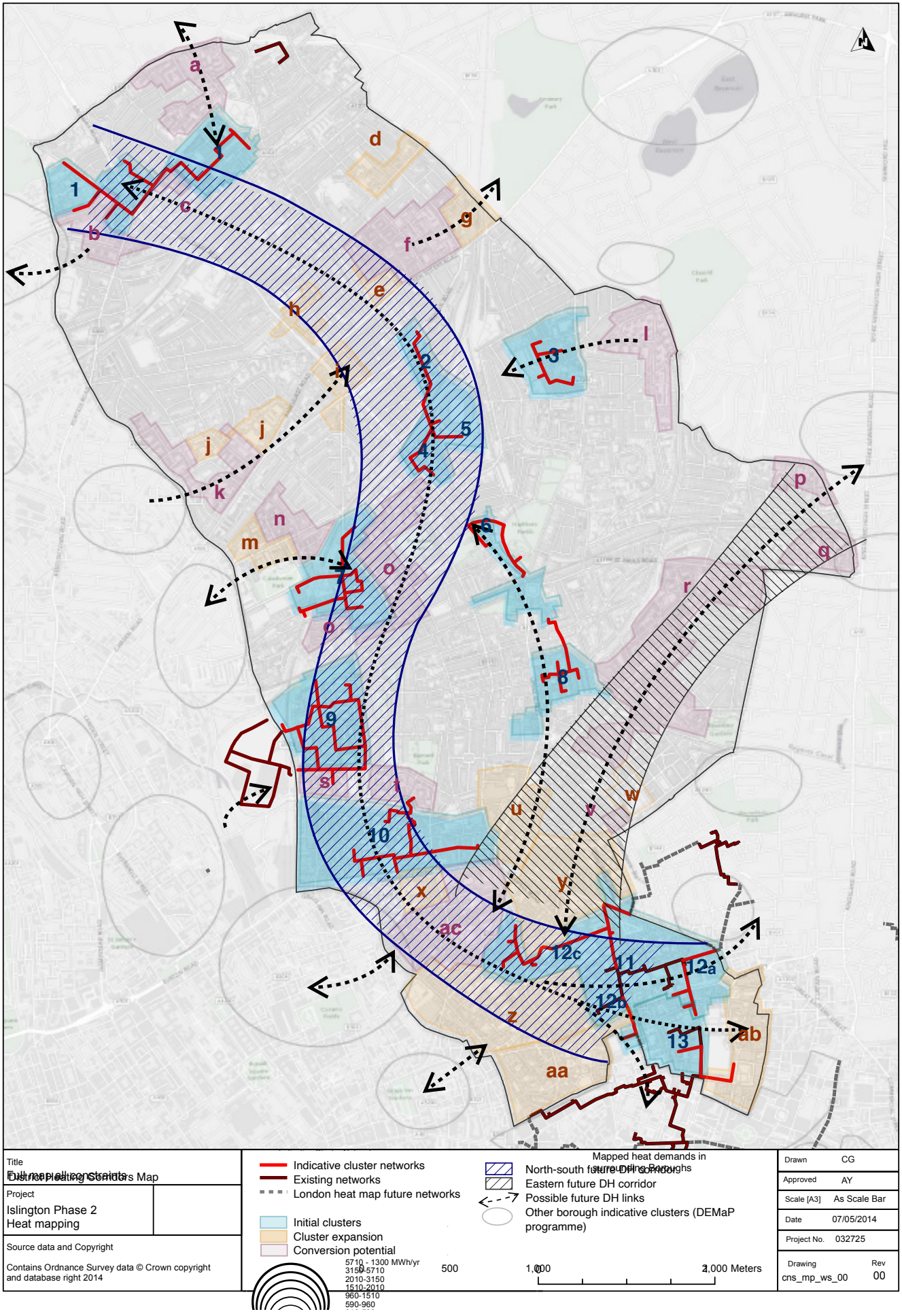
- Continue to participate in innovative national and transnational district heating projects such as CELSIUS 2.0[59], ReUseHeat[60] and THERMOS[61].
- Progress the GreenSCIES project to construction of a next generation smart energy network.
- Seek ways in which we can interconnect with energy centres in neighbouring boroughs e.g. Camden (King's Cross) and the Citigen schemes[62].

What the council needs from others in order for the borough achieve net zero, including funding, powers and legislation

- Strengthen planning rules to make it a legal requirement to connect to low carbon heat networks.
- Request that Government brings in legislation to make renewable electricity the most attractive option for residential and business customers.
- Government to do more to incentivise small businesses to install rooftop solar PV.

[58]https:/www.gov.uk/guidance/heat-networks-delivery-unit
[59]https://celsiuscity.eu/?s=celsius+2.0
[60]https://www.reuseheat.eu/
[61]https://www.thermos-project.eu/home/
[62]https://www.theade.co.uk/case-studies/building-chp/citigen-tri-generation-scheme

Figure 27. A map of potential heat network development in Islington from the Decentralised Energy Masterplan



Priority 4

Priority 4: Affordable Energy and Fuel Poverty

Why is this important?

In simple terms, fuel poverty is the inability of a household to pay for its energy needs without compromising other basic needs like food, transport or clothing[63]. Research shows that there is a high correlation between fuel poor homes and low energy efficiency ratings. Energy efficient homes are key when we consider that they waste less energy and hence produce fewer carbon emissions.

Households in fuel poverty are particularly vulnerable to increasing energy prices of gas and electricity and have very limited options to control the negative effects of cost increases. The latest statistics show that in 2017 around 400,000 households in London were living in fuel poverty[64], an increase of almost 20% on the number in 2015.

High utility bills are a key cause of fuel poverty. The higher the price of fuel that

Figure 28. Energy doctor helping a client

[63]Fuel poverty in England is measured using the Low Income High Costs (LIHC) indicator. Under the LIHC indicator, a household is considered to be fuel poor if they have required fuel costs that are above average (the national median level) and were they to spend that amount, they would be left with a residual income below the official poverty line.
[64]Sub-regional fuel poverty data 2019 (2017 data) measured using the LIHC indicator.

Figure 29. Our Energy Advisors help vulnerable people in Islington and beyond

residents pay, the higher the overall fuel costs that they are required to pay to adequately heat the home. Between 2008-2018 electricity prices increased by 27.9% and gas prices by 15.5% in real terms[65].

Low income is another key cause of fuel poverty. The lower the income the higher the likelihood someone will fall below the official poverty line after paying for housing and fuel costs to adequately heat the home. In Islington, over a third of people are living in poverty (33.7% compared to 27% across London) and one in ten working age adults are claiming out of work benefits[66]. Our efforts to maximise income, therefore, focus on helping residents into work, supporting them to claim the benefits they are entitled to and assisting households in extreme crisis.

Living in a cold home has direct health implications, particularly for the most vulnerable such as infants and the elderly. Excess winter deaths, circulatory diseases, respiratory problems and mental health issues are some of the more common consequences of living in a home that is not adequately heated.

This fuel poverty leads to poor thermal comfort and deepens health inequalities. Excess winter deaths in England and Wales in 2017/18 were the highest on record since 1975/76[67]. In the same period, there were 110 excess winter deaths in Islington. Furthermore, nearly 17,000 of the 56,300 excess winter deaths recorded 2017/18 were identified as preventable and the result of living in cold housing[68].

Broadly speaking, fuel poverty is defined by three main components:

1. Amount of fuels consumed; which is a direct consequence of how energy efficient the household is.
2. Cost of fuels; depending on the prices paid by the user and the offer of affordable gas, heat and electricity.
3. Household income; disposable income to pay for gas and/or electricity.

The council believes that close engagement with residents is vital to understand the reality of fuel poverty for residents of the borough. Most households in fuel poverty are affected by more than one of these variables.

Islington's response has to be tailored to deliver long-lasting benefits as quickly as possible. We have defined a set of actions to mitigate each one of the causes of fuel poverty and thereby limit their impact on seasonal health.

London's high housing costs, expensive labour for delivering energy efficiency measures, high use of pre-payment meters and low levels of energy supplier switching, are the main barriers to overcome in order to close the fuel poverty gap in the borough and minimise its long term effects.

Despite the common perception that Islington is a wealthy borough, it is the 24th most-deprived local authority in England, has the third-highest level of child poverty in the country (36%) and possesses one of the biggest gaps between the wealthiest and poorest residents.

We have three aims to reduce the risk and associated impact of fuel poverty for our residents:

1. Improving energy efficiency.
2. Reducing utility bills.
3. Maximising income.

[65]Domestic energy price indices
[66]Poverty and Inequality Data for Islington (2017)
[67]ONS Excess Winter Mortality in England and Wales (2017 to 2018)
[68]E3G and NEA Report for National Fuel poverty Awareness Day (2019)

The major aspects of improving energy efficiency (heating systems and insulation) are covered in Priority 1 of this strategy.

Reducing fuel bills focuses on helping residents to better navigate the energy market and make informed decisions. This could include moving to cheaper tariffs, support with their utility areas, supplier mediation and delivering cheaper heat through district heat networks.

Although water is not directly linked to fuel poverty, it is one of the core expenses of a household that could affect the ability of the residents to afford gas and electricity. Therefore, it is essential to include it as part of the strategy to minimise the cost of affording utilities for Islington residents.

At Islington we recognise that fuel poverty is a complicated issue which has very real, sometimes even fatal, outcomes for our most vulnerable residents. Islington's flagship fuel poverty project SHINE, the Seasonal Health Intervention Network, has championed a multi-agency response to a multi-faceted issue and, through SHINE, Islington has been able to support thousands of residents every single year.

We want to continue to offer SHINE as a free service in order to improve energy efficiency, reduce utility bills and maximise incomes for residents inside and outside the borough.

SHINE has been recognised with awards from National Energy Action, National Energy Efficiency, the European Commission, the Energy Institute and Ashden. SHINE was profiled by the Organisation for Economic Co-operation and Development (2014), Eurocities (2018) and National Energy Action (2018 and 2019).

SHINE has been used as an example of best practice in fuel poverty support in the BEIS Consultation on Fuel Poverty Strategy (2019), Greater London Authority's Fuel Poverty Action Plan (2018), SHINE was invited to speak on Fuel and Food Insecurity to London's Health & Housing Network (2018) and recently presented learnings from SHINE to the EU Covenant of Mayors (2019).

What we've done

- Set up the **S**easonal **H**ealth **I**ntervention **Ne**twork (SHINE) in 2010, offering a dedicated helpline and affordable warmth interventions from a range of partners to ensure households get the help they need to reduce utility bills, tackle energy debt and ultimately stay well and warm. This was expanded to become a London-wide service in 2016, taking self-referrals and third-party referrals from workers across the public, private and voluntary sectors.
- Set up Angelic Energy in 2017, London's first municipal energy company for over a century. Since then we have acquired over 3,000 households[69] since its launch in 2017, over 60% of whom are Islington residents.
- Provided a 100% green electricity tariff to Angelic customers, consistently outperformed the Big Six energy suppliers

[69]Figures as of 11 October 2019

on standard variable, cheapest fixed direct debit and pre-pay tariffs[70].

- Partnered with a housing association to expand our offering of fair energy tariffs.

What we'll do

There is a need to engage with and support residents of all housing tenures to make the changes needed for us to become a net zero carbon borough. This will include utilising existing channels such as our SHINE advice line[71] and Energy Doctor home visits[72], as well as looking at how we can enable residents to make their own personal climate emergency declarations.

We believe that Angelic Energy, with its focus on fair tariffs and provision of 100% renewable electricity, is a key weapon in the fight against fuel poverty and contributes to our ambitious 2030 net zero carbon target; by not having to answer to shareholders or pay directors bonuses, we can instead reinvest Angelic's

Figure 30. An Islington Energy Doctor installing energy-saving measures in a client's home

[70]Based on prices taken from EnergyLinx.co.uk- taking an average of standard variable tariff, cheapest fixed direct debit tariff and pre-pay tariff based on Ofgem's definition of a medium dual fuel consumer. Price dates considered were from 19/04/2018 to 19/02/2019.
[71]Seasonal Health Intervention Network
[72]Energy Doctor in the Home service

income into providing affordable energy, good customer service and a fairer deal for all.

Angelic's 100% renewable electricity tariff demonstrates that we can tackle both fuel poverty and climate change in tandem. As a council we are currently investigating how we can switch all of our housing stock to 100% renewable energy whilst keeping costs to our tenants as low as possible.

What the council can commit to immediately and actions we will take

- Continue supporting residents in fuel poverty through our SHINE service.
- Participate in the Islington Debt Coalition and feedback developments in energy and water debt advice/relief.
- Educate residents on how to use Pre-Payment Meters (PPMs) through energy advice sessions, public campaigns and self-help resources on the council's energy advice website.
- Maximise the income of people in fuel poverty by making quality referrals made by SHINE into iMax, Income Max, the GLA benefit check service (once launched) and iWork for support with finding a job, apprenticeship, training or education.
- Work with residential Environmental Health to investigate reported Private Rented Sector (PRS) damp/condensation/ mould issues using Housing Health and Safety Rating System (HHSRS).
- Secure ECO/Warmer Homes funding for heating and insulation measures for as long it is available.
- Continue our efforts to provide cheaper and greener energy tariffs through Angelic Energy.

What the council sees as potential commitments, but requires further investigation before committing to

- Reach more fuel poor residents, particularly in the private rented sector, through new partnerships.
- Assist in accelerating the roll out of smart meters through educating sceptical residents and liaising with suppliers directly to deliver installations.
- Better collaboration with housing providers, such as housing associations and TMOs, to maximise referrals.
- Improved referrals on behalf of fuel poor households by developing more sophisticated data and reporting.
- Review the current contract for energy supply and commission new supply arrangements for Angelic.

What the council needs from others in order for the borough achieve net zero, including funding, powers and legislation

- Make the case to the likes of the GLA and Government to increase local authorities' resources to tackle fuel poverty and the zero carbon target in tandem.
- Build up the capabilities of frontline staff e.g. through an accredited 'Energy Doctor' training course to ensure energy efficiency awareness at all levels of frontline delivery.

Figure 31. Energy doctor

Priority 5

Priority 5: The Green Economy and Planning

Why is this important?

To retain a healthy economy and the businesses that provide the goods, services and employment opportunities that we need, we have to move towards a low carbon, more resource-efficient economy that has fewer adverse effects on the environment. As well as existing businesses becoming greener, we need to support the creation and development of new businesses that will provide the technologies, innovations, goods and services of a low-carbon future.

It is now recognised that an economic model built on perpetual growth presents significant challenges to our zero carbon commitments. Growth and development has traditionally equated to more energy-consuming buildings, increases in the movement of people and goods and associated transport infrastructure, the consumption of more materials, and the generation of increased levels of waste.

To tackle climate change, movements such as Democracy Collaborative and New Economics Foundation have long argued that we must transform the economy and do this in a way that works for the majority of people. This is central to our commitment to a fairer and more sustainable economy.

'Net zero' has to become the way we run our economy.

There are around 21,000 registered businesses in Islington, the vast majority of them small or micro (85% are micro, with 0-9 employees), providing some 230,000 jobs. Their success is essential to the vitality and economic success of the borough although around 90% of jobs in Islington are filled by commuters and an estimated 80% of Islington residents in employment work outside the borough.

The 'green economy' has been defined as those industries that contribute toward ecological sustainability, especially through the reduction of carbon emissions, as well as the adoption of broader sustainable resource use practices. There are six key sectors: renewable energy, green building, clean transportation, waste management, land use and green financing.[73]

We need to create a new generation of jobs in the industries and infrastructure we need to tackle the climate crisis, and a workforce that will be able to contribute to and benefit from a new green economy. We want to create good jobs for our residents, support businesses to succeed and attract investment by developing the sub-regional green industry sector and enable all other sectors to reduce their CO_2 emissions to zero.

We believe that greater ownership by employees and democratic corporate governance are central parts of the economic rebalancing that is essential for the UK's long-term prosperity. As a growing sector of our economy, the green economy provides more market space for innovative ownership structures that promote meaningful employee participation. Over the coming years, we will work with social enterprises, voluntary organisations and co-operatives to grow alternative businesses.

We know that we need to position our residents to be skilled for these new sectors, and we are working with our colleges and universities to develop a new workforce for the green industrial revolution. Similarly, we will work with our trade unions and employers to ensure that workers are supported to transition to a green economy, and that no one is left behind in the transition.

[73]Growing a Green Economy for All: From Green Jobs to Green Ownership; pg15

Islington has world-class institutions which attract thinkers and researchers that are at the cutting edge of new thinking in combatting the challenges of the climate emergency. We need to work with them and expand the opportunities for innovative businesses that want to test and commercialise new ideas, and mobilise investors that want to be at the forefront of rapidly growing sectors. International business clusters at the Knowledge Quarter and Silicon Roundabout are prime locations through which to drive further innovation and roll-out of proven technologies and business models.

We need our materials and waste to come from a new circular economy, involving the reuse and recycling of materials already in circulation, and significantly increased use of sustainable and renewable materials. Supply chains need to be further developed to respond to the rapidly growing demand for the expertise and products that are needed to build a zero carbon economy.

The council commissioned a micro and small business survey to understand the challenges small businesses are facing to their survival and growth in the borough and to identify their business support needs. The survey showed many businesses have a concern for the environment and are willing to work with Islington Council on environmental initiatives. They understand that radical change in business practices is required. There is an urgent need for a comprehensive borough-wide programme that engages businesses, helps them to understand climate change, what it means for their organisation and then provides the necessary support and signposting to enable them to put in place and deliver their own bespoke zero carbon plans.

Figure 32. BDP receive the Green Certification Gold Level from ISEP for their exemplary environmental business practice

Financial incentives will change the behaviours and investment decisions of individuals and businesses. Where possible, we will introduce incentives for smaller, independent businesses within the borough, as well as lobby Government and work with the GLA to create new programmes where they are needed.

It is recognised that commercial buildings and transport are responsible for the bulk of carbon emissions and these issues are covered by the buildings and transport sections of this strategy.

Through our Inclusive Economy service and its networks, we can also work with businesses – particularly micro and small enterprises – to help them both transition to lower carbon emissions as well as develop new products, practices and services which will help the borough collectively achieve its targets.

Investment decisions are critical – where we choose to spend our money shapes our economy. Working with our 'anchor institutions' in the borough – those large organisations rooted in Islington – we can influence the business sector. By changing the way we procure goods and services, we can use our collective leverage to incentivise change and enable innovation. By introducing Social Value as a meaningful criterion in our commissioning decisions, we will be able to encourage responsible business practices in

Figure 33. New lighting in the Chemitex pharmacy funded by the council's Energising Small Business scheme

regards to carbon emissions. Similarly, we will work with our anchor partners to interrogate our investment decisions.

What we have done

- Integrated environmental objectives in town centre management approach, encouraging and enabling local traders to develop locally-owned sustainable interventions such as cargo bikes and electric vehicles.
- Set up the Islington Sustainable Energy Partnership (ISEP),[74] which has helped its members cut their carbon emissions by over 31,000 tonnes and saved an estimated £6.7m in energy costs.
- Begun to decarbonise our investment portfolio.
- Launched the Energising Small Business Fund[75], offering grants of up to £1,500 to small businesses in the borough for energy efficiency improvements, including new LED lighting and boiler replacements.
- Facilitated new initiatives with local universities to unlock their expertise in climate change innovation e.g. sponsored a weekend hackathon with City University London on Islington's zero carbon ambition.
- Established a partnership with Heart of the City, to support local small enterprises to develop their capacity as responsible businesses including reducing carbon emissions.
- Promoted environmental initiatives and opportunities, such as the Energising Small Business Fund grants and scrappage schemes, to businesses through town centre management groups and other business networks that the council facilitates and collaborates with.

What we'll do

What the council can commit to immediately and actions we will take

- Embed the council's ambition towards a net zero requirement in the contractual arrangements for all council-secured affordable workspace.
- Complete the development of a skills strategy that will identify priority areas for 'green jobs' and emerging skills requirements. These could include jobs related to installing insulation and other energy-saving measures, renewable energy, sustainable food production, cycle freight.
- Promote and incentivise inclusive innovation through Islington Council's expanding affordable workspace network, on solutions to Islington-based climate challenges.
- Use the business fora and networks that we facilitate and our many direct interactions with businesses to increase awareness of the need to tackle climate change and environmental issues, as well as the solutions to the crisis and responsible ways of responding.
- Increase awareness of a 'sharing economy', working with voluntary, community and social enterprise organisations to encourage and incentivise a circular approach to the use of resources.
- Further explore collaborative models with anchor institutions such as the Whittington Hospital and City University, and networks

[74]http://isep.org.uk/islington-sustainable-energy-partnership-about-us-2/
[75]https://www.islington.gov.uk/business/energy-services/energy-efficiency-grants-for-small-businesses

Figure 34. Islington Sustainable Energy Partnership Awards

such as the Knowledge Quarter, to reduce carbon emissions, including through their commissioning and procurement processes.

- Seek increased support to circular economy social enterprises, for example through inclusive financing to support scaling.
- Create and expand local 'green collar' jobs all the jobs created by firms and organizations working in environmentally-focused industries. Green collar jobs are green jobs that provide a career ladder to move low-income workers into such employment.
- Complete the decarbonisation of our investment and pensions portfolio, and work with anchor institutions to take zcollective action.
- Grow institutional sponsorship of innovation that will contribute to the delivery of zero carbon targets, as well as support the development of an inclusive investment model for 'green economy' businesses to scale innovations.

What the council sees as potential commitments, but requires further investigation before committing to

- Recognising that some current jobs will be less suited to a low carbon economy, help support a just transition towards new employment opportunities, engaging with trade unions and employers.
- Consider best practice in using Social Value clauses regarding environmental impacts through the review of the council's Procurement and Commissioning Strategy. This will include prioritising local supply chains and incentivising businesses to implement net zero policies.

What the council needs from others in order for the borough achieve net zero, including funding, powers and legislation

- Government to relax planning rules to allow the installation of more energy efficiency measures – for example, making external wall insulated permitted development in all cases outside conservation areas and listed buildings.

Planning

Islington's Local Plan policies are currently being updated, with the new Local Plan due for adoption in summer 2020. The planning policies relating to energy have been strengthened in order to ensure that Islington continues to take a robust and ambitious approach to minimising carbon emissions in the borough and to achieve the target for all buildings in Islington to be net zero carbon. The Draft Local Plan includes the following policies:

- Require all development proposals to maximise energy efficiency and minimise on-site greenhouse gas carbon dioxide emissions in accordance with the energy hierarchy: Be Lean, Be Clean, Be Green.
- Continue to require all major developments and minor new-build residential developments of one unit or more to be net zero-carbon by achieving specific targets for on-site carbon reductions, and offsetting any remaining emissions through the council's carbon offset fund.
- Ensure all development proposals reduce energy demand as far as possible through high standards of fabric energy efficiency, before reducing emissions through low-carbon energy sources and renewables. In particular, the Draft Local Plan has introduced a requirement for residential developments to adopt the Zero Carbon Hub's Fabric Energy Efficiency Standard (FEES), which sets minimum requirements for energy efficiency.
- Continue to enable the extension of Islington's heat networks by requiring developments to connect to existing or planned heat networks, where possible.
- Require the use of secondary heat and other low and zero-carbon heat sources, where heat network connection is not possible, and set a maximum annual carbon content of heat for heating systems of less than 280 gCO_2/kWh.
- Support the decarbonisation of heat networks through the planned future transition to networks powered by cost-effective secondary sources, including low-grade waste heat, as opposed to gas-powered Combined Heat and Power (CHP).
- Encourage the use of renewable energy, particularly solar photovoltaic (PV) panels, where appropriate.
- Commitment to deliver an Islington Zero Carbon Supplementary Planning Document (SPD).

The required minimum on-site carbon reduction targets and minimum reductions in energy demand are likely to increase over time in future Local Plan updates (updated every five years), in order to ensure that carbon emissions continue to be reduced. The gradual changes in targets will take account of the reducing costs of more efficient construction methods and the availability of low and zero carbon heat and related technologies.

Achieving the net zero carbon target will also rely on government policy and legislation at the national level, particularly in relation to the decarbonisation of the electricity grid and retrofitting existing buildings, as well as the evolution of carbon reduction targets through updates to the Building Regulations. The council is, however, committed to reducing carbon emissions as far as possible. The Energy Team reviews the energy statements of major planning applications to ensure that developers are meeting our policy requirements.

Figure 35. Solar panels on the roof of the council's offices at 222 Upper Street

Priority 6

Priority 6: The Natural Environment, Waste Reduction and Recycling and Carbon Offsetting

Why is this important?

At a time when concerns about climate change are growing stronger, we need to remember the important role that biodiversity and the natural environment plays in climate control.

Our actions as a borough will be in line with the 2020 Environment Bill, which aims to tackle biodiversity loss, climate change and environmental risks to public health. Islington's green infrastructure is essential in reducing the impacts of climate change on the lives of our residents. Vegetation has been shown to reduce the effects of raised urban temperatures through evaporative cooling, shading surfaces, and allowing natural drainage. This can work in reverse in winter where greenery such as green roofs and walls can reduce the heat lost by buildings by providing better insulation and thus lowering energy use. Street trees and urban greening are also a major contribution to the capture and storage of CO_2 and improvement of air quality. As well as vegetation, the presence of open bodies of water, such as ponds, can assist with the cooling of surrounding areas and in reducing daytime temperatures.

The main driving force behind climate change is the concentration of carbon dioxide (CO_2) in the atmosphere. The natural environment can help mitigate climate change by storing and sequestering atmospheric carbon as part of the carbon cycle. An example of the role that the natural environment in carbon storing and sequestration is the role trees play. Since about 50% of wood by dry weight is comprised of carbon, tree stems and roots can store up to several tonnes of carbon for decades or even centuries.

As trees die and decompose, they release this carbon back into the atmosphere. Therefore, the carbon storage of trees and woodland is an indication of the amount of carbon that could be released if all the trees died.

Maintaining a healthy tree population will ensure that more carbon is stored than released. Utilising the timber in long term wood products or to help heat buildings or produce energy will also help to reduce carbon emissions from other sources, such as power plants.

Islington's inventory trees sequester an estimated 431 tonnes of carbon per year, with a value of £105,812. For comparison, the average newly registered car in the UK produces 34.3g of carbon per km. Carbon sequestration by Islington's public trees therefore corresponds to around 12,553,936 'new' vehicle km per year.

While it is understood that Islington doesn't have the open space to plant the volume of trees to significantly capture the carbon emissions within the borough, trees in Islington make a significant contribution to ensuring that the borough is a greener, healthier and more enjoyable place to live.

The best measure of trees in an urban environment is tree canopy cover; this can be defined as the area of leaves, branches, and stems of trees covering the ground when viewed from above.

The overall canopy cover of Islington is estimated at 25%. In comparison with other studies (Urban Tree Cover, 2018), the canopy cover is above the average (17%) estimated in the 320 towns and cities surveyed in the UK. In comparison to the rest of London, Islington is above the average of 21% canopy cover.

The Islington-owned trees contribution to carbon capture and sequestration has been

Figure 36. Gillespie Park's Ecology Centre gives advice on wildlife, gardening and sustainable living

assessed. Overall, the publicly owned trees in Islington store an estimated 18,166 tonnes of carbon with a value of £4.46 million.

By ensuring that, where possible, the trees planted are native, you can help to preserve and enhance Islington's environment and biodiversity in line with Islington's Biodiversity Action Plan.

We expect there to be multiple benefits of this:

- Trees increase resilience to climate change and are a visible and tangible demonstration of council action towards carbon neutrality.
- Moderating temperatures and saving energy.
    - Tree windbreaks can reduce residential heating costs 10-15% in winter.
    - In summer, shading and evaporative cooling from trees can reduce the ambient temperature and cut residential air-conditioning costs 20-50%.
    - Trees act to reduce the heat in urban areas, known as the 'urban heat island effect.'
- Improving air quality by removing pollution.
- Reducing storm water runoff.
    - Avoided runoff by Islington public trees is 15,721m^2 per year.
    - Value of Storm water interception is £23,838 per year.
- Trees increase the amenity and general pleasantness of an area.
- There is increased retail dwell and spend in an area with trees.

With respect to waste recycling and reduction, as detailed earlier, the emissions figures for Islington do not include emissions related to the production and shipping of goods and food consumed in the borough, nor emissions from flights taken by Islington residents. However, these are emissions that we – the council, residents and businesses – still have control over through our consumption and travel habits.

The council will need to look at the supply chain of the goods we buy and consider the impact of producing and transporting them. Whole-life costs will need consideration, and preference should be given to products that last longer or can be easily repaired rather than replaced.

When carrying out capital works, the council should ensure that the design minimises the amount of materials required and eliminates the need for future works such as regular repainting – the choice of building materials such as wood that lock in carbon would be particularly beneficial.

Through agencies such as our Trading Standards team, who enforce consumption-related legislation, we can exert influence over production and consumptions habits e.g. the Packaging (Essential Requirements) Regulations 1998, which place controls on excess packaging.

Our Waste Reduction and Recycling Plan sets out how Islington will meet its waste and recycling objectives and is a key part in tackling our climate emergency.

Our Reduction and Recycling Plan sets four recycling and waste objectives:

- Objective 1 - Reduce waste focusing on food waste and single use packaging.
- Objective 2 - Maximise recycling rates.
- Objective 3 - Reduce the environmental impact of waste activities (greenhouse gas emissions and air pollutants).

- Objective 4 - Maximise local waste sites and ensure London has sufficient infrastructure to manage all the waste it produces.

It commits us to:

- Reducing overall levels of household waste, particularly food and plastic waste.
- Reducing emissions from our fleet.
- A household recycling target of 33% by 2022 and 36% by 2025.
- Developing a circular economy action plan.

A circular economy is an alternative to a traditional linear economy (take, make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life. Islington is committed to supporting the transition to a circular economy.

A circular economy for Islington goes beyond managing waste in the most sustainable way possible, reducing, reusing, composting and recycling. It involves how we procure goods to maximise product lifespan, reuse and repair. It involves planning policy to encourage sustainable development. And it involves developing policies to encourage sustainable economic development. A carbon neutral Islington by 2030 will require this transition and will require our residents and businesses to join us in this transition.

What we've done

- In the last ten years we've felled 2,784 trees and planted 3,703 on public land. This is a net increase of 919 trees.
- Required all developments to maximise the provision of green roofs and the greening of vertical surfaces as far as reasonably possible, through planning policies and planning conditions.
- Ensured that existing trees are protected where possible and appropriate numbers and species of new trees are planted in new developments.
- Ensured the trees we currently plant are sourced sustainably and with appropriate biosecurity if imported.
- Encouraged residents/businesses to get involved in greening their community spaces, gardens and businesses through the Islington in Bloom competition and given other groups opportunities e.g. Friends of Parks Groups.
- Provided all residents with a minimum weekly recycling collection and most residents with a food waste and garden waste recycling collection.
- Worked with our North London Waste Authority partners to promote reuse and waste reduction.
- Taken action to reduce single use plastic, including launching our first 'low plastic zone' and installing new drinking fountains.
- Encouraged reuse, for example through setting up and worked with Bright Sparks.
- Launched a Recycling Champions scheme.

Figure 37. Gillespie Park

Figure 38. Tree planting in Islington

What we'll do

We will aim to increase the canopy cover in the borough from 25% to 27% by 2030 by protecting our tress and open spaces and increasing our woodland in line with our Biodiversity Action Plan.

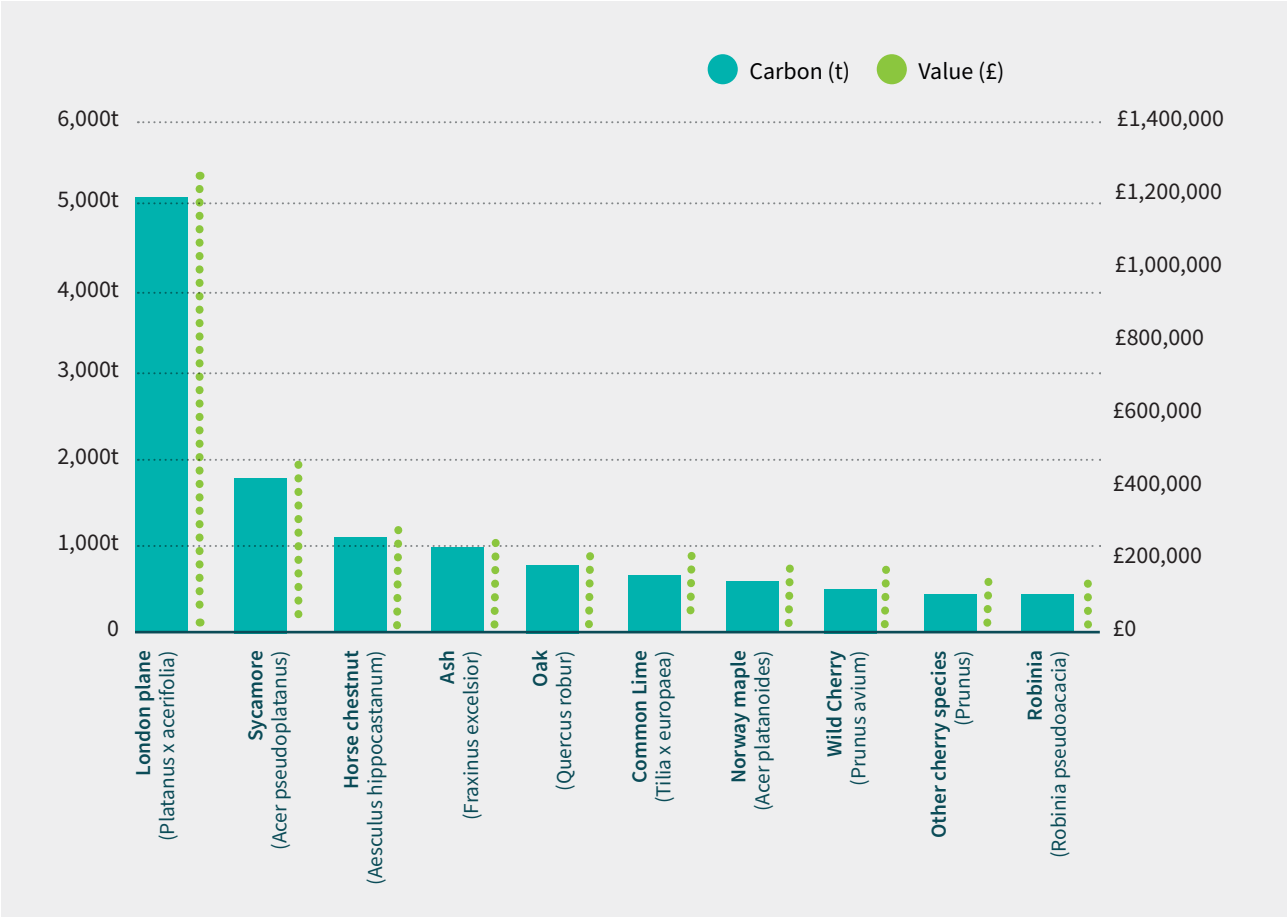
- Continue to protect and improve our natural environment as outlined in our Biodiversity Action Plan.
- Provide guidance to developers on how to comply with planning policies that seek to maximise biodiversity gains.
- Condition appropriate recommendations in ecological submissions from developers.
- Identify new opportunities to increase the amount of green infrastructure on all council public realm developments.

Islington provides nearly all its residents with a minimum weekly collection, from their home or local collection point, of a wide range of dry recyclable materials, food waste and garden waste, a service that exceeds the requirements of the London Environment Strategy.

Islington is also one of constituent boroughs of the North London Waste Authority which covers a population of over 2million residents and 3% of the country's waste. Part of the Authority's strategy is the North London Heat and Power Project which aims to replace current facilities at Edmonton EcoPark which will generate low-carbon heat and power for up to 127,000 homes. This initiative supports our zero carbon ambitions by saving the equivalent of over 200,000 tonnes of carbon dioxide when compared to landfill.

	2019		2050
	Tonnes	Value	Tonnes
Carbon Storage	18,166	£4,463,091.00	19,047
Carbon Sequestration	431	£105,812.00	452.5

Figure 39. Carbon Storage (tonnes) for Top Ten Tree Species in Islington.[76]



However, there is also a responsibility on individuals to effectively use the services we provide. Recycling is compulsory in Islington but we will continue to do what we can to encourage and educate our residents about the benefits of recycling and reducing waste.

By 2022 we will:

- Expand food waste collections to all remaining purpose-built blocks of flats and have trialled the service for flats above shops.
- Investigate options and develop a business case for expanding commercial recycling services in the borough.
- Further improve the quality off communal recycling sites on estates.
- We will explore all opportunities with partners in which we can offset our remaining emissions where possible.

What the council needs from others in order for the borough achieve net zero, including funding, powers and legislation

- Review with our partners our current operations around commercial waste reduction and recycling.
- Government to progress proposals for bans on certain types of unnecessary single use plastic.
- Government to progress proposals for charges on certain single use items, such as plastic bags and coffee cups.
- Government to progress proposals for a tax on plastic packaging that does not contain 30% recycled content.

[76]Carbon storage: The amount of carbon bound up in the above-ground and below-ground parts of woody vegetation.

Do you need this information in another language or reading format such as Braille, large print, audio or Easy Read?
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Published xxx 2020