

# **How can Local Authorities Work Towards Green Recovery?**

*February 2022*

# Contents

<b>1. Introduction</b> .....	1
<b>2. Climate Change in the UK</b> .....	3
<b>3. The Government Perspective</b> .....	6
3.1. Funding.....	7
3.2. COP26 and The Paris Agreement.....	8
<b>4. The Role of Local Authorities</b> .....	9
<b>5. Electric Vehicles</b> .....	11
5.1. Case Study: Cambridge’s Taxi Fleet.....	14
<b>6. Charging Infrastructure</b> .....	16
6.1. Case Study: Carlisle City Council and Charging Infrastructure.....	18
<b>7. Clean Air Zones</b> .....	20
7.1. Case Study: Portsmouth’s Clean Air Zone.....	22
<b>8. Town Planning</b> .....	23
8.1. Case Study: Solihull and Low Carbon Heat Pump Power.....	25
<b>9. Social Housing</b> .....	27
9.1. Case Study: Fenland District Council: Energy Efficient Homes.....	29
<b>10. Renewable Energy</b> .....	30
10.1. Case Study: A New Wind Turbine and Geothermal Farming in Cornwall.....	32
<b>11. Biodiversity Net Gain</b> .....	34
11.1. Case Study: Reforesting in Hampshire.....	36
<b>12. Restoring Nature</b> .....	38
12.1. Case Study: Wiltshire Council and the Community Environmental Toolkit.....	39
<b>13. Conclusions</b> .....	41
<b>References</b> .....	44



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# 1. Introduction

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A tall, grey industrial smokestack with a red and white striped band near the top is positioned in the lower right corner. A thick, white plume of smoke rises from the stack, spreading across the sky. The sky is filled with soft, white and grey clouds, and the overall lighting suggests a sunset or sunrise, with a warm, golden glow. The top of the image has a solid green background, and the bottom has a solid yellow background.

The UK will struggle to reach net zero by 2050 unless central and local government work together to deliver solutions tailored to meet local circumstances. No layer of government is closer to local people, or better able to tailor climate action to meet the needs of communities than local government. Only by harnessing local government can central government deliver a just transition that benefits all communities.

Throughout the UK, there are brilliant examples of local action, innovation, and excellence, all of which are helping to deliver on net zero ambitions. The Government have stated that they are committed to working more closely with local areas to ensure that we are harnessing the power of local action to deliver our national ambitions.

This report will provide recommendations and case studies on ways that local authorities can work towards green recovery.

The United Nations has defined climate change as long-term shifts in temperature and weather patterns [2]. These shifts can be natural due to variations in the solar cycle however, since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil, and gas.

Greenhouse gas concentrations are at their highest levels in 2 million years. Emissions continue to rise, as a result the Earth is now about 1.1°C warmer than it was in the late 1800s. The last decade (2011-2021) was the warmest on record.

The consequences of climate change include:

- Droughts
- Water scarcity
- Severe fires
- Rising sea levels
- Flooding
- Melting polar ice
- Catastrophic storms
- Declining biodiversity

These consequences have already been felt by communities globally; Governments and local authorities must take control of the situation before it goes past the point of no return.

This report will provide examples of steps that local authorities in the UK have already taken to ensure that they are playing their part in national and global green recovery. Transitioning to electric vehicles for public use, adopting clean air zones, ensuring that town planning considers green health, making social housing more energy efficient, building renewable sources of energy, encouraging biodiversity net gain, and working to restore nature are all key to green recovery from local level up.





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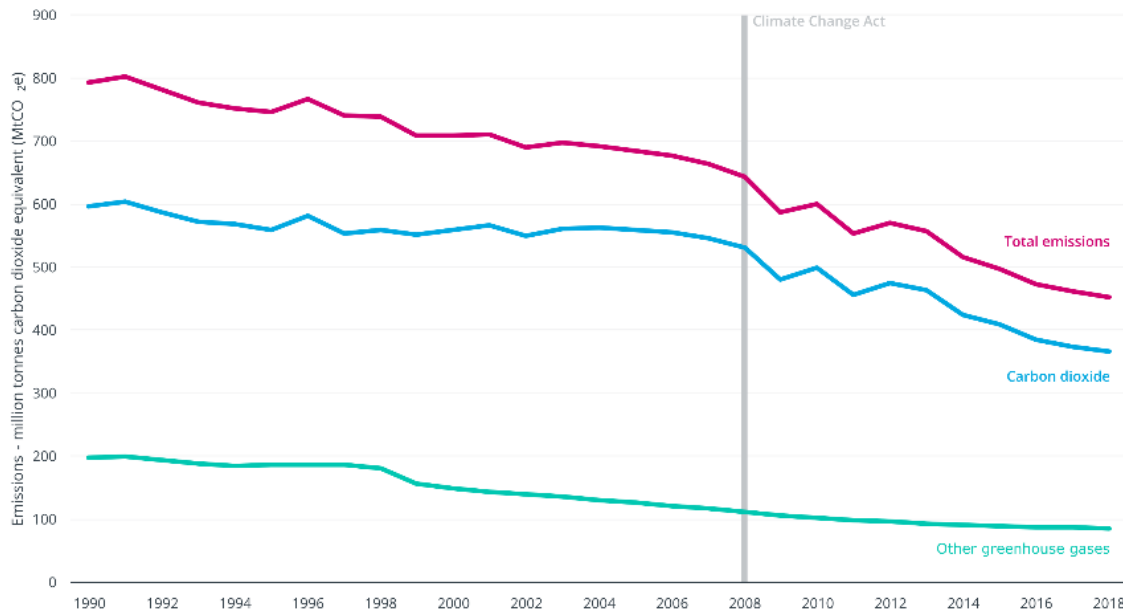
# 2. Climate Change in the UK

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The UK's emissions of greenhouse gases have been falling steadily over the past 30 years, though levels have risen globally. In 2018, UK emissions stood at 57% of their 1990 levels [3].

UK - Total emissions of greenhouse gases, 1990-2018



Source: Institute for Government analysis of: *Final UK greenhouse gas emissions national statistics*, BEIS, February 2020



### *UK total emissions of greenhouse gases (Updated: 20 Apr 2020) [3]*

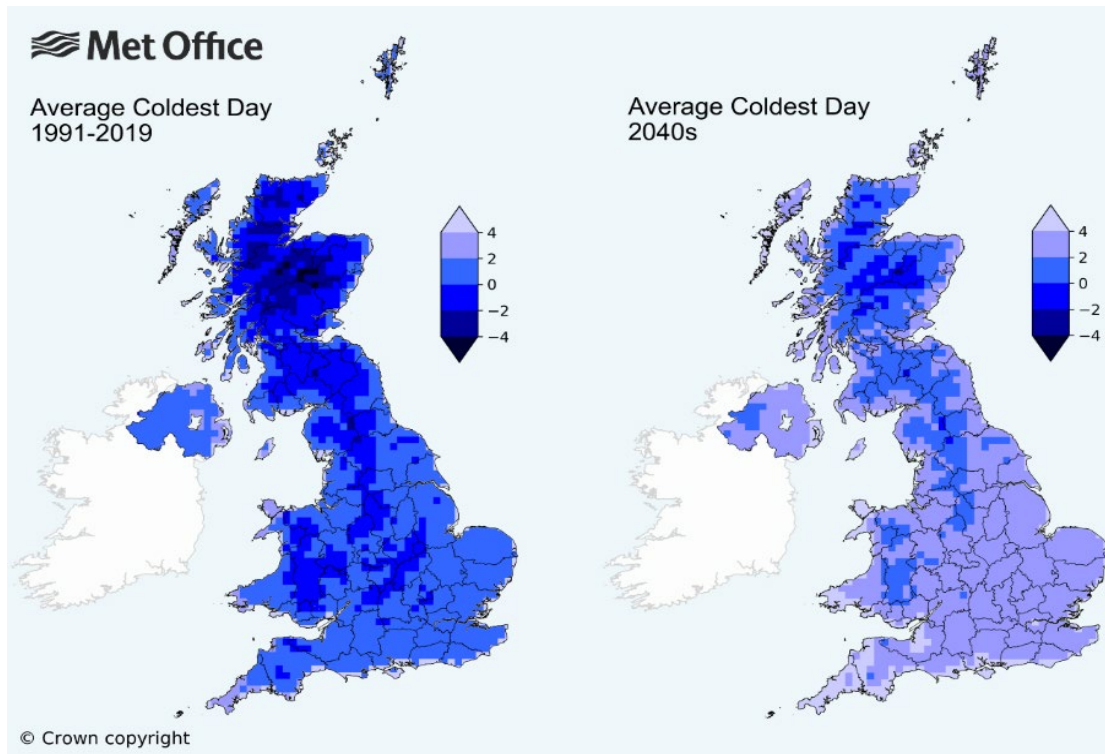
Greenpeace have stated that although the UK is a small collection of islands, it is a big contributor to global greenhouse emissions. The UK is one of the worlds' greatest contributors to global warming historically.

This is partly due to the long history of burning fossil fuels during the Industrial Revolution in the eighteenth and nineteenth centuries [4].

Now, due to climate change, the Met Office predicts that in the future, the UK will see [5]:

- Warmer and wetter winters
- Hotter and drier summers
- More frequent and intense weather extremes

Climate change is causing warming across the UK. The ten warmest years on record in the UK have been experienced since 2002. The Met Office have stated that heatwaves are now 30 times more likely to happen due to climate change.



*Met Office predictions demonstrating that winters will become warmer [5]*

UK winters are forecast to become warmer and wetter on average, although cold or dry winters will still occur sometimes. Summers are projected to become hotter and drier and by 2050 heatwaves like that seen in 2018 are expected to happen every other year.

Even if greenhouse gases are successfully reduced, sea levels around the UK will keep rising beyond 2100. This means that parts of the UK will be at danger of flooding, particularly low lying, and coastal cities.

Farming in the UK will also be affected. Hotter weather and higher levels of CO<sub>2</sub> may make growing crops easier, or even allow the production of new ones.

However, with more droughts forecasted, water may not be as easy to access which will compromise farming. Some crops that are grown today in the UK might not be suited to higher temperatures.

Extreme weather can cause damage to buildings, disrupt transport, and affect public health. Buildings and infrastructure will need to be adapted to cope with the new conditions.

To curb these effects, there needs to be a global effort from both Governments and local authorities to slow down the trajectory of global warming.





# 3. The Government Perspective



The UK was the first country in the world to create a legally binding national commitment to cut greenhouse gas emissions.

The Climate Change Act 2008 provides the framework for UK climate change policy. It established long-term statutory targets for the UK to reduce its greenhouse gas emissions [6].

The Act committed the UK to reducing its greenhouse gas emissions by 80 per cent by 2050, compared to 1990 levels. However, this target was made more ambitious in 2019 when the UK became the first major economy to commit to a 'net zero' target. The new target requires the UK to bring all greenhouse gas emissions to net zero by 2050.

The Climate Change Act of 2008 requires the government to set binding, five-yearly carbon budgets based on the latest science, and economic circumstances. This long-term approach to cutting emissions is supposed to deliver results at the lowest possible cost.

### **3.1 Funding**

On the 7<sup>th</sup> of December 2021, the Government announced that over £116 million of funding is being invested into green innovation across the UK [7].

The funding will see projects across the country develop new technologies that increase energy efficiency in homes and buildings, reduce carbon emissions, boost the UK's energy security, and provide cleaner ways to generate power and heat.

The investment will assist the projects to play a key part in the UK's green industrial revolution, putting British business at the forefront of green innovation, helping to generate green jobs and kickstart millions of pounds of private sector investment.

As part of the Heat and Building Strategy the Government has committed £9 billion of investment to increase the energy efficiency of homes, schools, and hospitals. This investment will help cut emissions while saving social housing tenants around £170 per year on energy bills

In addition, the Government is supporting energy entrepreneurs across the UK with £30 million in funding to develop a wide range of new decarbonisation and energy saving technologies.

Further funds are being released for SMEs with support services, in the form of £22.8 million to help accelerate their green innovations [7].

### **3.2 COP26 and The Paris Agreement**

The UK hosted the 26<sup>th</sup> UN Climate Change Conference of the Parties (COP26) in Glasgow between 31<sup>st</sup> October – 13<sup>th</sup> November 2021.

The COP26 summit brought parties together to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change.

The Paris Agreement is a legally binding international treaty on climate change. On 12 December 2015 it was adopted by 196 Parties at COP21 in Paris, it entered into force on 4 November 2016.

The goal is to prevent the worst consequences of global warming by limiting global temperature rises to 1.5 degrees Celsius. The aim is for countries to peak their carbon emissions by the middle of the century before rapidly cutting them.

The Paris Agreement was the first time that a binding agreement had brought together all nations into a common cause to undertake efforts to combat climate change and adapt to its effects.

### **Outcomes of COP26:**

After 13 days of negotiations, COP26 concluded on Saturday 13th November 2021 with every Party at COP26 - representing almost 200 countries - agreeing the Glasgow Climate Pact. This global agreement will accelerate action on climate this decade, and finally completes the Paris Rulebook.

The core elements of the Glasgow Climate Pact are:

**Mitigation** - Reducing emissions. Over 90% of world GDP is now covered by net zero commitments. 153 countries put forward new 2030 emissions targets.

**Adaptation** - Helping those already impacted by climate change. 80 countries are now covered by either Adaptation Communications or National Adaptation Plans to increase preparedness to climate risks. This is the first time an adaptation specific financing goal has ever been agreed globally. Nations have announced new partnerships to improve access to finance, including for Indigenous Peoples

**Finance** - Enabling countries to deliver on their climate goals. 34 countries and five public finance institutions will stop international support for the unabated fossil fuel energy sector next year. Private financial institutions and central banks are moving to realign trillions towards global net zero.

**Collaboration** - Working together to deliver even greater action. An acceleration of collaboration between governments, businesses and civil society to deliver on climate goals faster. While collaborative councils and dialogues in energy, electric vehicles, shipping, and commodities will help deliver on commitments.

Post COP26, international efforts to control Climate Change should strengthen through a shift in institutional attitudes that are now legally bound. However, the Climate Change Committee have stated that local authorities have just as much responsibility as Government in reaching net zero targets [8].

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# 4. The Role of Local Authorities

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It is important for local authorities to be aware that the UK is currently not on track to meet its previous, less ambitious, target of 80% emissions reductions by 2050. The Climate Change Committee has said that getting to net zero is “technically feasible but highly challenging”. Doing so will require sustained policy interventions across several sectors – many of which will be complex, costly and time-consuming [3].

Around 300 councils in the UK have declared a climate emergency. Councils are taking action to reduce their own carbon emissions, working with partners and local communities to tackle the impact of climate change on their local area.

A report published in 2020 by the Climate Change Committee titled **Local Authorities and the Sixth Carbon Budget** highlighted that more than half of the emissions cuts needed rely on people and businesses taking up low-carbon solutions - decisions that are made at a local and individual level [8].

Many of these decisions depend on having supporting infrastructure and systems in place. Local authorities have powers or influence over roughly a third of emissions in their local areas.

Additionally, top-down policies go some way to delivering change but can achieve a far greater impact if they are focused through local knowledge and networks.

Four key things are needed to achieve this vision of collaborative delivery:

- **Framework:** An agreed framework for delivery for Net Zero incorporating local and national climate action
- **Financing:** Appropriate long-term financing to support local authorities in delivering Net Zero
- **Flexibility:** Local operational flexibility around how local areas address climate change
- **Facilitation:** coherent policy and powers for the facilitation of delivery

In June 2021 a report titled **Recognising local authorities as key partners in the Net Zero Strategy** was published as part of a collaborative effort between government and environmental and research organisations including: Greenpeace, Solace, Friends of Earth, Ashden, The Local Government Association, The Grantham Institute and Green Alliance [9].

They created a blueprint for how the government can accelerate climate action and a green recovery from coronavirus at the local level. They believe that local authorities are an indispensable partner in reaching the UK’s national net zero target by 2050 and the milestones we will need to achieve along the way.

The report highlighted that local authorities have an unparalleled understanding of the local history and context due to their long standing statutory and leadership roles.

They can shape long-term solutions by making best use of local strengths and help to avoid top-down policies becoming ineffective in the local context.

Support from central government for local authorities to deliver on climate and nature policies will offer a significant return on investment due to:

**Control of critical functions and infrastructure needed for long-term action:** Local authorities have control over the public realm, transport planning, waste management, economic regeneration, land use planning and regulation of energy efficiency standards.


**A place-based approach will deliver co-benefits:** To ensure decarbonisation policies are beneficial local authorities can encourage collaboration across all of their functions, including public health, planning, housing delivery and air quality. A place-based approach works towards other national government priorities including reducing inequality, levelling up and a green economic recovery.

**High levels of trust amongst local stakeholders:** Local authorities are highly trusted organisations, with unique relationships with the public, private and third sectors.

A 2021 survey by the Local Government Association found that over 70% of residents trusted local authorities to make decisions about services in their area, compared to under 20% for central government. This enables them to deliver change in a way that can foster local support and partnerships to drive forward private sector and community decarbonisation.

**Cross-local authority learning and best practice sharing:** There are established peer learning networks amongst local authorities, which enables them to share best practice and benefit from the wide variety of potential approaches [9].

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# 5. Electric Vehicles

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In November 2020 the UK Government announced that the sale of new petrol and diesel cars will be banned by 2030. This will put the UK on course to be the first G7 country to decarbonise cars and vans.

Car manufacturers will be required to produce more zero-emission vehicles each year under Government plans to speed up the transition from fossil fuels to electric cars [10].

This includes electric vehicles (EV's). Electric vehicles have an electric motor instead of an internal combustion engine. The vehicle uses a large traction battery pack to power the electric motor and is then plugged in to an electric charging point to recharge.

A 2-step phase-out plan set out by the government involves:

**Step 1:** will see the phase-out date for the sale of new petrol cars and vans brought forward to 2030

**Step 2:** will see all new cars and vans be fully zero emission at the tailpipe from 2035.

EV's have low running costs as they have fewer moving parts for maintaining and are also environmentally friendly as they use little or no fossil fuels (petrol or diesel).

In 2020, new electric vehicle registrations were 186% higher than the year before with 108,205 new electric vehicles being sold. Despite their increasing popularity, electric cars accounted for around 7% of all new cars sold in the UK in 2020 [11].

If you buy a new electric car in the UK, you will automatically qualify for a £1,500 discount if the car is priced under £32,000. The plug-in car grant (PICG) is funded by the Government and is automatically deducted from the advertised price of the car.

There are many benefits of driving an electric vehicle [12]:

**Less environmentally harmful:** Pure EVs have no tailpipe, so they don't emit any exhaust gases, which reduces local air pollution particularly in congested cities.

**No congestion charge:** Many areas are introducing Clean Air Zones that charge vehicles for entering these areas with the aim of reducing pollution. Electric vehicles are exempt from these charges.

**Lower running costs:** On average, an electric car costs less than £1.30 to drive 100 miles vs £11.05 for a petrol car. Maintenance costs are also lower.

**Better driving:** EVs have more responsive acceleration and regenerative braking when easing off the accelerator. They usually have a low centre of gravity, which improves handling, comfort, and safety.

## 5.1 Case Study: Cambridge's Taxi Fleet

Cambridge City Council identified that taxi emissions were a significant contributor to pollution in the city. Air Quality reviews provided detailed analysis showing that taxis were contributing more than 10 per cent of polluting emissions in the city centre [13].

With the help of funding from the Office for Low Emission Vehicles (OLEV) they implemented a project to transition to an ultra-low emission taxi fleet through both licensing policy changes, supporting infrastructure and some financial incentives.

The council introduced policy to mandate EV vehicles for newly licensed taxis and introduced dedicated taxi rapid charging infrastructure in Cambridge.



*A charging point for taxis in Cambridge*

A transition to plug in hybrid and fully electric taxis within ten years has been ensured by Cambridge City Council. The first 12 charge points have been installed at key locations influenced by the taxi trade and practical considerations.

A further 9 charge points will be installed before March 2022. 10 percent of the Cambridge taxi fleet is now fully electric, with this set to raise over the coming years.

The council have confirmed that installing rapid charging infrastructure is not straightforward, there are significant constraints on locating chargers and electricity supplies.

They have also stated that early and ongoing meaningful consultation is required. They began with a feasibility study that canvassed driver and operator views on the transition, infrastructure location, costs, and vehicle availability. This influenced both the policy and infrastructure provision.

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A photograph of a row of white electric cars parked at a charging station. Each car is connected to a charging station with a green light indicating it is charging. The cars are parked in a line, and the charging stations are visible on the left side of the image. The background shows a building and some trees.

# 6. Charging Infrastructure

With new charging points being added daily, the UK's charging point infrastructure is continually changing and growing. As of November 2021, there are now more than 42,000 charge point connectors across the UK, in over 15,500 locations [14].

Charge points are often located in supermarkets, shopping centres, public car parks, hotels, and service stations.

According to EDF, charging an EV can take anything between 30-60 minutes and 8-10 hours. It depends on the size of the battery; how many miles are driven between charges and the power rating of the charger used.

There are 3 main types of charger:

- **Slow** - usually rated up to 3kW is mainly used to charge overnight at home or workplace. Takes 8-10 hours to fully charge.
- **Fast** - rated at either 7kW or 22kW and can usually be found in car parks, supermarkets, leisure centres. Takes 3-4 hours to fully charge.
- **Rapid** - typically rated from 43kW and found at motorway service stations, petrol stations, supermarkets. Takes 30-60 minutes to fully charge but is only compatible with rapid-charging function EVs [14]

In May 2021 The Local Government Association (LGA) commissioned local partnerships to carry out research into the role of local authorities in delivering the electric vehicle (EV) charging infrastructure [15].

The purpose of the research was to inform the LGA's approach to discussions with Government and to identify any areas where it would benefit members for the LGA to provide support or guidance.

Currently the role for local government in the delivery of EV charging infrastructure is not clear. Many local authorities feel that they lack the appropriate skills and data to make investment decisions in what is seen as a fast-paced and evolving technological landscape.

In most areas, local authorities have delivered EV charging infrastructure, although some of this equipment needs updating.

Based on the views of the participants in the research, there are ten things that the LGA need to do to engage with Government on behalf of local authorities:

- Government needs to clearly articulate the national roll out strategy for EV charging and the specific role to be played by councils
- Government needs to provide national leadership on the issue of technology selection

- If the Office for Zero Emission Vehicles wants to increase the pace of delivery, revenue and capital resource will need to be provided to local authorities
- Move away from stop/start short term funding arrangements to a longer term 'outcome' based approach to funding
- Advise on how to strengthen relationships between Sub-Regional Transport Boards and housing and planning authorities
- Provide access to data in areas including market data, location modelling, delivery model choice, procurement, and technology guidance
- In future guidance, identify criteria for selecting the best technology for a particular location

### **6.1 Case Study: Carlisle City Council and Charging Infrastructure**

As of November 2021, eleven new electric vehicle charge points were available in Carlisle, part of Carlisle City Council's work to make the city more accessible for electric vehicle drivers [16].

Most electric vehicle drivers charge their car overnight, presenting a problem for anyone who doesn't have off-street parking, such as a driveway or garage. This means that drivers who live in terraced housing or flats will need to rely on different solutions and one of these will be the expansion of the network of publicly available charge points.

Carlisle City Council has been awarded funding to install electric vehicle charge points at locations around the district. The full project was funded by Innovate UK which has allocated a total of £3.4m for sites across the north of England

The proposed electric vehicle charge points, and other associated equipment where appropriate, will be installed in residential areas where no off-street parking is available for residents.

The project has seen the installation of charge points at 11 sites within Carlisle city centre and the surrounding area, with a further 11 planned over the coming months. Each charge point has the ability to charge two cars simultaneously.





*An example of a charging point in Carlisle City Centre*

Additionally, Innovate UK supported Charge My Street's programme to install around 200 new charge points across the UK by the end of October 2021. The programme worked with a range of local authorities, including Carlisle City Council and South Lakeland District Council, as well as community and industry partners.

Charge my Street is a Cumbrian/Lancaster based community benefit society which finances, installs and operates electric charge points working with local communities. Their aim is for a charge point to be within five minutes' walking distance from every house that needs one.

The Local Government Association urge other local authorities to access central government funding and apply this funding to council assets, for the benefit of the local community.



# 7. Clean Air Zones

Some Local Authorities are introducing clean air zones to improve the air quality of their area. If vehicles exceed emission standards, they will be charged to drive in Clear Air Zones. There are 4 types of Clean Air Zone – from Class A to Class D [17]:

**Class A Zones** apply to: Buses, coaches, taxis, private hire vehicles

**Class B Zones** apply to: Buses, coaches, taxis, private hire vehicles, heavy goods vehicles

**Class C Zones** apply to: Buses, coaches, taxis, private hire vehicles, heavy goods vehicles, vans, minibuses

**Class D Zones** apply to: Buses, coaches, taxis, private hire vehicles, heavy goods vehicles, vans, minibuses, cars, the local authority has the option to include motorcycles

As of November 2021, Bath has a Class C Clean Air Zone. Birmingham has a Class D Clean Air Zone and Portsmouth has a Class B Clean Air Zone.

In London, the Ultra-Low Emission Zone (ULEZ) operates 24 hours a day, 7 days a week, every day of the year, except Christmas Day (25 December). The zone now covers all areas within the North and South Circular Roads. The North Circular (A406) and South Circular (A205) roads are not in the zone.

In 2022, Bradford, and Greater Manchester will become Clean Air Zones.

The main polluting substance that is targeted when creating CAZ's is nitrogen dioxide (NO<sub>2</sub>). Poor air quality is harmful to the most vulnerable of residents including children, the elderly and those already unwell.

High levels of NO<sub>2</sub> can cause [1]:

- Inflammation of the airways, coughing and shortness of breath (short-term exposure)
- Worsening of existing lung or heart conditions, including asthma, emphysema, and bronchitis
- Increased susceptibility to allergens and respiratory infections [17]

In the long-term, high levels of NO<sub>2</sub> can affect children's lung development, and there is evidence that children who grow up in highly polluted areas are more likely to develop asthma.



### 7.1 Case Study: Portsmouth's Clean Air Zone

Portsmouth City Council was identified by the UK government as one of over 60 local authorities with air pollution levels higher than legal limits. It was told to make improvements as soon as possible. The city is densely populated, and individual vehicles contribute to 50 per cent of air pollution [18].

The council believes that the natural reduction in polluting vehicles alone will not achieve sufficient reductions in air pollution. Cars, vans or motorcycles, won't be charged. The only vehicles to be charged will be older taxis, private hire vehicles, buses, coaches and HGV's.



Charges can be paid online via the Government's Clean Air Zone Portal. Charges are distributed once per day despite how many times in the day vehicles operate in the Zone.



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# 8. Town Planning

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The Royal Town Planning Institute (RTPI) has stated that the UK needs to rapidly reduce greenhouse gas emissions from surface transport.

Transport is the largest contributor to the UK's greenhouse gas emissions. Town planning departments within local authorities must take action to integrate net zero public transport solutions.

A research paper published by the RTPI in January 2021 examined the role of spatial planning and place-based solutions in the integration of net zero transport in towns and cities [19].

The research was carried out by LDA Design, City Science and Vectos. It explored how different places can achieve an 80% reduction in surface transport emissions by 2030, as part of the pathway to net zero by 2050.

It found that there is a need for a comprehensive package of interventions to reduce transport emissions.

The modelling took a place-based approach that prioritises measures that reduce the overall need to travel, followed by those which shift trips to active, public and shared transport, and finally those which switch vehicles to cleaner fuels.

If this model was implemented by towns and cities, it would act as a catalyst for reducing car dependency and creating healthier, safer, and more equitable communities.

The research stated that town planning systems should prioritise urban renewal that enables growth while achieving a substantial reduction in travel demand.

This would involve a focus on local living that ensures that most people can access a wide range of services, facilities and public spaces by walking and cycling.

An increase in home working, digital service delivery and new forms of flexible work and community spaces should play a key role in the reduction of public transport in local communities.

However, the lack of integration between national planning policy and the legislative net zero target can create difficulties for local planning and highway authorities who wish to pursue a more ambitious policy agenda to drive net-zero outcomes at the local level.

The RTPI have compiled a list of recommendations for local authorities to overcome potential barriers to net-zero transport integration:

- Create stronger strategic or regional planning structures to enable emissions to be monitored, mapped, and reduced through appropriate measures

- Introduce national regulation of shared mobility and EV charge infrastructure operators to ensure networks are open-access, interoperable and aligned with national and local strategies to deliver a zero-carbon public transport network
- Enable local areas to strive Advanced Quality Partnership Agreements (AQPAs) with all public transport and shared mobility providers to create fully integrated, high quality local mobility networks that provide a genuine alternative to private vehicle ownership [19]

Town planning with green recovery requires innovative and creative thinking that utilises existing resources and infrastructure.

### **8.1 Case Study: Solihull Council and Low Carbon Heat Pump Power**

Solihull Council have embarked on an innovative town planning project to deliver an alternative source of affordable low carbon energy to the town centre [20].

The new network will distribute low carbon heat and power from a single energy centre directly into town centre buildings. The energy centre at the heart of the network will provide a range of renewable and low carbon energy solutions including air source heat pumps and gas combined heat and power.

57% of greenhouse gas emissions in Solihull come from the energy used in town centre buildings. The council recognised that heat pump technology would play a significant role in reducing building emissions.

The aim is to distribute low carbon heat to customers from a centrally managed energy centre to create an affordable way to connect and utilise heat pump technology in their buildings.

So far, funding for the project has been provided by the Government's Heat Networks Investment Programme (HNIP) and the West Midlands Combined Authority.

In May 2021, an outline planning application for the energy centre was approved. The council are continuing to work with their partners to develop a full business case and hope to appoint a final contractor to build, maintain and operate the network.

They predict that construction could be set to start early 2022.

Lessons learned:

- Engagement and clear communication with external stakeholders, business owners in the city centre and members of the public is vital throughout the planning process. This acquires support and awareness of the key project benefits.

- Communication of the benefits through educational events and public drop ins highlights the positive impact of the project
  - Such a big project crosses sensitive public areas and the design features of the building should seek to blend with its environment
  - An energy infrastructure project of this nature is complex and requires cross-departmental engagement and support. A steering group of key council officers has been essential for building knowledge, support and momentum as the project has developed.
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# 9. Social Housing

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The Government have committed £9 billion of investment to increase the energy efficiency of homes, schools, and hospitals [21]. People across England are set to benefit from warmer, greener social homes, with social housing providers given the chance to bid for government funding to make major improvements to their stock.

A 2030 target was set in 2017 as part of the Governments Clean Growth Strategy. The Climate Change Committee have stated that the target to bring all social housing up to an Energy Performance Certificate (EPC) of C by 2030, should be brought forward by two years [22].

The National Housing Federation (NHF) warned that the new target would be a challenge and would require support from the Government.

The Climate Change Committee have proposed other key milestones for the decarbonisation of social housing [23]:

- All new buildings should be zero carbon-ready from 2025
- All new boilers installed should be 'hydrogen ready' from 2025
- No new oil and coal heating systems to be installed from 2028
- No new natural gas boilers after 2033
- All heat networks to be converted to low carbon heat sources from 2040

On the 19<sup>th</sup> of October 2021 the Housing Association Federation published a guide for housing associations to work towards the decarbonisation of their properties. They shared some statistics on the impact of social housing on emissions in the UK [24]:

- Domestic use of fossil fuels contributes 21% of England's carbon emissions, with social housing contributing 10% of this.
- In England, our homes produce more carbon emissions every year than all our cars. Eliminating emissions in all housing association homes would be the equivalent of taking 1.8 million cars (the equivalent of all the cars in Manchester and Birmingham) off the road indefinitely.
- Emissions from housing increased by 7% during the coronavirus pandemic.
- 18.4% of residents in social housing live in fuel poverty.

Furthermore, the guide suggested that delivering decarbonisation of social housing in a socially just manner requires adhering to two guiding principles:

1. **The climate transition must be a just transition.**  
With the right policy interventions and approach, decarbonisation can be a once in a generation opportunity to eliminate fuel poverty for good, delivering lower bills alongside more comfortable homes.
2. **Housing association residents must be at the heart of this work.**  
While residents will benefit from warmer, more affordable, healthier, and smarter homes, they will also face the disruption of retrofit and installation of

new heating technologies. As a result, residents' willingness to learn about, adopt and champion new low carbon technology will be crucial to success [24].

### 9.1 Case Study: Fenland District Council: Energy Efficient Homes

In March 2021, Fenland District Council and Tonbridge & Malling Borough Council successfully secured £4.5 million of funding as part of a pilot £50 million Government project to improve the energy efficiency of social housing [25].

Clarion Housing Group are matching the funding with a further £4.5 million investment. Clarion are the largest social landlord in the country, managing thousands of homes across the two local authorities.

They will use the funds to upgrade 160 of the most energy inefficient homes in Fenland and Tonbridge and Malling, which currently have an Energy Efficiency Performance Certificate rating of D or below.

Once complete, those living in upgraded properties will save between £300 and £500 on their energy bills each year. Clarion have estimated that the project will also generate 68 jobs and apprenticeships in the green energy sector, by employing local sub-contractors and installers.

*"This funding is absolutely fantastic news for those residents living in the poorest-performing homes. Improving their properties will not only lower their carbon emissions, but they will also have warmer, healthier homes to live in and more disposable income through cheaper energy bills which will be timely as part of the Covid recovery for our communities."*

*"But it will also have much wider and far-reaching benefits. As a pilot demonstrator project, lessons learned will drive even more investment and innovation in retrofitting social housing at scale. It will hopefully create a sustainable, energy efficient industry that will benefit even more residents and generate more jobs in years to come."*

- Cllr Samantha Hoy, Fenland District Council's Cabinet member for Housing [25]





# 10. Renewable Energy



In most discussions about climate change, renewable energy often tops the list of changes the world can implement to mitigate climate change. This is because renewable energy sources such as solar and wind don't emit carbon dioxide and other greenhouse gases that contribute to global warming.

In October 2021, the Prime Minister said that all the UK's energy is going to come from clean energy sources by 2035. He stated that the target could be reached by thorough advances in wind power and other renewable resources.

In declaring an end to fossil fuel electricity, the Prime Minister is following the advice of the Climate Change Committee, which says it's an essential staging post to reducing emissions to almost zero across the economy by 2050.

In June 2021 the Office for National Statistics published key statistics on the use of wind energy in the UK [26]:

- Electricity generation from wind power in the UK has increased by 715% from 2009 to 2020.
- Turnover from wind energy was nearly £6 billion in 2019.
- The UK has the largest offshore wind farm in the world, which is located off the coast of Yorkshire.
- According to the National Grid, 2020 was the best year to date for renewable energy in the UK, with record levels of wind energy generation.
- Offshore wind farming has provided employment opportunities, with an accumulation of 7,200 full-time employees in 2019.

Additionally, in 2010 the Government introduced the Feed-In-Tariff which pays people for generating their own electricity. This resulted in the **solar capacity** in the UK increasing from 5,488.6 MW in 2014 to **13,259 MW in June 2019** [27].

The Low Carbon investment company has highlighted the key benefits that local authorities should consider when working towards implementing more renewable energy sources in their areas [28]:

- **Improved public health:** the air and water pollution emitted by coal and natural gas is linked with illness. Renewable energy sources do not produce this harmful pollution. In addition, wind and solar energy require no water to operate so do not pollute water resources or strain supplies needed for agriculture or drinking water.
- **Public support for renewables:** Statistics released by the Government in 2020 showed that 80% of people support the use of renewable energy, while only 3% oppose it. 8 in 10 people in September 2020 were either very concerned or fairly concerned about climate change [29].  
A poll conducted by YouGov, published in Business Green in 2021 asked the public to rank the top areas that the Government should be investing in. Renewables came out top [30].

- **Inexhaustible source of energy:** Renewable sources provide an endless supply of energy, with sun, water, plant matter and heat from the earth constantly regenerating itself.
- **Jobs and other economic benefits:** On average, more jobs are created for each unit of electricity generated from renewable sources than from fossil fuels. According to analysis published by UK100, speaking to a group of over 100 mayors and local government leaders, the transition to a green economy could create 1.2 million jobs in the manufacturing and construction industry alone, as buildings and homes are made more sustainable and energy efficient [31].

### 10.1 Case Study: A New Wind Turbine and Geothermal Farming in Cornwall

Transforming the energy sector is part of Cornwall Council's response to tackling the climate emergency and helping Cornwall become carbon neutral by 2030. Cornwall Council has been innovative in its approach to renewable energy over the last two decades.

Around 40% of Cornwall's electricity comes from renewable sources, but the Council have pledged to work towards 100% clean energy by 2030 [32].



Centrica, the energy company has contributed £1 million to the project and held responsibility for constructing and commissioning the infrastructure. The wind turbine, off the coast of Cornwall began generating energy in September 2020.

With rotor blades spanning 40m in length, the turbine at Ventonteague, is the first to be built in Cornwall since 2016. It is the only wind turbine to have been installed in the South West in 2020.

The turbine will reduce Cornwall's greenhouse gas emissions by more than 3,300 tonnes a year over the next two decades, helping the county better manage its energy supply. Over 1,440 Cornish homes will be powered by the smart grid connected turbine each year.

The project showed what can be achieved through local authority partnerships with other organisations, overcoming barriers such as grid capacity, which have previously halted the delivery of renewable energy projects in Cornwall.

The turbine also demonstrates how a local energy market can make better use of renewable energy generated in Cornwall and help deliver carbon neutral ambitions.

Cornwall's geology means it's recognised as the best place in the UK to exploit geothermal resources. In parts of the county, granite brings geothermal heat much closer to the surface than in other parts of the UK, making it easier to access and cutting the cost of drilling. Cornwall's geothermal gradient is twice that of other parts of the UK.

Cornwall Council recognised this potential and supported the development of a Geothermal site. By next year, the company behind the project, Geothermal Engineering Ltd (GEL), says it will have built a power plant to produce electricity and heat from the hot rocks. It plans to feed electricity into the grid and send heat to a local rum distillery and a new housing estate.



A large stack of cut logs is the central focus, arranged in a neat pile. The logs are cut into sections of varying lengths, showing the natural grain and texture of the wood. The stack is situated in a field of tall green grass interspersed with small yellow wildflowers. The background is a soft, out-of-focus green, suggesting a natural, outdoor setting. The overall composition is layered, with the logs in the mid-ground and the field in the foreground.

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# 11. Biodiversity Net Gain

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An estimated 1 million species are threatened with extinction globally. The world has failed to fully achieve any of the 20 Aichi targets agreed at COP10 to stop biodiversity loss, which were due to be achieved in 2020. The UK is believed to have missed anywhere from 14 to 17 of these targets [33].

Local authorities can play their part in meeting these targets by facilitating biodiversity net gain in their areas. Biodiversity Net Gain is an approach to development and sustainability that leaves biodiversity in a better state than before.

Where a development has an impact on biodiversity it encourages developers to provide an increase in appropriate natural habitat and ecological features. This must be done in a way so that the current loss of biodiversity through development will be halted and ecological networks can be restored.

The Department for Environment, Food & Rural Affairs has consulted on making biodiversity net gain a mandatory element of the English planning system. Targeted stakeholder engagement will take place during and after this consultation to finalise any outstanding technical implementation and policy details. This will include a formal consultation on the biodiversity metric before it is published for use in mandatory biodiversity net gain [34].

Additionally, The Chartered Institute of Ecology and Environmental Management (CIEEM), have stated ten key principles of biodiversity net gain which should be considered by local authorities, especially when undertaking any construction work or town planning developments [35]:

- Utilise the mitigation hierarchy to minimise impact on biodiversity
- Eliminate impacts on biodiversity that cannot be offset elsewhere
- Involve all development stakeholders in forming biodiversity net gain solutions
- Understand the potential risks and variable factors to achieving biodiversity net gain
- Determine a measurable biodiversity net gain contribution
- Ensure the best possible outcomes from biodiversity net gain
- Offer nature conservation that exceeds the requirements
- Focus on generating long-term benefits from biodiversity net gain
- Cover all areas of sustainability, incorporating economic and societal factors
- Communicate all biodiversity net gain outcomes with complete transparency

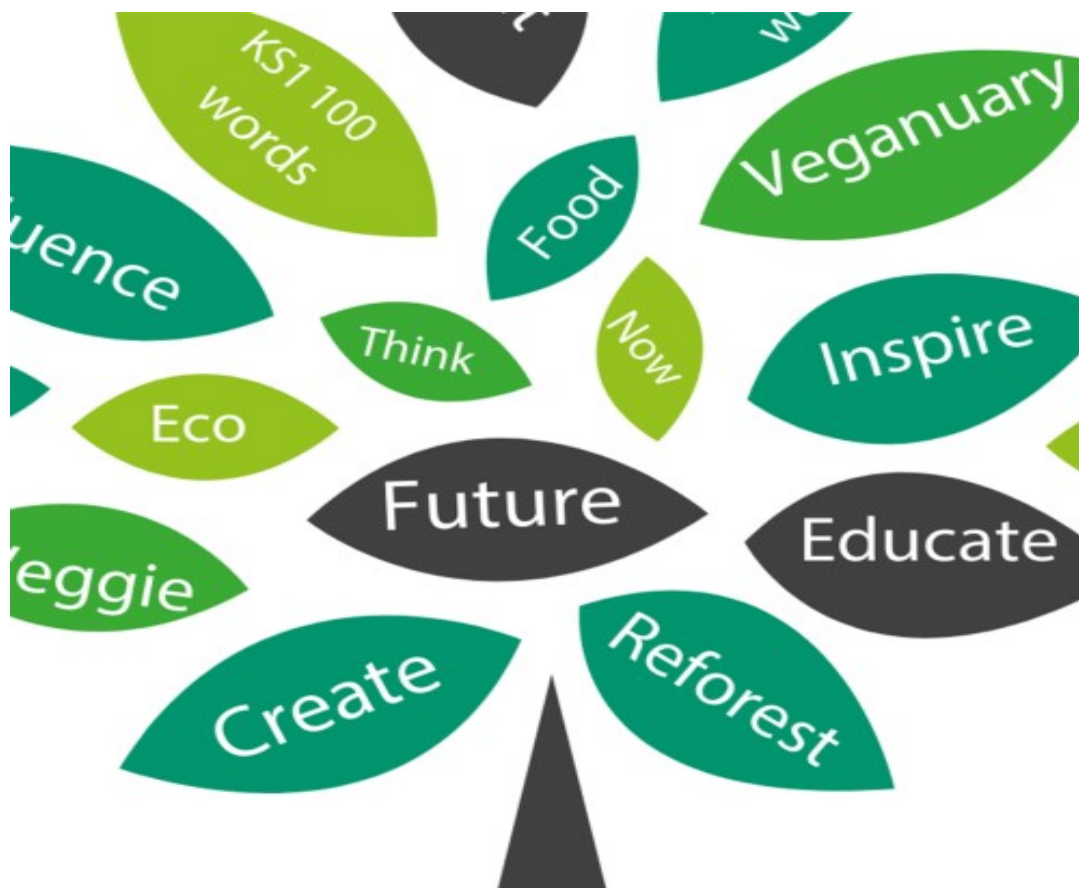
An article published by the Natural History Museum in October 2021, stated that the UK is in the bottom 10% of countries for biodiversity, with just 53% of native wildlife

intact. An area requires 90% or more of native wildlife to be a functioning ecosystem [36]. While there is work to be done globally, significant efforts are still needed here in the UK, kickstarted by Government and at local levels.

### 11. Case Study: Reforesting in Hampshire

Hampshire City Council declared a climate emergency in July 2019 it committed to:

*“Develop an action plan to provide a meaningful and effective set of measure to ensure that Hampshire moves towards carbon neutrality and greater resilience to the effects of climate change” [37]*



In response, they have developed an approach to increase and connect woodland areas, green corridors, and networks across the county.

Trees are crucial in sequestering carbon and helping to provide resilience to climate change impacts. They provide cooling, shading and flood alleviation as well as offering benefits to tackling poor air quality.

The strategy will implement current and emerging policies and requirements around environmental net gain, and local nature recovery strategies as set out in the 2021 Environment Bill.

The council will support a programme of tree and wildflower planting on highways amenity land, working with partners to identify appropriate sites for improved management, natural regeneration, and further planting to create forest networks.

The tree strategy will follow to achieve the target of planting one million trees by 2050. To meet the increased demand for trees, the council will look to expand its capacity for growing saplings. This will help to ensure that the most appropriate trees for net gain are being grown and planted.

Hampshire County Council have reported the following success factors in their project:

- A collaborative approach when creating strategies is vital to championing, implementing, and sustaining the project in the long term
  - While the strategy focuses on increasing tree cover to promote biodiversity net gain, this must be seen as a part of a wider opportunity to promote other forms of habitat creation and management
  - It is important to protect and maintain existing habitats when expanding them. Existing trees and woodlands are a fundamental component of the landscape and play a critical role in locking up carbon.
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# 12. Restoring Nature

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Around the world, biodiversity is changing, driven by human impacts on the environment. In the UK, species' population and range sizes are declining by 13% on average [38]. Much of this decline is due to climate change, the intensification of human land use, and the degradation of natural habitats.

In response to this, the UK Government is introducing Local Nature Recovery Strategies (LNRS) from April 2022 to map where local habitat improvement and restoration could address national-scale environmental objectives.

Five LNRS pilots took place in Buckinghamshire, Cornwall, Cumbria, Greater Manchester, and Northumberland between September 2020 – May 2021.

The outcomes of the pilots are currently guiding Defra's development of LNRS policy, guidance, and regulations.

While biodiversity and land management strategies are devolved policy areas in the UK, similar policies are being planned in Scotland, Wales, and Northern Ireland.

Each Strategy will:

- Agree priorities for nature's recovery
- Map the most valuable existing areas of nature
- Map specific proposals for creating or improving habitat for nature and wider environmental goals.

Environment Minister, Rebecca Pow, said:

*"These Local Nature Recovery Strategies will be a key part of our green recovery and help kick-start the creation of over a million acres of joined up habitats which people can enjoy across the country."*

*"I urge local authorities and public bodies alike to take part in our consultation and provide views. Once rolled out nationally, Local Nature Recovery Strategies will underpin the Nature Recovery Network – a flagship element of our 25 Year Environment Plan and a key mechanism for knitting these precious habitats together."* [38]

## 12.1 Case Study: Wiltshire Council and the Community Environmental Toolkit

Ahead of the introduction of LNRS, communities and individuals are starting to make changes in their local area to help address climate change, and halt and reverse biodiversity loss [39].

Planting trees is often a popular solution adopted by local communities and the voluntary sector. However, Wiltshire Council were concerned that if this wasn't done properly it could do more harm than good to local habitats.

The importance of providing accurate and informative guidance that communities could use to promote biodiversity in their area, was behind the concept of the Community Environmental Toolkit.

Working in partnership with Natural England, the Council created a step-by-step guide which aims to help communities get the greatest environmental benefits from their hard work.

The guide provides advice on how to survey and identify key habitat types, as well as explaining what some of the wider benefits of nature restoration are.

For example, it explains the benefits to carbon storage, flood mitigation and water quality improvements. It also provides links to further guidance, useful organisations, and potential funding opportunities.

The Community Environmental Toolkit supports and inspires local communities to understand the value of what they already have. Through well considered community projects and initiatives communities can help:

- Plants and wildlife to thrive
- Mitigate and adapt to climate change
- Enhance the beauty, heritage, and community engagement with the natural environment.

As well as providing guidance on understanding the local environment, the toolkit covers a variety of habitat types including woodland, farmland, grassland, scrubland, wetland, and urban landscapes.

The toolkit was shared across communities in Wiltshire over the second half of 2021. It is allowing those individuals and groups who are interested in promoting biodiversity and nature restoration to have a reference point to make more informed decisions. The aim is that it will lead to projects that will form part of the emerging Wiltshire Local Nature Recovery Strategy.

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# 13. Conclusions

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Many local authorities across the UK are already taking constructive steps to mitigate the rate of climate change. Clearly, local authorities have a role to play in the UK's goal towards reaching Net Zero by 2050.

The UK has been a key player in international efforts to curb climate change as demonstrated in Government pledges, facilitation, and funding. However, local authorities now have a requirement to boost the UK's contribution through innovative forward planning that prioritises green recovery and reducing carbon emissions.

Ahead of the ban on new petrol and diesel vehicles in 2030, local authorities are starting to prepare for the changes that they will have to make through town planning that considers the place of charging infrastructure. Local authorities should embrace any Government funding that is on offer to start the implementation of charging infrastructure in their area so as not be left behind when the time comes. However, the LGA has highlighted the need for Government to provide further guidance and support to local authorities in this area.

Local authorities should merge green recovery targets into any future town planning. They should consider ways to make their local areas more pedestrian and cyclist friendly for the future. The Solihull Council case study demonstrated how town planning can be done in a way that considers the sustainability needs of the local authority as well as the needs of the public.

Clean Air Zones are gradually being adopted by local authorities and they are valuable not only for the interest of public health but also in the interest of reducing the emissions of harmful greenhouse gases in busy city centres. Cities such as Bath and Portsmouth are leading the way and other local authorities should consider the benefits of clean air zones in their area.

When considering how to make social housing greener, local authorities should consider schemes that prioritise replacing oil and coal heating systems with new boilers that are 'hydrogen ready'. The partnership between Fenland District Council and Tonbridge & Malling Borough Council and Clarion Housing Group should serve as an example as to how collaborative partnerships between local authorities and development companies can facilitate substantial and widespread change in decarbonising housing.

Local authorities have long known that renewable energy sources are one of the most powerful tools in reducing carbon emissions. Although the use of the solar energy and wind energy is steadily increasing across the UK, more can be done. Cornwall Council provide a good example of how it can be done, with 40% of Cornwall's electricity now coming from renewable sources. In the coming years local authorities should utilise their natural environment as Cornwall has, to make renewable energy sources the standard.

Protecting and restoring the nature of an area should be high on local authorities' agendas. Ways to ensure biodiversity net gain should always be considered during town planning processes and throughout construction projects. Reforesting and



rewilding projects that are being pioneered by the likes of Hampshire Council and Wiltshire County Council should act as guiding examples to other local authorities seeking to improve biodiversity in their area.

It has been demonstrated that green recovery strategies within local authorities are always made easier through public engagement and collaborative partnerships. Local authorities must use all the resources available to them, while thinking outside of the box and acknowledging that they have a role to play in international efforts towards slowing down climate change.

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