Pendle Climate Change Strategy

Final Report

Pendle Borough Council

May 2025

Insight

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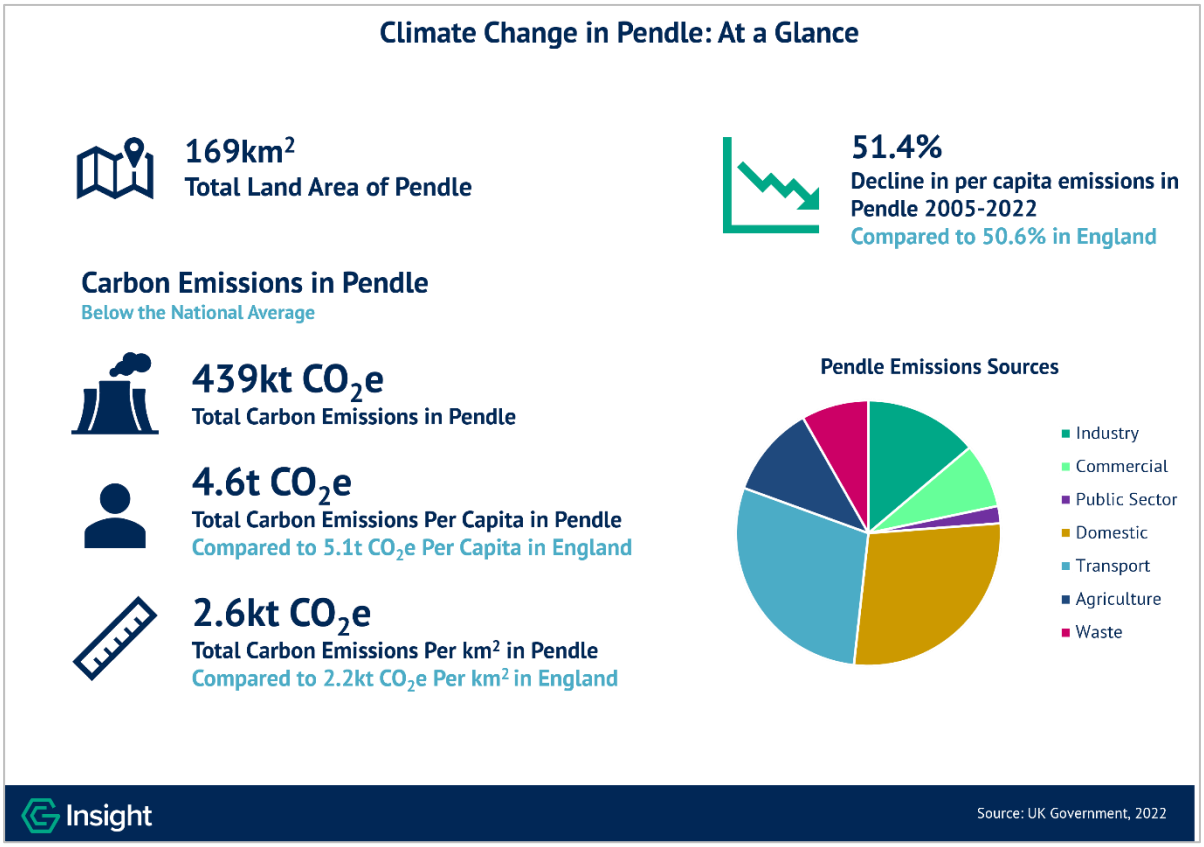
Contents

1 Introduction

The Pendle Borough Council Climate Change Strategy sets out a comprehensive plan to realise net zero ambitions for the Borough. This strategy will guide the Council's efforts to reduce its carbon footprint across all operations, as well as directing focus on how Council will work with stakeholders, including residents and businesses, to promote and implement sustainable practices.

Climate change is a key global challenge which is recognised in national and regional policy and is a high priority for our Council. Climate change causes a wide range of negative impacts including rising temperatures, drought, intense weather events and rising sea levels which in turn impact on the natural and built environment, with effects on wildlife, habitats and people's livelihoods. These factors adversely affect our local communities, our infrastructure and the quality of our environment in Pendle.

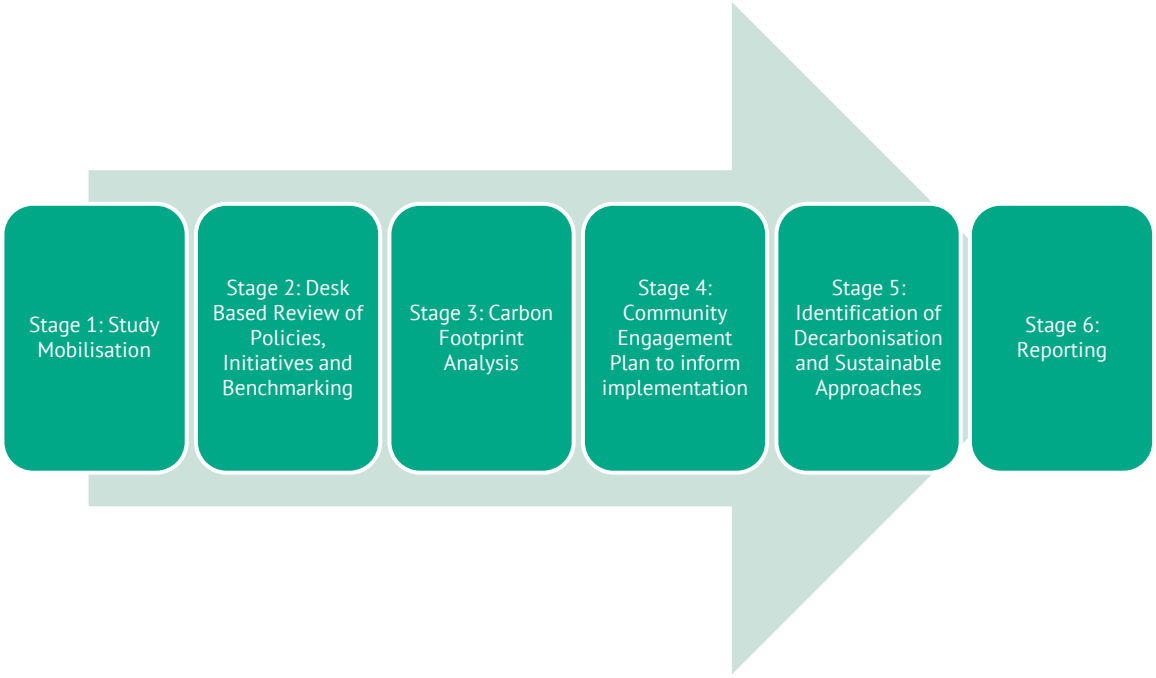


Pendle Borough Council has a role to play in responding proactively to the climate change emergency. This can be achieved through mitigating carbon emissions and preventative action across priority areas. We will work collaboratively with partners and stakeholders to develop, deliver and facilitate initiatives to support key areas of intervention including renewable energy generation, low carbon transport, energy efficiency, climate adaptation and mitigation, and nature-based solutions. We have a role to play in leading positive action, influencing activity through place-shaping and leadership in the drive to become carbon net zero.

It should also be noted that the current discussions on local government reorganisation in Lancashire, as set out by proposals in its English Devolution White Paper of December 2024, will bring a number of changes to local governance in Pendle. Whilst discussions are ongoing on how local government structures will eventually look, this strategy offers an opportunity to set out Pendle's climate change agenda, and influence future working on a larger geographic scale to address and respond to the climate emergency.

Development of the Climate Change Strategy

The Climate Change Strategy has been underpinned by an evidence-based approach to development. The Strategy has been developed through six stages of research and engagement:



The development of the Climate Change Strategy has been overseen by an officer-led steering group at Pendle Borough Council with input from the Pendle Climate Emergency Working Group (CEWG).

The Remainder of the Strategy

The strategy is structured as follows:

- **Section 2** sets out the context for the strategy with consideration of the prevailing policy drivers for change, the baseline position in Pendle against benchmarks, and good practice and learnings from elsewhere
- **Section 3** establishes the vision for the Climate Change Strategy by 2050, including a mission statement and a set of thematic priorities
- **Section 4** outlines each thematic priority in turn, establishing the challenges and opportunities presented which frame the case for change
- **Section 5** identifies targeted objectives for climate change and sustainability activities in Pendle alongside an action plan which identifies the role that Council will play and the priority level for action
- **Section 6** sets out the approach to delivering the strategy including a monitoring framework
- **Section 7** provides a community engagement plan with guiding principles and suggested approach and methods of engagement.

2 Pendle and the wider strategic context

The Strategic Context for Climate Change and Sustainability

National Strategic Context

In May 2019, the UK became the first country to declare an "environment and climate emergency".[1] While itself a symbolic declaration, the motion in the UK Parliament marked a renewed sense of urgency in tackling climate change. Previously, the UK has made commitments to respond to climate change – such as through the **Climate Change Act** of 2008 (as amended)[2] which makes it "the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline."

In 2015, the UK signed the **Paris Agreement**, a legally binding international treaty adopted by 196 parties at the UN Climate Change Conference COP21. The landmark agreement aimed to hold the increase in global temperatures to "well below 2°C above pre-industrial levels" and to pursue efforts to "limit the temperature increase to 1.5°C above pre-industrial levels."[3]

Over the last five years, a range of policies and strategies to respond to climate change have been published by the UK Government. Key policies included the **Net Zero Strategy: Build Back Greener** (2021)[4], **The Ten Point Plan for a Green Industrial Revolution** (2020)[5], and the **Green Finance Strategy** (2023) [6]. A number of other policy documents have also been published, in particular in relation to transport decarbonisation and energy security. Amid the cost-of-living crisis from 2021, some climate commitments by political parties were subject to wider debate and some were changed, though the overall commitment to net-zero by 2050 remains. How best to transition to net zero and do so in a way which is fair for local communities, has continued to be a regular topic of political and public debate.

In 2024, the UK Government changed to the Labour Party for the first time since 2010. As a result, the current policy context at the national level in the UK is continuing to emerge. In its General Election manifesto, the Labour Party committed to set up '**Great British Energy**', a publicly owned clean power company to cut bills and boost energy security, as one of their 'first steps for change'. The Government recently announced funding for solar PV installs in hospitals and schools (see next chapter). Making Britain a 'clean-energy superpower', to accelerate net zero and achieve zero-carbon electricity by 2030 is also one of the Party's five missions for Government.[7] Most recently, the Government has published a **Clean Power 2030 Action Plan**, which sets out the Government's view of the pathway to achieving zero-carbon electricity by 2030 and the steps needed to get there.[8]

[1] UK becomes first country to declare a 'climate emergency'
[2] Climate Change Act 2008
[3] The Paris Agreement | UNFCCC
[4] net-zero-strategy-beis.pdf
[5] The Ten Point Plan for a Green Industrial Revolution
[6] Mobilising Green Investment - 2023 Green Finance Strategy
[7] Change Labour Party Manifesto 2024
[8] Clean Power 2030 Action Plan - GOV.UK

Local Strategic Context

Pendle Borough Council declared a Climate Emergency in July 2019. This led to the development of a Climate Emergency Working Group and the first **Pendle Borough Council Climate Emergency Action Plan (for the period 2020-2025)**, which was approved in March 2020.[9]

This new strategy builds on work to date in responding to climate change in Pendle, while also seeking to align with, and take account of, the wider strategic context in order to effectively guide activities and developments in the Borough. Some of these key policies considered within Pendle and Lancashire include:

- **Lancashire County Council Environment and Climate Strategy (2023-2025)** - Protecting the Environment has been set out as a top priority for Lancashire County Council, and the strategy aims to show how focusing on the environment and climate can contribute to wider strategic objectives, including but not limited to economic growth and resident health. The strategy highlights three areas of activity including reducing waste and pollution, responding to climate change (including through reducing emissions and ensuring infrastructure resilience), and conserving and enhancing the natural and historic environment.
- **Lancashire County Council Local Nature Recovery Strategy (2025-2050)**– currently being finalised, post consultation. The strategy recognises the challenges faced in reversing the decline, but also the opportunities the county has for nature recovery and the benefits action can bring to landscapes, habitats, species and residents. The Strategy provides a vision for action and securing funding, rather than presenting a delivery plan.
- **Pendle Borough Council Corporate Plan** (**2023-2027)** – Key actions include reviewing opportunities to incorporate alternatively fuelled vehicles into the Council's fleet, and to plan the delivery of electric charging schemes.[10]
- **Pendle Local Plan Fourth Edition 2021-2040 (at Examination)** –The fourth edition of the plan is the main tool through which climate measures can be planned within the Borough, underpinned by Local Plan Objective LP04, which seeks to respond to the causes and potential impacts of climate change through a process of prevention, mitigation and adaptation. Amongst its many provisions, it highlights that developments should 'safeguard, and where possible restore, natural features which make a positive contribution to the capture and storage of greenhouse gases'.
- **Pendle Green Infrastructure Strategy (2019)** – The strategy aims to support the protection and enhancement of blue and green infrastructure in Pendle, supporting economic, social and environmental benefits.[11]
- **Pendle Economic Growth Strategy (2025-2028)** – The Pendle Economic Growth Strategy recognises the importance of responding to the climate emergency in the borough and sets out ways in which the borough's local economy can support green transitions through the diversification of business activities in existing sector strengths such as manufacturing into clean energy industries.
- **Masterplans for Colne, Barnoldswick and Earby (2024)** – Responding to climate change is a strategic objective established in the masterplans and is embedded in the plans through enhancing green spaces, enhancing connectivity and green transport infrastructure, and improving energy efficiency.[12]

[9] Climate Emergency Declaration | Pendle Borough Council
[10] Corporate Plan 2023-2027 | Pendle Borough Council
[11] Local Plan Part 2 Consultation Documents | Pendle Borough Council
[12] Colne, Barnoldswick and Earby Town Centre Masterplans | Colne, Barnoldswick and Earby Town Centre Masterplans | Pendle Borough Council

Shaping Pendle's Climate Change Response

In responding to the climate emergency and reducing Pendle's emissions, there are a range of lessons that can be learned from best practice taking place in neighbouring local authorities and in other parts of the UK in responding to climate change. Climate change is a shared challenge for all of us, and efforts should be made to work together and learn from each other as to how best to contribute to tackling its causes by applying appropriate mitigations.

Through the development of this strategy, research has been carried out to consider some of the best practice in responding to climate change in the UK, and consideration has been given to how Pendle could learn lessons from these exemplars. It should be recognised that even in places that have been identified as examples of best practice, either in this research or other research, there is still much work to do. Even some of these examples have not achieved the levels of progress that they had aimed for in responding to climate change, though have been able to make good progress through particular approaches and initiatives. Some of the key approaches that learning may be taken from in the context of supporting Pendle's climate action include:

- **Collaborating with neighbouring areas to carry out climate action initiatives** – multiple local areas identified through the research have worked with neighbouring and other local authorities to coordinate responses to climate change. An example of this is in West Lancashire, where three councils - Blackpool, Fylde and Wyre - have committed to being more environmentally friendly, working together through a combined 'Carbon Reduction Survey'.[13]
- **Providing strong, transparent communication on the climate action plans, initiatives and progress made in working towards them** – for example, in Bristol, there is a publicly accessible dashboard with details on the One City Plan's 546 initiatives. The dashboard supports the promotion of initiatives, making them more transparent and providing information on key projects and progress.[14]
- **Linking climate initiatives to social goals and setting out how plans will deliver a just transition for residents** – the Bristol One City Approach has linked the initiatives responding to climate change and those in other areas to the United Nations Sustainable Development Goals. This could support public understanding of the reasons for different initiatives, and the wider context they sit within and could be applied to Pendle's emerging actions.
- **Involving a wide variety of stakeholders and partners, such as through Action Boards that include business and community leaders** – a variety of local places use different community stakeholder boards, to provide leadership and oversight of climate actions. For example, in Aberdeen a Net Zero Leadership Board and Net Zero Delivery Unit was formed from organisations based or working in Aberdeen, and it is recognised that achieving the delivery of the local net zero route map will require a collective citywide effort for all of Aberdeen.[15] The development of strong public/private partnerships can support the delivery of actions in Pendle, and ensure that climate action activities are tracked and monitored.

[13] Carbon Reduction – Fylde Council
[14] Dashboard - Bristol One City
[15] Net Zero Aberdeen | Aberdeen City Council

- **Considering the establishment of bodies independent from the Council to help drive activities related to climate action** – a range of organisations exist independent, or semi-independent, from local authorities to support the delivery of climate actions in local communities. In Midlothian, the Midlothian Climate Action Hub aims to co-ordinate local efforts that address and tackle climate change, bringing together a variety of community trusts, organisations and specific projects. In 2024/25, Midlothian Climate Action Hub was awarded a grant of £125,000 by the Scottish Government to support the costs of three staff and an operational budget.[16] There may be a role to support local community groups to deliver climate action, in addition to work that can be directly carried out by the public sector.
- **Regularly engaging with local businesses, and residents in local communities to encourage involvement and promote climate action** – community engagement is widely recognised as key to successfully driving forward effective climate action. The Warrington Climate Emergency Commission has released an Annual Report reflecting on its progress, including community engagement.[17] This type of approach can support public understanding and raise awareness about local actions, including in Pendle. Similarly, project-based initiatives such as the Net Zero Terrace Streets project[18] in Rossendale, may also provide useful learning of relevance to the Pendle context.
- **Exploring how best to reduce the barriers to climate actions, particularly where climate action may exacerbate other socio-economic challenges in local communities** – In North Kesteven, the Climate Emergency Strategy refers to the Council's alignment with the UN's Sustainable Development Goals, as well as specific plans to respond to barriers to climate action, such as costs and exacerbating other socio-economic challenges.[19] Recognising the context in Pendle, particularly around the challenges of retrofitting properties and developing greener housing stock, North Kesteven's approach may provide useful lessons in how to work towards a just transition.

[16] Funding success for the Midlothian Climate Action Hub - Midlothian View
[17] Climate emergency commission Annual report 2023.pdf
[18] https://rvenergy.org.uk/terraced-streets/
[19] NKDC Climate Emergency Strategy | North Kesteven District Council

3 Strategic Framework

Our Vision and Mission Statement

Our vision for Pendle's response to the challenge of climate change is focused on priorities and actions needed to drive an immediate change, but it is also guided by a longer-term vision that sets out the local ambition to transform the way we live and work. This is in line with national targets to achieve net zero by 2050.

Vision

Transitioning Pendle to net zero by 2050

By 2030, Pendle will be making strong progress towards becoming a carbon neutral and climate resilient borough on track to achieve net zero status by 2050.

Our efforts to realise this vision will be guided by our mission statement, which sets our intent on how we will work to achieve the intended outcomes of this strategy.

Mission Statement

We will ensure that Pendle is making measurable progress towards becoming a carbon neutral borough, working with strategic partners, businesses, community groups and other stakeholders to achieve that aim. Pendle Borough Council will lead by example in implementing and promoting sustainable and low carbon practices, ensuring emission reduction and climate change mitigation and adaptation become a core part of decision-making and operational delivery.

Strategic Framework

The strategy is framed around a series of thematic priorities to realise this vision. These priorities are interlinked, so successful delivery of the strategy requires activities delivered against each objective. For example, successful delivery of activities under the Energy Efficiency Objective will only have limited value if there is no successful delivery against other objectives.

These thematic priorities are supported by two cross cutting themes, to be led by Pendle Borough Council – **Leading the way** and **Influencing businesses and communities**. These priorities underline the important role that the Council has in setting the direction for climate change action in the Borough, and in demonstrating the core principles that are required to successfully respond to the climate emergency.

Strategic framework for climate change action in Pendle					
Thematic priority	**Energy efficiency and consumption**	**Renewable energy generation**	**Low carbon transport**	**Climate adaptation and mitigation**	**Natural capital and green solutions**
Objective	**We will encourage and facilitate the implementation of energy efficiency measures in buildings, working practices and lifestyles throughout Pendle**. Changing our behaviours and the processes that underpin the way we do things is as important as adopting more energy efficient devices, equipment and measures in our businesses and homes. It is a vital part of becoming carbon neutral and our journey to net zero, that we inform and support Pendle businesses and households to become more energy efficient.	**We will support all appropriate opportunities to implement renewable energy installations at all scales**. Decarbonising energy generation is a critical component of meeting our net zero ambitions. Enabling renewable energy generation and seeking opportunities to implement local energy and heat networks will help to reduce greenhouse gas emissions, increase energy independence and resilience, reduce dependency on fossil fuels, and will help to support economic growth in clean and green sectors. An important part of this action will be to positively influence perceptions of renewable energy technologies to drive behaviour change.	**We will enable and promote the development and uptake of low carbon transport solutions, so that they are an accessible, attractive, low carbon and easy-to-use option for individuals and businesses**. We will work in partnership with all stakeholders to support and encourage more sustainable, low carbon and active travel options, to reduce the greenhouse gas emissions' impact of travel in the Borough.	**Working in partnership with all stakeholders, we will pursue options to implement adaptation and mitigation measures to better cope with, and respond to, the impacts of climate change**. Effects such as extremes of weather and changing climate patterns present a risk to our businesses, homes and infrastructure. In conjunction with partners, we will support actions that deliver adaptation and mitigation measures to safeguard urban and rural communities and businesses throughout the borough.	**We will maximise the potential of Pendle's natural capital, in particular our upland peat areas, and seek opportunities to implement nature-based solutions in response to the effects of climate change**. Working with strategic partners, we will seek opportunities to work with Pendle's natural assets and integrate them into approaches to increase resilience to climate change, and to enhance biodiversity and the natural environment.
Cross-cutting thematic priorities					
Pendle Borough Council…	**Pendle Borough Council will lead the way in implementing measures aimed at directly addressing the challenges presented by climate change and net zero in all policies, strategies, plans and actions**. In so doing, we will embody the standards required to achieve net zero, demonstrate the feasibility of climate change measures, and embody the community leadership required of public bodies.				
	Pendle Borough Council will use its position as the local authority for Pendle and primary anchor institution for the community to influence our businesses and communities to follow our lead and adopt climate change measures and policies. It is only through a collective approach that we will be able to achieve realise our net zero ambitions. This requires appropriate climate change-focused actions being taken by all actors; embedding climate literacy in and the development of green skills for our workforce; and climate conscious behaviours being demonstrated by our businesses, communities and residents.				

Measuring success

Success over the next five years, and beyond, will be judged through performance against key environmental and sustainability indicators including:

- Reduction in carbon emissions
- Renewable energy developments
- Commercial and domestic installation of low carbon heating system (including air/ground sourced heat pump) and renewable energy systems
- Increase in commercial, community and domestic energy generation from renewables
- Increase in installed renewable energy generation capacity
- Reduction in private car use
- Increase in number and proportion of ULEV vehicles registered in Pendle
- Modal shift to public and active travel
- Increased resilience to the effects of climate change
- Area of land managed under natural capital/nature-based solution programme for climate change adaptation/mitigation

4 Our climate change and sustainability priorities

Guided by the strategic framework and objectives set out in the preceding section, there are a number of challenges and opportunities that this strategy aims to address. This section considers these and identifies the call to action to drive change in Pendle.

Energy efficiency and consumption

Pendle's buildings, and particularly the housing stock, are less energy efficient than elsewhere in the country.

Challenge: Pendle has an old and energy inefficient stock of buildings. The housing stock in the borough is the oldest outside of London – more than half of dwellings are pre-1919. Also, only 21% of dwellings have an EPC rating of C or above, and dwellings in the borough has a median environmental impact score of 55, the lowest in Lancashire. While there is no robust dataset available on commercial and industrial premises DESNZ are developing a National Buildings Database, which will capture this information.

Opportunity: Age and construction materials/method are major factors in building energy efficiency. Whilst there is a benefit in terms of the embodied carbon of well-constructed stone dwelling being retained in buildings that typically have a long life span, such buildings are costlier to heat and ventilate than modern buildings. There is a clear need to improve the energy efficiency of domestic and other properties, as well as encourage the uptake of renewable energy and low carbon fuel solutions - particularly for heating. This applies equally to the Council's property portfolio, where Pendle Borough Council has a role to play in leading the way (see below). This will in turn create opportunities for local construction, heating and plumbing trades to install building insulation and lower carbon/renewable energy technologies, as well as associated opportunities for local training businesses to upskill contractors to work with new, cleaner technologies and their effective retrofitting into 19th century buildings. Implementation of energy efficiency measures should be cognisant of the suitability dependent on building materials. Longer term, there may also be an opportunity to establish a centre of excellence for green skills education and training in the Borough.

Addressing the energy efficiency of Pendle's building stock, and the barriers to improving building energy efficiency, will improve the energy performance of the Borough and reduce its carbon emissions profile.

Embedding energy efficiency in working practices and processes, and in our lifestyles, is as important as ever. Stimulating behaviour change is a critical aspect of energy efficiency.

Challenge: How we do business and how we manage our households are an important part of improving our energy efficiency and reducing our overall energy consumption. Previous work by the International Energy Agency (IEA) has suggested that nearly two-thirds of the energy reduction needed to reach the net-zero goal will require people – and businesses – to change the way they do things. Raising awareness through 'nudges' is as important as policy and regulation.

Opportunity: There is a clear opportunity to support businesses and households to adopt more energy efficient practices and behaviours, to do things more efficiently and to reduce energy consumption. As well as reducing environmental impacts, improving energy efficiency will lower costs for households and businesses, and also bring productivity gains in industrial and commercial processes.

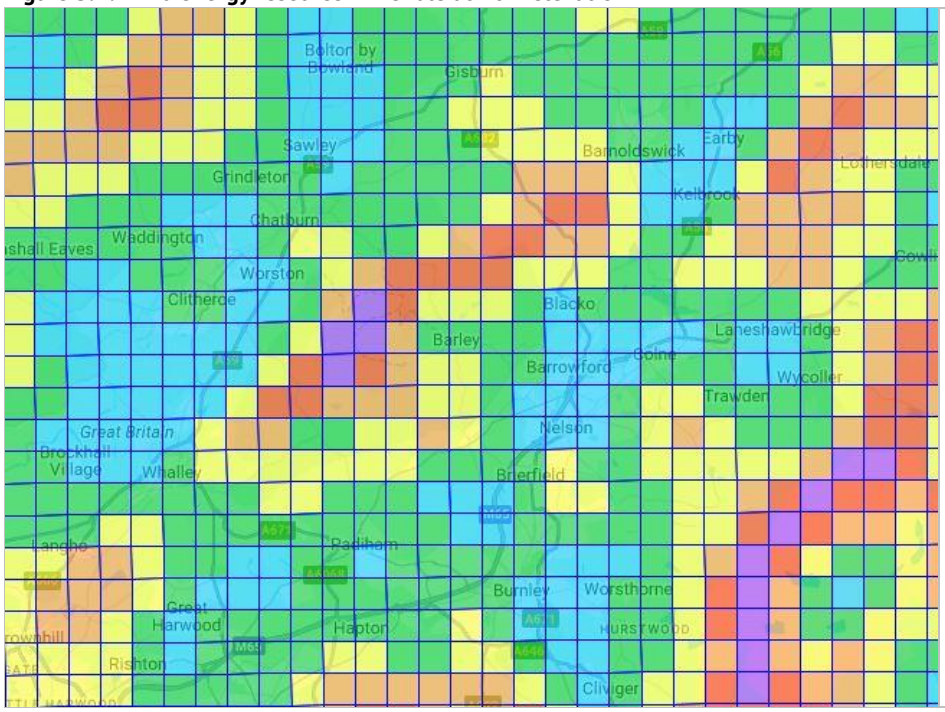
Encouraging changes in behaviour and business practices can make a significant contribution to reducing energy consumption, and ultimately to net zero ambitions. Stimulating more energy efficient behaviours will be an important part of Pendle's climate response.

Renewable energy generation

Renewable energy generation has a key role to play in developing a lower carbon Pendle, however, existing renewable wind energy developments in Pendle are limited. There is significant potential for solar PV systems being installed on domestic, commercial and public sector building roof areas.

Challenge: In line with carbon neutral and net zero ambitions, there is a need to move towards lower carbon energy generation. A de facto ban on onshore wind development was only lifted in 2024 by the new Labour Government. However, the available grid capacity for major renewable energy developments is a constraint. Additionally, in Pendle, the Forest of Bowland National Landscape and South Pennine Moors Site of Special Scientific Interest (including the SAC and SPA) cover large areas of the borough that would otherwise be suitable for renewable energy development. Elsewhere Biological Heritage sites limit opportunities on Weets Hill, Bleara Moor and Kelbrook Moor. This limits opportunities for pursuing and supporting renewable energy generation in the Borough. A further consideration is the limited areas with the average threshold wind speed that makes wind energy viable (Figure 3.1). Supporting this observation, there are only seven renewable schemes in the Renewable Energy Planning Database (REPD) at the end of 2024 for Pendle, of which three are solar PV, three are battery storage, and one is biomass.[20]

Figure 3.1: Wind energy resource in Pendle at 10m elevation



Source: NOABL Wind Speed Database/RenSMART mapping, 2025

[20] DESNZ (2024) Renewable Energy Planning Database, October 2024 (Q3)

Opportunity: Whilst there is some scope for supporting the development of onshore wind in some parts of the Borough, PV solar presents a good opportunity for renewable energy generation in Pendle: the ability of roof-mounted (and other) solar PV arrays is increasingly acknowledged to help reduce consumption of mains supplied electricity and the associated costs. This can apply in both domestic and commercial properties. Integrated with battery storage, these solar PV arrays will also allow surplus PV array output to be stored for use later in the day or the following morning. In addition, micro renewables can be supported in a way that offers businesses and households the potential to reduce their own carbon emissions and energy bills. Renewable energy solutions will increasingly incorporate battery storage, with more power then being retained and used in the local area.

There is also scope to charge batteries on cheaper electricity tariffs, using this to displace consumption of more expensive tariff electricity. While not reducing electricity consumption, this will help to reduce consumption costs and may help reduce some impacts of fuel poverty. This can be combined with local energy networks to increase the resilience of energy supply and further reduce dependency on fossil fuel-generated electricity.

Developing new renewable energy generation capabilities in Pendle will support the green transition in Pendle, while the increasing use of battery storage offers opportunities to retain more clean energy within the borough.

Pendle has faced challenges relating to the perceptions around new renewable energy developments.

Challenge: In recent years, there has been a low rate of planning applications for renewable energy developments in Pendle. Whilst there are barriers (outlined above) that have impacted on the scale of renewable wind development in the Borough, an unfavourable public perception of new onshore wind development and required infrastructure for electricity grid upgrades also plays a part in inhibiting the growth of renewables in Pendle. There is also a limit placed on development from the area's actual wind resource. There is more scope for installing solar PV in the area. To maximise the benefits of local renewable energy production from wind or solar, there is scope to integrate with battery storage.

Opportunity: In support of delivering new renewable energy installations in Pendle, there is an opportunity to influence communities and businesses through promoting and supporting appropriate renewable energy schemes. This may include solar PV and wind where this is possible; it may also include geothermal heat networks or micro hydro power schemes, where these are feasible. Some investigation has been made into the potential for geothermal heat from old mines in Pennine Lancashire and other areas, and this may yet play a future role in Pendle's renewable energy mix. This will ensure that local renewable energy production will play a role in a lower carbon Pendle.

Enhancing Pendle's renewable energy generation capacity will play a significant role in contributing to a lower carbon Pendle, while also playing a part in the wider decarbonisation of the British Energy Grid.

Low carbon transport

The persistence of combustion engine vehicles – particularly diesel – and the ongoing reliance on private vehicles presents a range of challenges in Pendle including greenhouse gas and particulate emissions, traffic congestion and increased road maintenance requirements.

Challenge: The number of ultra-low emission vehicles (ULEVs) in Pendle has increased significantly in recent years, from 10 in 2013 to 836 in 2023.[21] However, of the 52,218 licenced vehicles in Pendle at the end of 2023, over half (51%) were diesel and the proportion has increased from 45% in 2013.[22] Traffic flows in Pendle have increased steadily since 2020 back to pre-pandemic levels: average daily vehicle flows in 2022 were 458,165 (around 6% of average Lancashire daily flows), and more than 80% of this total was from cars and taxis. Increased vehicle numbers and flows, combined with more extreme weather (e.g. increased rainfall, abnormally low winter temperatures) can result in higher – and costlier – road maintenance requirements. Traffic congestion arising from increased vehicles on roads can also increase idling, an additional source of emissions. An Air Quality Management Area (AQMA) was declared by Pendle Borough Council on Windsor Street and Shipton Road, Colne in 2011.[23]

Opportunity: There is an opportunity to encourage the uptake of ULEVs amongst residents and businesses, through better promotion of low carbon vehicles and improvements to EV charging infrastructure. EV charging infrastructure provision, in particular, should be a significant programme of activity for the area which will help residents and businesses to have the confidence in switching to electric vehicles. Lancashire County Council was recently allocated more than £10 million from the Local Electric Vehicle Infrastructure (LEVI) fund to enhance the presence of on-street low-powered charge points in residential areas, and this roll-out can support greater EV charging infrastructure provision in Pendle. There is also scope to support road transport infrastructure improvements to alleviate traffic flow and congestion issues. There is a significant opportunity for the Council to demonstrate leadership through with electrification of the organisation's own fleet.

Encouraging a greater shift towards electric vehicle use, and particularly for local journeys, will contribute to significantly reducing the carbon emissions that arise from transport in Pendle, as well as improving air quality in the Borough.

[21] DfT (2024) Licensed ultra low emission vehicles (ULEVs) at the end of the quarter by fuel type, keepership (private and company) and upper and lower tier local authority
[22] DfT (2024) Licensed vehicles at the end of the quarter by body type, fuel type, keepership (private and company) and upper and lower tier local authority
[23] https://uk-air.defra.gov.uk/aqma/details?aqma_ref=689

Limited public transport and challenges around sustainable infrastructure present issues for the uptake of greener mobility options in Pendle

Challenge: Rural areas have limited public transport options and infrequent services. This typically increases use of and reliance on private vehicles. A lack of integration of public transport modes can compound this problem. Reflecting national trends, journeys made by bus in Lancashire have declined steadily over the last decade[24], as have rail journeys starting or ending at Pendle's three railway stations.[25] Sustainable transport infrastructure can also be expensive to implement. Additionally, whilst there is generally good understanding of the environmental and health benefits of sustainable travel, adverse weather conditions – and the climate of East Lancashire and the wider North West of England – can often deter cycling and walking. In addition, low levels of provision of cycling and active travel infrastructure – in comparison to areas such as Belgium, the Netherlands and Denmark, serve to discourage active travel and reinforce reliance on private motor vehicle transport.

Opportunity: There is an opportunity to stimulate a modal shift to more sustainable modes of transport in Pendle. Through partnering with strategic transport authorities, public transport providers and other relevant stakeholders, the delivery of sustainable transport infrastructure, including dedicated active travel routes, multi-modal transport hubs, and an integrated and accessible bus and rail public transport system, can be supported, but the absence of these – along with timetabling issues – are the cause of declining journey/passenger numbers. Solutions such as Integrated Ticketing Systems, bicycle and electric vehicle sharing programmes, Intelligent Transport Systems (ITS) and electrification of public transport can also be implemented, along with increased promotion of sustainable transport to stimulate behaviour change and modal shift.

Encouraging adoption of more sustainable modes of transport in Pendle will reduce reliance on combustion engine-powered vehicles, decrease carbon emissions associated with transport, and also bring wider health benefits arising from active travel.

[24] DfT (2024) Passenger journeys on local bus services (DfT Public Service Vehicle Survey)
[25] https://dataportal.orr.gov.uk/statistics/usage/estimates-of-station-usage

Climate adaptation and mitigation

Changing weather patterns and extreme weather events of increasing frequency are compounding existing climate risks in Pendle, increasing the likelihood of significant negative impacts, such as damage to infrastructure and buildings, and loss of agricultural produce.

Challenge: Pendle is susceptible to various types of flooding, with parts of the Borough having a long history of flooding. Climate change will increase adverse weather conditions in the Borough, whilst the increased frequency of extreme weather events prevents a very real threat to Pendle's vital infrastructure, buildings, homes and communities. This will bring with it disruption to transportation, utilities and services. The costs of repairing damage from extreme weather events (floods, storms, wildfires) will increase, and there will be reactionary insurance implications. For example, the winter floods of 2015/16 that resulting from Storms Desmond and Eva generated an average financial residential insurance claim of approximately £50,000.[26] Additionally, the National Flood Forum has previously estimated that annual premium increases of £3,000 per annum are common for properties deemed to be at flood risk and that excesses on claims of between £5,000 and £10,000 have been reported for properties with a history of flood claims.[27]

Similarly, periods of low precipitation can affect people and businesses in Pendle. Reduced water availability has implications for households and businesses, and agriculture in particular – lower crop yields can decrease the competitiveness and profitability of local farming industry and disincentivise farmers. Coupled with the impact of extreme weather events on agricultural output from lowland and upland farms in recent years, the farming community needs support to adapt and diversify its farming practices to meet the changing conditions, as well as to restore biodiversity on their land. Mechanisms such as the new Environmental Land Management (ELM) scheme[28] will support such actions; provision of Biodiversity Net Gain habitat banks for developments elsewhere will also enable farmers to secure positive environmental impacts and generate revenue.

Opportunity: There is a need for a more proactive approach to climate change mitigation and adaptation. Possible actions range from more resilient infrastructure to better mitigate and adapt to the effects of climate change, to increased preparedness for current and future climate change effects through improved knowledge and understanding. This may also include: the construction and civil engineering sectors adapting construction management programmes to account for extreme weather events; estate and land managers using softer nature-based solutions rather than hard engineering to mitigate and reduce flooding; and in agriculture, farms adapting cropping and husbandry practices to reflect climate change. More proactive and responsive plans that take a holistic approach to addressing local risks and threats, in line with Local Plan Policy DM01 (Climate change resilience) will help in this regard.

Working in partnership to support actions deliver adaptation and mitigation measures that safeguard Pendle's communities and businesses will help to effectively respond to the effects of climate change.

[26] https://www.gov.uk/government/publications/floods-of-winter-2015-to-2016-estimating-the-costs
[27] https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/assessing-flood-protection-and-resilience-measures-that-can-be-taken-by-individual-properties
[28] https://www.gov.uk/government/collections/future-of-farming-in-england

Differing degrees of understanding of and interest in climate change means that a more proactive approach to delivering and showcasing climate action is required.

Challenge: Current constraints on public resources make it difficult to implement comprehensive climate action plans. Thus, community engagement and mobilisation is essential to tackling climate change. However, participation in climate action is influenced by awareness of climate change and the measures required to mitigate against and adapt to it. Improved communication and delivery of high profile measures to capture attention of communities and businesses are necessary to secure increased engagement on climate change matters.

Opportunity: There is a need for improved communication on what a 'climate emergency' means and the implications of this declaration for land management and ownership. Part of this will involve ensuring that all Council policies and decision-making processes are aligned with the needs of climate change adaptation and mitigation. This will help to improve community resilience in the face of climate change.

A key priority is improved communication on all aspects of climate change, better influencing of developments within the Borough to ensure climate change adaptation and mitigation measures are built in, acting to increase engagement with the climate change agenda in Pendle.

Natural capital and green solutions

There are significant opportunities to develop ecosystem services in Pendle, responding to the challenges presented by climate change.

Challenge: Infrastructure upgrades require significant investment and co-ordination in response to climate change, and the costs of measures such as flood defences are increasing year-on-year, to keep infrastructure up-to-date and climate resilient. For example, The Environment Agency estimates that around £1 billion in funding per year is required to cope with flooding over the next decade in the UK.[29] However, in recent years, costs for defence and protection schemes, which typically require substantial capital investment to construct hard engineered infrastructure, have increased and investment plans are thus being scaled back.[30] As the challenges from the effects of climate change increase, there is a growing argument for a shift to resilience and nature-based solutions, which can deliver benefits as climate change risks and impacts increase.

Opportunity: Natural capital and green solutions delivered in line with Local Plan Policies SP08 and DM08, which can include wetland restoration, woodland creation and sustainable urban drainage systems, and can also be combined with hard engineered infrastructure, can improve both climate change protection *and* resilience. Whilst protection focuses on prevention of damage to buildings, areas and communities arising from the effects of climate change, resilience aims to manage the climate change effects that occur rather than stop them, minimise and mitigate any damage that is done, and ensure that any recovery processes necessary are as rapid as possible. Natural capital and green solutions can also deliver wider quality of life, socio-economic and environmental benefits for communities.[31,32]

[29] https://www.instituteforgovernment.org.uk/sites/default/files/2024-03/adapting-to-climate-change_0.pdf
[30] https://www.nao.org.uk/press-releases/resilience-to-flooding/
[31] https://www.tcpa.org.uk/what-is-green-infrastructure/
[32] https://www.sciencedirect.com/science/article/abs/pii/S0301479721006459

A key priority is to maximise the opportunity to implement nature-based solutions to deliver the necessary adaptations in response to climate change, and also to facilitate opportunities to secure additional ecosystem services.

The Council can work with stakeholders to help raise awareness of the costs and benefits of natural capital and nature-based solutions. These interventions historically and currently rely on public funding. However, there is an interest in how commercial financing can be attracted to support nature-based solutions, green infrastructure, etc.

Pendle Borough Council assets and activities

Leading the way

Stimulating action to target climate change mitigation and adaption requires public bodies to lead the way and demonstrate the values and approaches necessary to achieve net zero.

Challenge: Despite the delivery of comprehensive climate action plans being challenging, with limited resources, constrained budgets and challenging regulatory requirements, there remains a statutory requirement for public bodies to deliver against climate change and net zero objectives. Alongside this responsibility, public bodies have an important role to play in demonstrating the required measures and values to reduce greenhouse gas emissions and wider environmental impacts – thereby providing community leadership.

Opportunity: Setting the standards with regards to net zero wider climate change ambitions, and bringing climate actions into the mainstream, helps to provide stronger communication and stimulate greater interest and enthusiasm in tackling climate change. There is an opportunity to lead the way in implementing measures aimed at climate change challenges, to demonstrate their feasibility and viability, and to increase confidence amongst communities and businesses in their effectiveness.

Embedding and mainstreaming climate change in all Council policies, plans and ways of working is critical to setting the required climate-focused standards and demonstrating community leadership.

Influencing our businesses and communities

Without a co-ordinated response, climate change action will be ineffective. There is a need for public bodies to influence, educate and change behaviours across all stakeholder groups.

Challenge: Climate action requires a collective, co-ordinated response across public, private and voluntary and community sectors. A fundamental change in behaviours and processes in terms of how we work and live is needed to effectively respond to the climate challenge that faces us. There remains a need for greater action. However, a lack of awareness and understanding may serve to constrain greater levels of action than may otherwise be possible amongst businesses and communities. This information asymmetry must be addressed to drive meaningful action and change. Communities and businesses must be helped to build their climate literacy and adopt climate-focused approaches.

Opportunity: Pendle Borough Council can exploit its position as anchor institution and public body to influence others to follow its lead and adopt climate change measures and policies. By encouraging businesses, communities and residents to adopt and exhibit climate-conscious behaviours on a daily basis, the Council will bring about a collective approach through which we will be able to realise our net zero ambitions.

In line with efforts to embody the standards required to achieve net zero, influencing businesses, communities and residents to do the same in response to climate change must be a high priority for Pendle Borough Council.

5 Our strategic objectives for climate change and sustainability

This chapter builds on the challenges, opportunities and case for intervention by identifying targeted objectives for climate change and sustainability activities in Pendle. Each strategic objective is accompanied by an action plan with actions relating to the public sector, private sector, and the local community. For each action, the relative priority is set out, along with the type of role Pendle Borough Council should take towards the delivery of the action:

- Pendle Borough Council to take a **lead** role in progressing the action
- Pendle Borough Council to work in **partnership and collaboration** with other organisations to **support** and progress the action

Actions are colour-coded as follows. Indicative timescales are also set out.

	Immediate or short term	*<18 months*
	Medium term	*18-36 months*
	Long term	*>36 months*

Indicative costs are also provided for each action.

	Low cost	*<£100k*
	Medium cost	*£100k-£499k*
	High cost	*>£500k*

Strategic Objective 1: Energy efficiency and consumption

Objective

We will encourage and facilitate the implementation of energy efficiency measures in buildings, working practices and lifestyles throughout Pendle.

Changing our behaviours and the processes that underpin the way we do things is as important as adopting more energy efficient devices, equipment and measures in our businesses and homes. It is a vital part of becoming carbon neutral and ultimately achieving net zero, so we will support Pendle businesses and households to become more energy efficient.

Action plan

Short-term and immediate actions

PBC role	Action	Indicative cost
Public Sector		
Lead	Identify opportunities to develop low carbon heat systems, including ground or air source heating systems and geothermal district heat networks, using council-owned assets, including parks and open spaces	**Low**

PBC role	Action	Indicative cost
Private Sector		
Lead	Engage with private landlords to promote and encourage uptake of low carbon and energy efficiency measures to improve dwelling EPC ratings and reduce emissions	**Low**
Lead	Identify opportunities to renovate and retrofit disused industrial and commercial premises, including where buildings are suitable for conversion to private residential or social housing use	**Low**
Lead	Engage with Pendle businesses to support access to access energy efficiency support and training to support their operations and to exploit commercial opportunities in net zero	**Low**
Community		
Lead	Provide information and support to households and community groups to help reduce energy consumption, improve energy efficiency and secure grant funding for home improvements/upgrades, with a focus on those households in fuel poverty, and being cognisant of the suitability of energy efficiency measures recommended based on building construction material	**Low**

Medium- and longer-term actions

PBC role	Action	Indicative cost
Public Sector		
Lead	Identify and implement energy management measures across the Council's own estate to ensure that energy efficiency is maximised wherever possible	**Medium**
Lead	Lead on the development and submission of applications for grant funding in support of energy efficiency and retrofit measures on behalf of groups across the Borough	**Low**
Lead	Undertake feasibility work for building district heating schemes in Pendle, i.e. across key employment sites or town centres, and secure funding to explore the techno-economic feasibility of heat networks and other renewable energy schemes such as micro hydro power.	**Medium**

Strategic Objective 2: Renewable energy generation

Objective

We will support all appropriate opportunities to implement renewable energy installations at all scales.

Decarbonising energy generation is a critical component of meeting our net zero ambitions. Enabling renewable energy generation and seeking opportunities to implement local energy and heat networks will help to reduce carbon emissions, increase energy independence and resilience, reduce dependency on fossil fuels, and will help to support economic growth in clean and green sectors. An important part of this action will be to positively influence perceptions of renewable energy technologies to drive behaviour change.

Action Plan

Medium- and longer-term actions

PBC role	Action	Indicative cost
Public Sector		
Lead	Building on the estate review, assess Pendle Borough Council properties for suitability for solar PV generation – assess each property for access, grid connection, and installation requirements	**Medium**
Lead	Building on fleet review, review how PV arrays could help with Pendle Borough Council vehicle recharging	**Low**
Lead	Review Pendle Borough Council buildings to identify where battery storage and integration with solar PV panels is an option and whether variable tariff electricity could be a viable option	**Low**
Private Sector		
Lead	Actively engage with industry and community groups to identify new commercial or community-scale renewable energy developments that could be delivered in Pendle	**Low**
Community		
Partnership and collaboration	Actively partner to support the delivery of community energy schemes, including providing support to ensure that all community-managed buildings have been encouraged to investigate opportunities for solar PV and battery storage	**Medium**
Partnership and collaboration	Work with relevant partners to raise awareness of solar PV and battery storage for domestic properties, and how this can help to reduce energy costs and also help to reduce impacts of fuel poverty	**Low**
Lead	Identify and promote opportunities for renewable/green and decentralised heat and energy generation, including community energy schemes and smart local energy systems	**Low**

Strategic Objective 3: Low carbon transport

Objective

We will enable and promote the development and uptake of low carbon transport solutions, so that they are an accessible, attractive, low carbon and easy-to-use option for individuals and businesses.

We will work in partnership with all stakeholders to support and encourage more sustainable, low carbon and active travel options, to reduce the carbon emissions impact of travel in the borough.

Action Plan

Short-term and immediate actions

PBC role	Action	Indicative cost
Private Sector		
Partnership and collaboration	Engage with hackney carriage and private hire taxi operators to decarbonise the taxi fleet licenced and operating in Pendle, giving consideration to licensing requirements to achieve this	**Low**

Medium- and longer-term actions

PBC role	Action	Indicative cost
Public Sector		
Lead	Continually review the Pendle Borough Council vehicle fleet and prepare options for reduced carbon fleet renewal – principally electrification but also, where appropriate, alternative fuels, HVO, hydrogen.	**Medium**
Partnership and collaboration	Work with strategic partners on long term improvements to public transport connectivity, hubs and accessibility, including infrastructure plans and active travel plans	**High**
Partnership and collaboration	Work with strategic partners to deliver road and rail infrastructure plans in line with climate change and net zero ambitions, and stimulate a modal shift away from private vehicle use to more low carbon and sustainable modes of transport	**High**
Lead	Review Pendle Borough Council ways of working, staff working arrangements and travel requirements, to reduce the need for business and commuting travel, potentially reducing Pendle Borough Council fleet size	**Low**
Partnership and collaboration	Work with LCC and public transport operators to secure investment in hydrogen/electric buses	**Low**
Lead	Identify and implement measures to increase low carbon, sustainable and active travel options for Pendle Borough Council staff	**Medium**
Private Sector		
Lead	Introduce an eCargo bike library, allowing local businesses to borrow electric cargo bikes for deliveries	**Low**
Community		
Lead	Increase EV charging infrastructure across the borough, in line with LCC LEVI rollout and wider Lancashire and Blackburn with Darwen EV Infrastructure Strategy	**High**
Partnership and collaboration	Establish an electric car club to enable peer-to-peer EV sharing	**Medium**
Lead	Develop an initiative to target and support individuals moving into new properties to establish sustainable travel patterns	**Low**
Lead	Introduce facilities and services such as increased secure bike parking, e-bike charging points and e-bike trial schemes to support active and sustainable travel and increase the targeted provision of information and supporting services, such as bike repair, working with partners as necessary	**Medium**
Partnership and collaboration	Working with appropriate partners, establish sustainable co-working hub (accessed via pay-as-you-go or subscription) as an alternative to car-based commuting	**Medium**
Lead	Establish a Sustainable Travel Hub which supports and organises initiatives to promote sustainable travel	**Medium**
Partnership and collaboration	Improve wayfinding and promotion for active travel routes across the borough, including working with partners to secure investment in active travel infrastructure	**Medium**

Strategic Objective 4: Climate adaptation and mitigation

Objective

Working in partnership with all stakeholders, we will pursue options to implement adaptation and mitigation measures to better cope with, and respond to, the impacts of climate change.

Effects such as extremes of weather and changing climate patterns present a risk to our businesses, homes and infrastructure. In conjunction with partners, we will support actions that deliver adaptation and mitigation measures to safeguard urban and rural communities and businesses throughout the Borough.

Action Plan

Short-term and immediate actions

PBC role	Action	Indicative cost
Public Sector		
Lead	Review Pendle Borough Council's corporate environmental and procurement policies to identify opportunities to enhance sustainable procurement and build in low carbon and climate emergency principles, including that procurement policy should set out an expectation for all tenders to outline a measurable contribution to the Council's sustainability agenda	**Low**
Lead	Establish a suite of net zero requirements and criteria as part of the Council's procurement processes that require significant engagement with the net zero agenda in contracts above a specific threshold value (to be agreed), to drive Net Zero through the Council's supplier base, and ultimately in the wider supply chain	**Low**
Lead	Ensure that sustainability and climate change principles, actions and targets constitute part of Pendle Borough Council's corporate plan	**Low**
Lead	Continue to calculate and produce annual emissions reports, and ensure these are published on the Pendle Borough Council website, incorporating an increased range of Scope 3 greenhouse gas emissions that are measured, and using this to demonstrate to the area's businesses, how Scope 3 emissions can be assessed and incorporated in Net Zero plans	**Low**

Medium- and longer-term actions

PBC role	Action	Indicative cost
Public Sector		
Partnership and collaboration	Work with other Lancashire districts and town & parish councils to enable collective action on climate change	**Low**
Lead	Reduce waste and increase reuse and recycling through delivery of our waste services	**Medium**
Lead	Develop an external funding plan that identifies and secures capital and revenue funding to support Pendle Borough Council's climate change and decarbonisation programmes	**Low**
Lead	Continue to influence capital regeneration projects to ensure all designs and developments incorporate low carbon, energy efficiency and climate adaptation/mitigation measures from the outset	**Low**

PBC role	Action	Indicative cost
Lead	Review effectiveness and alignment of Pendle Borough Council's draft Local Development Plan and Policies with climate emergency and carbon neutrality ambitions	**Low**
Lead	Review operational assets and prepare/update costed options associated with decarbonisation including infrastructure and technology, as well as management, processes and systems	**Medium**
Lead	Identify and implement measures to improve the efficiency of work scheduling, processes and route optimisation in all Pendle Borough Council services	**Low**
Lead	Continue to reduce Pendle Borough Council's resource consumption through better use of IT and changes to ways of working	**Medium**
Lead	Ensure infrastructure, assets and services are better adapted and resilient to the impacts of climate change by carrying out risk assessments for key services	**Low**
Lead	Undertake work (including feasibility studies) to identify opportunities to develop low carbon heat systems, including ground or air source heating systems and district heat networks, using council-owned assets including parks and open spaces	**Medium**
Private Sector		
Partnership and collaboration	Support local businesses to implement low carbon, energy efficiency and circular economy measures, develop their own low carbon/climate change action plans, and develop their climate literacy – a key element of this will be building in Net Zero requirements in procurement and any business support activity	**Low**
Community		
Partnership and collaboration	Working with partner organisations such as LCC, engage with schools and education and training providers to promote skills development and training opportunities across low carbon, renewables, clean/green growth, climate change and climate resilience, etc. and to develop climate literacy amongst young people	**Low**
Lead	Review and update membership of CEWG to incorporate climate expert input, and explore the potential for establishing a citizen's climate change panel, or similar, to help shape local action on climate change	**Low**
Lead	Develop campaigns to encourage Pendle residents to take climate positive action, e.g. across recycling, food and food waste, environmental improvements, etc.	**Low**

Strategic Objective 5: Natural capital and green solutions

Objective

We will maximise the potential of Pendle's natural capital and seek opportunities to implement nature-based solutions in response to the effects of climate change, wherever possible.

Working with strategic partners, we will seek opportunities to work with Pendle's natural assets, and integrate them into approaches to increase resilience to climate change, and to enhance biodiversity and the natural environment.

Action Plan

Short-term and immediate actions

PBC role	Action	Indicative cost
Public Sector		
Lead	Maximise the opportunity to develop ecosystem services through the Local Development Plan, and through the planning development process more broadly, including but not limited to: using Biodiversity Net Gain requirements, habitat restoration (peatland, forestry), woodland creation, hedgerow restoration/planting, etc.	**Low**

Medium- and longer-term actions

PBC role	Action	Indicative cost
Private Sector		
Partnership and collaboration	Identify local priorities for nature-based solutions, ensuring alignment with the Lancashire Local Nature Recovery Strategy	**Low**
Lead	Maximise opportunity to develop ecosystem services through Pendle Borough Council open space related activity – e.g. parks and greenspace management/maintenance; planting/bedding; verge maintenance; wildflowers; re-wilding	**Low**
Partnership and collaboration	Support farmers to implement climate adaptation measures, such as climate change resistant crops and livestock, habitat restoration and rewilding on unproductive land, silvopasture, etc.	**Low**
Community		
Partnership and collaboration	Working with Ribble Rivers Trust and other partners, identify opportunities to undertake catchment repairs and restoration, as a means of flood prevention and water management	**Medium**
Partnership and collaboration	Support and encourage community climate initiatives, including habitat restoration, community forests and community growing schemes	**Low**
Partnership and collaboration	Work with LCC and strategic partners on property flood resilience and resistance, including identifying opportunities to implement nature-based solutions to enhance flood resilience	**Medium**
Partnership and collaboration	Develop a revised tree-planting plan and associated annual/multi-annual targets	**Low**

6 Delivering our strategy: Action plan and monitoring framework

The effective delivery of this climate change strategy is dependent not only on the role of Pendle Borough Council as an anchor institution that can set the direction of travel for climate-focused action, but also on acknowledging that effective partnership working and shared ownership of objectives and actions is crucial to its success. Local authorities are increasingly playing an enabling role, with growing contribution from a range of partners in the public, private and voluntary, community, faith and social enterprise (VCFSE) sectors.

The delivery of this strategy will be dependent upon co-operation, expertise, funding and/or in-kind resources from a range of potential partners, including but not limited to:

- Lancashire County Council
- Other Pennine Lancashire authorities
- East Lancashire Chamber of Commerce
- UK Government departments such as DESNZ, BEIS and DEFRA, as well as non-departmental public bodies such as the Environment Agency and Natural England
- Ribble Rivers Trust
- Town and parish councils in Pendle
- Citizens Advice East Lancashire
- Boost Business Lancashire
- Education providers including Nelson & Colne College, schools and HEI partners
- Voluntary, community, faith and social enterprise (VCFSE) organisations
- Forest of Bowland National Landscape
- Lancashire Wildlife Trust
- RSPB

The Strategic Framework reflects the importance of effective partnerships in delivering our vision. Pendle Borough Council's role in the action plan is identified as being either:

- **Lead**, either where statutory responsibility dictates that Pendle Borough Council does so, or where funding allows and it makes sense for Pendle Borough Council to assume lead responsibility.
- Work in **partnership and collaboration** to deliver – Pendle Borough Council playing an influencing and supporting role

Governance

The Climate Change Strategy will be led by the Council's Economic Growth department and overseen by Pendle Borough Council's Corporate Leadership Team who will work closely with the Climate Emergency Working Group to support delivery of the Strategy.

Securing future funding support

Success of the strategy will depend on delivery and funding from a range of partners. There is a continued imperative to seek further funding to deliver the activity necessary to effectively respond to the climate emergency in Pendle. Continued efforts to secure funding to allow programmes of activity to be extended and enhanced, and secure new sources of funding, are essential across public and private sector sources. Opportunities to lever wider investment will be considered regularly to identify potential future sources, priority intervention areas, including developing a pipeline of initiatives in line with the actions specified.

Monitoring progress

An Annual Report will review and report progress of the Climate Change Strategy to share with partners, highlighting key successes and performance and progress against key performance indicators, and to inform reporting to the Corporate Leadership Team, Executive Committee and Climate Emergency Working Group, as necessary.

Actions will be regularly reviewed to ensure that the Strategy is responsive to dynamic climate and environmental challenges.

The action plan and monitoring framework set out in Appendix A.1 includes both immediate/short-term actions and associated tasks that should be pursued as a matter of priority, plus medium- and longer-term actions. As progress is made on delivery of this strategy, medium- and longer-term actions, as set out in Section 5, should be reviewed in terms of the suitability of targets and indicators developed to gauge progress.

7 Community engagement plan

Pendle Borough Council has control over the actions that it takes to reduce emissions from its own estate and operations. Pendle is a local government district within Lancashire and is consequently affected by the carbon reduction decisions made by Lancashire County Council and the regulations and legislature implemented by Lancashire and the UK Government. All three of these public sector organisations have a key role in tackling climate changes as policy-making entities and it is crucial that each organisation's strategic decisions are aligned.

Local authorities have powers or influence over roughly a third of emissions in their local areas and top-down policies go some way to reducing emissions, however, a community-wide approach is needed to reduce emissions across the Borough.[33]

Engagement and collaboration between Pendle Borough Council and Pendle's communities is necessary for the goal of achieving Net Zero by 2050 as the Council cannot deliver this without buy-in from its residents. Long-term dialogue between communities and the Council is essential. Therefore, partnership engagement strategies will be developed to adapt to evolving needs and messages, while adhering to some core engagement principles. This chapter briefly outlines Pendle Borough Council's guiding principles for community engagement alongside information on the engagement process, including key stakeholders, engagement approach and methods, and indicative timelines and milestones for engagement on this Climate Change Strategy.

Guiding principles

In engaging communities on climate change and the strategy Pendle Borough Council will ensure that its approach is:

- **Aspirational** – the approach is inspired by a strong and continuing ambition to achieve its aims and objectives within the stated timeframes.
- **Enabling** – Pendle's communities are given the opportunity to shape their own future and their environment.
- **Inclusive** – the approach is accessible and promotes equality for all of Pendle's communities.
- **Transparent** – the approach prioritises honesty, trust, and open dialogue between the Council and Pendle's communities.
- **Effective** – the approach maximises its chances of creating real change for Pendle's communities through effectual and constructive engagement.
- **Communicative** – communication between the Council and Pendle's communities is clear and consistent to ensure communities are informed on Council decision making.

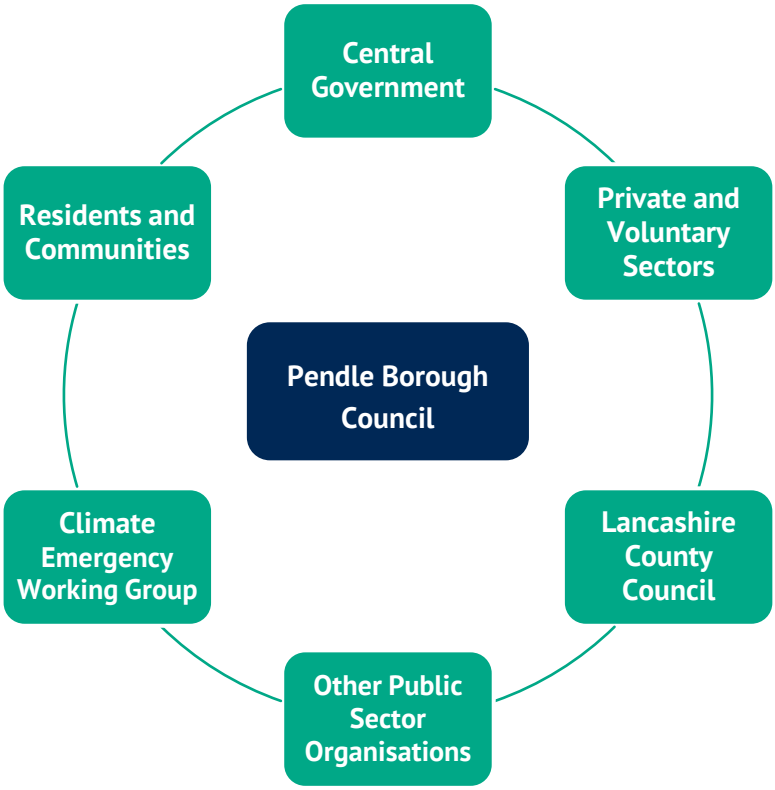
[33] https://www.derbyshire.gov.uk/site-elements/documents/pdf/environment/climate-change/climate-change-engagement-plan-2021-to-2025.pdf

Engagement process

Key stakeholders

Pendle Borough Council has a key role to lead, support, and advance efforts to tackle climate change. Key stakeholders to be included in the delivery of the Pendle's Climate Change Strategy are identified in Figure 7.1.

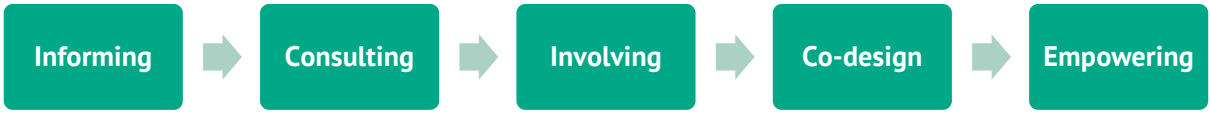
Figure 7.1: Key stakeholders for Pendle's Climate Change Strategy



Engagement approach and methods

The Local Authorities and the Sixth Carbon Budget report identifies five key types of engagement, shown in Figure 7.2, with different levels of ownership which will be covered by Pendle Borough Council's community engagement plan and approach.[34]

Figure 7.2: Engagement approaches



1. **Informing** – One way, information provision.
2. **Consulting** – Statutory consultations on already developed plans and proposals.
3. **Involving** – Directly working with people to understand their views and needs e.g. Climate Commissions.

[34] https://www.theccc.org.uk/wp-content/uploads/2020/12/Local-Authorities-and-the-Sixth-Carbon-Budget.pdf

4. **Co-design** – working together with people at a local level or interest groups to design solutions and projects.
5. **Empowering** – Handing over the power and co-creating schemes to tackle a problem or deliver a solution.

Table 7.1 outlines the methods that the Council will use to undertake each type of approach.

Table 7.1: Engagement methods by approach

Approach	Method
Informing	• Press releases • Social media • Website and other digital channels
Consulting	• Citizens' panels • Focus groups
Involving	• Community groups and forums • Public consultations • Surveys
Co-design	• Community groups and forums • Focus groups
Empowering	• Community groups and forums • Community representatives/climate champions

Timelines and milestones

It is important that the Council aligns its community engagement timelines and milestones with its actions and objectives. The Council aims to complete the engagement methods, outlined in Table 7.1, in the short-term, medium-term, and long-term, depending on the prioritisation of each objective.

Intended timelines will be managed flexibly to allow the Council to proactively engage communities on opportunities or challenges that arise.

Appendices

A.1. Action plan and monitoring framework

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
Energy efficiency and consumption	Identify and implement energy management measures across the Council's own estate to ensure that energy efficiency is maximised wherever possible	Medium term	No. of energy efficiency measures implemented	**Lead**	-
	Identify opportunities to develop low carbon heat systems, including ground or air source heating systems and geothermal district heat networks, using council-owned assets including parks and open spaces	Short term	No. of potential low carbon heating schemes identified for further investigation	**Lead**	-
	Engage with private landlords to promote and encourage uptake of low carbon and energy efficiency measures to improve dwelling EPC ratings and reduce emissions	Short term	No. of private landlords engaged and encouraged to implement low carbon/energy efficiency measures	**Lead**	Private landlords Cosy Homes in Lancashire Rhea Projects
	Identify opportunities to renovate and retrofit disused industrial and commercial premises, including where buildings are suitably for conversion to private residential or social housing use	Short term	No. of renovation and retrofit opportunities identified	**Lead**	-
	Provide information and support to households and community groups to help reduce energy consumption, improve energy efficiency and secure grant funding for home or building improvements/upgrades, with a focus on households in fuel poverty	Short term	Development of information and support scheme or programme for energy efficiency and home improvement	**Lead**	Lancashire County Council Cosy Homes in Lancashire Rhea Projects
			No. of households or community groups engaged and issued with information packs	**Lead**	Lancashire County Council town and parish councils VCFSE organisations Citizens Advice East Lancashire
			No. of households or community groups supported to access grants	**Lead**	Lancashire County Council Town and parish councils VCFSE organisations Citizens Advice East Lancashire

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Engage with Pendle businesses to support access to access energy efficiency support and training to support their operations and to exploit commercial opportunities in net zero	Short term	No. of businesses supported	**Lead**	Lancashire County Council Boost Business Lancashire East Lancashire Chambers of Commerce
	Lead on the development and submission of applications for grant funding in support of energy efficiency and retrofit measures on behalf of groups across the Borough	Longer term	No. of funding opportunities identified to support energy efficiency and retrofit measures	**Lead**	Town and parish councils VCFSE organisations
			No. of funding applications submitted	**Lead**	Town and parish councils VCFSE organisations
			Amount of funding received (£)	**Lead**	Town and parish councils VCFSE organisations
	Undertake feasibility work for building district heating schemes in Pendle, i.e. across key employment sites or town centres, and secure funding to explore the techno-economic feasibility of heat networks	Longer term	No. of potential district heating schemes identified for further investigation	**Lead**	Lancashire County Council Town and parish councils VCFSE organisations
Renewable energy generation	Building on the estate review, assess Pendle Borough Council properties for suitability for solar PV generation – assess each property for access, grid connection, and installation requirements	Medium term	No. of properties identified	**Lead**	-
			No. of solar PV systems installed	**Lead**	-
			Amount of energy generated by solar PV arrays (kWh)	**Lead**	-
			Greenhouse gas emissions saved by solar PV generation (tCO_2e)	**Lead**	-
			Promote the adoption of solar PV on the Council's own estate	**Lead**	-
	Building on fleet review, review how PV arrays could help with Pendle Borough Council vehicle recharging	Medium term	Review of opportunities for vehicle charging PV arrays undertaken	**Lead**	-
	Review Pendle Borough Council buildings to identify where battery storage and integration with solar PV panels is an option and whether variable tariff electricity could be a viable option	Medium term	No. of potential options for battery storage integration identified	**Lead**	-

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Actively engage with industry groups to identify new commercial or community-scale renewable energy developments that could be delivered in Pendle	Medium term	No. of potential renewable energy developments identified	**Lead**	TBC
			No. of commercial renewable energy schemes installed	**Partnership and collaboration**	TBC
			Amount of energy generated (kWh)	**Partnership and collaboration**	TBC
			Greenhouse gas emissions saved (tCO_2e)	**Partnership and collaboration**	TBC
	Actively partner to support the delivery of community energy schemes, including providing support to ensure that all community-managed buildings have been encouraged to investigate opportunities for solar PV and battery storage	Medium term	No. of community groups supported to deliver community energy schemes	**Partnership and collaboration**	Town and parish councils VCFSE organisations
			No. of community-managed facilities/buildings that have installed solar PV, battery storage or similar	**Partnership and collaboration**	Town and parish councils VCFSE organisations
	Work with relevant partners to raise awareness of solar PV and battery storage for domestic properties as well as community owned or managed buildings, and how this can help to reduce energy costs and also help to reduce impacts of fuel poverty	Medium term	No. of households or community groups engaged in awareness-raising activity	**Partnership and collaboration**	Town and parish councils VCFSE organisations Citizens Advice East Lancashire
			No. of households or community groups supported to install domestic scale renewable energy equipment	**Partnership and collaboration**	Town and parish councils VCFSE organisations Citizens Advice East Lancashire
			No. of domestic solar PV arrays and battery systems installed	**Partnership and collaboration**	Town and parish councils VCFSE organisations Citizens Advice East Lancashire
			No. of heat pumps installed	**Partnership and collaboration**	Town and parish councils VCFSE organisations Citizens Advice East Lancashire

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Identify and promote opportunities for renewable/green and decentralised heat and energy generation, including community energy schemes and smart local energy systems	Longer term	No. of opportunities for renewable/green and decentralised heat and energy generation identified	**Lead**	-
Low carbon transport	Continually review the Pendle Borough Council vehicle fleet and prepare options for reduced carbon fleet renewal using alternative fuels, HVO, hydrogen, electric.	Medium term	Fleet review undertaken	**Lead**	-
			ULEV and alternative vehicles introduced to Pendle Borough Council fleet	**Lead**	-
			Proportion of the Pendle fleet that is comprised of ULEVs	**Lead**	-
			No. of Pendle Borough Council staff trained in efficient driving	**Lead**	-
	Work with strategic partners on long term improvements to public transport connectivity, hubs and accessibility, including infrastructure plans and active travel plans	Medium term	Development of public transport infrastructure and active travel plans	**Partnership and collaboration**	Lancashire County Council (lead) National Highways North West Network Rail Northern Rail DfT Operator Department for Transport
	Work with strategic partners to deliver road and rail infrastructure plans in line with climate change and net zero ambitions, and stimulate a modal shift away from private vehicle use to more low carbon and sustainable modes of transport	Longer term	Development and delivery of road and rail infrastructure plans	**Partnership and collaboration**	Lancashire County Council (lead) National Highways North West Network Rail Northern Rail DfT Operator Department for Transport
	Review Pendle Borough Council ways of working, staff working arrangements and travel requirements, to reduce the need for business and commuting travel, potentially reducing Pendle Borough Council fleet size	Longer term	Revised ways of working for Pendle Borough Council staff	**Lead**	-
			Revised Pendle Borough Council staff travel policy	**Lead**	-

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Engage with hackney carriage and private hire taxi operators to decarbonise the taxi fleet licenced and operating in Pendle, giving consideration to licensing requirements to achieve this	Short term	No. of hackney carriage operators engaged	**Partnership and collaboration**	Hackney Carriage operators
			No. of private hire taxi operators engaged	**Partnership and collaboration**	Private hire taxi operators
			No. of ULEV hackney carriage or private hire taxis licenced to operate in Pendle	**Partnership and collaboration**	Hackney Carriage operators Private hire taxi operators
	Increase EV charging infrastructure across the borough, in line with LCC LEVI rollout and wider Lancashire and Blackburn with Darwen EV Infrastructure Strategy	Medium term	No. of EV charging points	**Lead**	Lancashire County Council Electricity North West
			No. of EV charging points per registered ULEV vehicle	**Lead**	-
	Work with LCC and public transport operators to secure investment in hydrogen/electric buses	Longer term	No. of investments in hydrogen/electric buses secured	**Partnership and collaboration**	Lancashire County Council Public transport providers
	Identify and implement measures to increase low carbon, sustainable and active travel options for Pendle Borough Council staff	Longer term	No. of low carbon, sustainable and active travel options for Pendle Borough Council staff implemented	**Lead**	-
	Introduce an eCargo bike library, allowing local businesses to borrow electric cargo bikes for deliveries	Longer term	Establishment of eCargo bike library	**Lead**	Pendle businesses
	Establish an electric car club to enable peer-to-peer EV sharing	Longer term	Establishment of electric car club	**Partnership and collaboration**	Lancashire County Council Car club operators
	Develop an initiative to target and support individuals moving into new properties to establish sustainable travel patterns	Longer term	Development of initiative	**Lead**	Local estate agents/property management companies
	Introduce facilities and services such as increased secure bike parking, e-bike charging points and e-bike trial schemes to support active and sustainable travel and increase the targeted provision of information and supporting services, such as bike repair, working with partners as necessary	Longer term	No. of secure bike parking facilities installed	**Lead**	-
			No. of e-bike charging points installed	**Lead**	-
			Development of e-bike trial scheme	**Lead**	-

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Working with appropriate partners, establish sustainable co-working hub (accessed via pay-as-you-go or subscription) as an alternative to car-based commuting	Longer term	Establishment of sustainable co-working hub	**Partnership and collaboration**	East Lancashire Chambers of Commerce VCFSE organisations
	Establish a Sustainable Travel Hub which supports and organises initiatives to promote sustainable travel	Longer term	Establishment of sustainable travel hub	**Lead**	Sustrans
	Improve wayfinding and promotion for active travel routes across the borough, including working with partners to secure investment in active travel infrastructure	Longer term	No. of active travel routes with improved or new wayfinding	**Partnership and collaboration**	Lancashire County Council
Climate adaptation and mitigation	Review Pendle Borough Council's corporate environmental and procurement policies to identify opportunities to enhance sustainable procurement and build in low carbon and climate emergency principles	Short term	Reviewed and revised policies	**Lead**	-
	Establish a suite of net zero requirements and criteria as part of the Council's procurement processes that require significant engagement with the net zero agenda in contracts above a specific threshold value	Short term	Net zero procurement requirements for larger tenders developed	**Lead**	-
			No. of suppliers engaged with net zero requirements and confirming they have net zero action plans	**Lead**	-
	Develop an external funding plan that identifies and secures capital and revenue funding to support Pendle Borough Council's climate change and decarbonisation programmes	Medium term	Establishment of funding plan	**Lead**	-
			No. of grant and other funding applications prepared	**Lead**	-
	Ensure that sustainability and climate change principles, actions and targets constitute part of Pendle Borough Council's corporate plan	Short term	Inclusion of explicit sustainability, climate change and net zero commitments and principles in Pendle Borough Council's Corporate Plan	**Lead**	Elected members Town and Parish Councils Community Groups VCFSE organisations
	Continue to influence capital regeneration projects to ensure all designs and developments incorporate low carbon, energy	Medium term	No. of capital regeneration projects incorporating low carbon, energy efficiency and climate adaptation/mitigation measures in line with the climate change strategy	**Lead**	Lancashire County Council Other Pennine Lancashire authorities

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	efficiency and climate adaptation/mitigation measures from the outset				
	Continue to calculate and produce annual emissions reports, and ensure these are published on the Pendle Borough Council website, incorporating an increased range of Scope 3 greenhouse gas emissions	Short term	Production of annual emissions report	**Lead**	-
	Review effectiveness and alignment of Pendle Borough Council's draft Local Development Plan and Policies with climate emergency and carbon neutrality ambitions	Medium term	Local Development Plan and associated policies reviewed	**Lead**	-
	Support local businesses to implement low carbon, energy efficiency and circular economy measures, develop their own low carbon/climate change action plans, and develop their climate literacy	Medium term	No. of businesses supported to implement low carbon, energy efficiency and circular economy measures	**Partnership and collaboration**	Lancashire County Council Boost Business Lancashire East Lancashire Chambers of Commerce
			No. of businesses supported to develop low carbon/climate change action plans	**Partnership and collaboration**	Lancashire County Council Boost Business Lancashire East Lancashire Chambers of Commerce
	Review operational assets and prepare/update costed options associated with decarbonisation including infrastructure and technology, as well as management, processes and systems	Longer term	Review of operational assets undertaken	**Lead**	-
			Costed options developed	**Lead**	-
	Identify and implement measures to improve the efficiency of work scheduling, processes and route optimisation, etc. in all Pendle Borough Council services	Longer term	Work efficiency measures for scheduling, processes and route optimisation, etc. implemented	**Lead**	-
	Work with other Lancashire districts and town & parish councils to enable collective action on climate change	Medium term	No. of collaborative climate change workstreams established	**Partnership and collaboration**	Lancashire County Council Lancashire Borough and District Councils Town & Parish Councils
	Reduce waste and increase reuse and recycling through delivery of our waste services	Medium term	Recycling rate in Pendle	**Lead**	-
		Medium term	Energy consumption	**Lead**	-

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Continue to reduce Pendle Borough Council's resource consumption through better use of IT and changes to ways of working		Spend on supplies and consumables	**Lead**	-
	Ensure infrastructure, assets and services are better adapted and resilient to the impacts of climate change by carrying out risk assessments for key services	Longer term	No. of climate risk assessments for key services undertaken	**Lead**	-
	Undertake work (including feasibility studies) to identify opportunities to develop low carbon heat systems, including ground or air source heating systems and district heat networks, using council-owned assets including parks and open spaces	Longer term	No. of opportunities for low carbon heat systems identified	**Lead**	-
	Working with partner organisations such as LCC, engage with schools and education and training providers to promote skills development and training opportunities across low carbon, renewables, clean/green growth, climate change and climate resilience, etc. and to develop climate literacy amongst young people	Medium term	No. of schools engaged	**Partnership and collaboration**	Lancashire County Council Nelson & Colne College
	Review and update membership of CEWG to incorporate climate expert input, and explore the potential for establishing a citizen's climate change panel, or similar, to help shape local action on climate change	Medium term	CEWG membership review undertaken	**Lead**	-
	Develop campaigns to encourage Pendle residents to take climate positive action, e.g. across recycling, food and food waste, environmental improvements, etc.	Medium term	Campaign(s) developed	**Lead**	-
Natural capital and green solutions	Maximise the opportunity to develop ecosystem services through the Local Development Plan, and through the planning development process more broadly	Short term	No. of LDP policies, supplementary planning documents or other guidance that carries material weight drafted	**Lead**	Lancashire County Council Natural England Environment Agency

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Identify local priorities for nature-based solutions, ensuring alignment with the Lancashire Local Nature Recovery Strategy	Medium term	No. of priorities identified	**Lead**	Lancashire County Council Forest of Bowland National Landscape Lancashire Wildlife Trust RSPB Natural England Environment Agency
	Maximise opportunity to develop ecosystem services through Pendle Borough Council open space-related activity	Medium term	No. of approaches or schemes implemented on Council-owned or managed open spaces that aim to provide ecosystem services (e.g. increased biodiversity, improved air quality, shade, etc.)	**Lead**	Lancashire County Council Lancashire Wildlife Trust RSPB Natural England Environment Agency
	Work with LCC and strategic partners on property flood resilience and resistance, including identifying opportunities to implement nature-based solutions to enhance flood resilience	Longer term	Area of land managed under natural capital/nature-based solution programmes for climate change adaptation/mitigation (m^2)	**Partnership and collaboration**	Lancashire County Council Ribble Rivers Trust Natural England Environment Agency
			No. of properties protected by flood resilience schemes	**Partnership and collaboration**	Lancashire County Council Ribble Rivers Trust Natural England Environment Agency
			No. of potential nature-based flood defence schemes identified	**Partnership and collaboration**	Lancashire County Council Ribble Rivers Trust Natural England Environment Agency
	Develop a revised tree-planting plan and associated annual/multi-annual targets	Longer term	Production of revised tree planting plan	**Partnership and collaboration**	Ribble Rivers Trust Natural England Environment Agency
	Working with Ribble Rivers Trust and other partners, identify opportunities to undertake catchment repairs and restoration, as a means of flood prevention and water management	Medium term	No. of potential catchment and river channel repairs identified	**Partnership and collaboration**	Lancashire County Council Ribble Rivers Trust Natural England Environment Agency
			No. of catchment and river channel repairs delivered	**Partnership and collaboration**	Lancashire County Council Ribble Rivers Trust Natural England Environment Agency

Thematic priority	Action	Timescale	Key performance indicator	Pendle Borough Council role	Potential partners
	Support farmers to implement climate adaptation measures, such as climate change resistant crops and livestock, habitat restoration and rewilding on unproductive land, silvopasture, etc.	Longer term	No. of farms supported	**Partnership and collaboration**	NFU
	Support and encourage community climate initiatives, including habitat restoration, community forests and community growing schemes	Longer term	No. of community climate initiatives supported	**Partnership and collaboration**	Town and parish councils VCFSE organisations

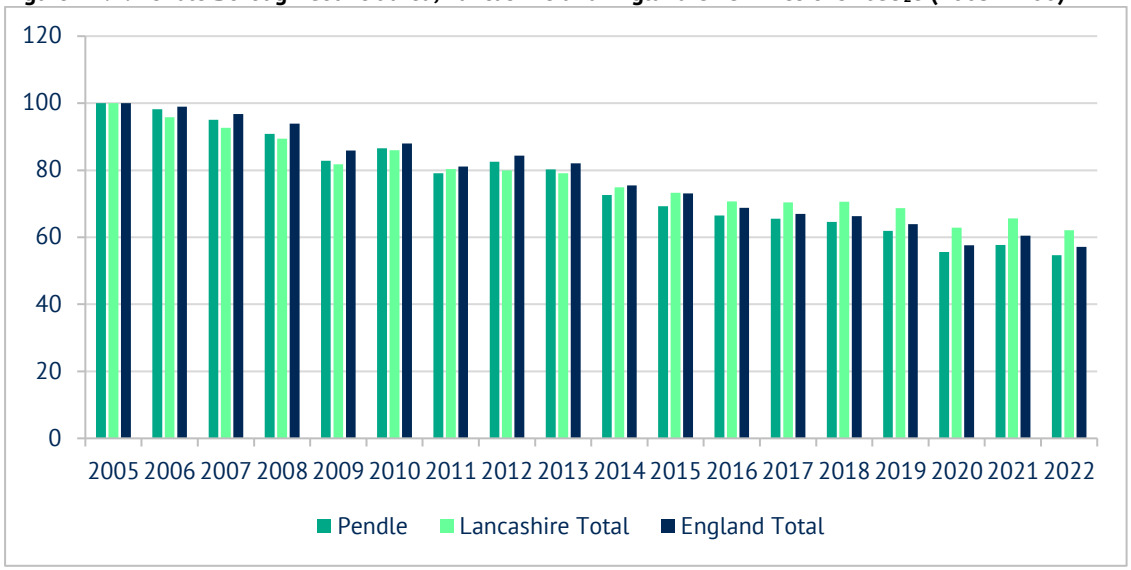
A.2. Pendle Borough emissions, energy consumption and housing data

Pendle's greenhouse gas emissions

Local authority area emissions

The need to reduce greenhouse gas (GHG) emissions is well documented and has a number of national and international drivers, some of these as discussed in the preceding pages. In response to these policy drivers, national and regional GHG emissions have been declining. The following graphic[35] illustrates this decline at a national and regional level. Changes to how we consume energy and the way our annual energy supply is produced, are major contributors to these declining GHG emissions.

Figure A2.1: Pendle Borough Council area, Lancashire and England GHG Emissions $ktCO_2e$ (2005 = 100)



Source: DESNZ (2024) UK local authority and regional greenhouse gas emissions statistics: 2005-2022

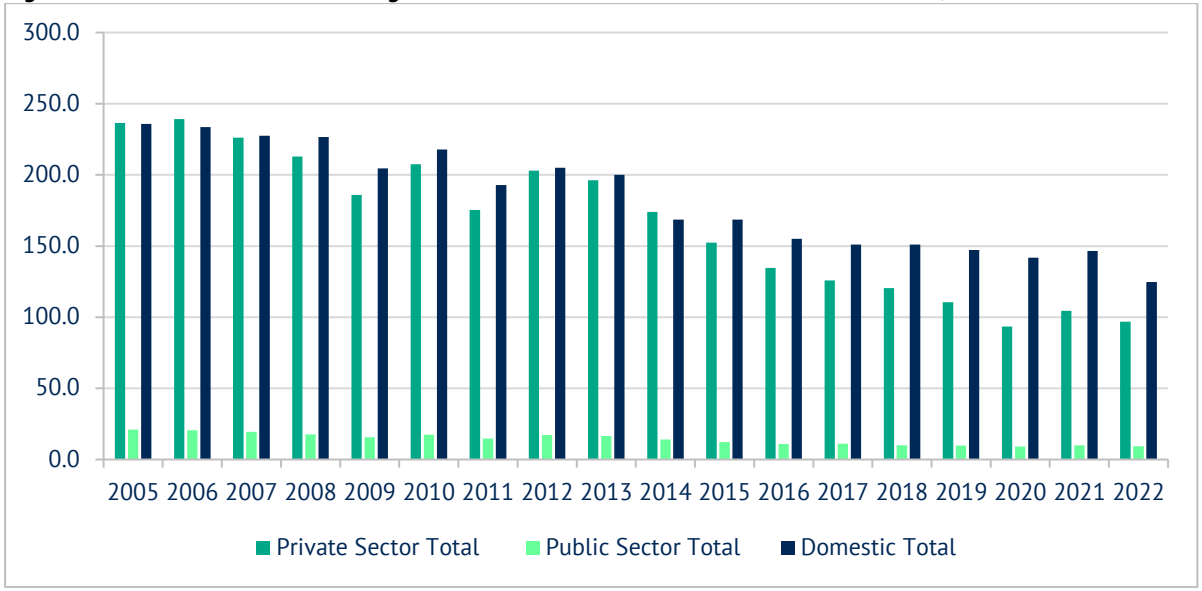
[35] https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-statistics-2005-to-2022

At a national level, there have been a range of strategic and policy drivers to support delivery of the required reduction in greenhouse gas emissions. These are reviewed in more detail in the following pages. The decline in GHG emissions will need to be continued in the coming years. As the easier to reduce sources of GHG emissions are addressed, it will become more challenging to maintain this decline. Key factors to consider will include:

- The cost of reducing future emissions and the cost per TCO_2e saved as we have to deal with more complex sources of GHG emissions
- There needs to be the skills and local capacity to implement and install GHG emission reducing equipment, etc. Where this does not exist, consideration should be given to how it can be created.
- The extent to which there is an understanding amongst business and individuals of the need to continue GHG emission reduction.
- How local bodies like Pendle Borough Council can support this awareness and, when appropriate, support pertinent programmes and activity to reduce local GHG emissions.

The consumption of energy in the Pendle Borough Council area building stock is a major source of GHG emissions. The following graphic illustrates the proportions of emissions arising from different building "sectors". While the long term trend is declining GHG emissions, there are short periods where emissions increase. This can be linked to periods of adverse winter weather which results in more energy consumed for heating. They can also arise from changes in data collection etc.

Figure A2.2: Sources of Pendle Borough Council Area GHG Emissions from Different Sectors, kt CO_2e 2005-2022



Source: DESNZ (2024) UK local authority and regional greenhouse gas emissions statistics: 2005-2022

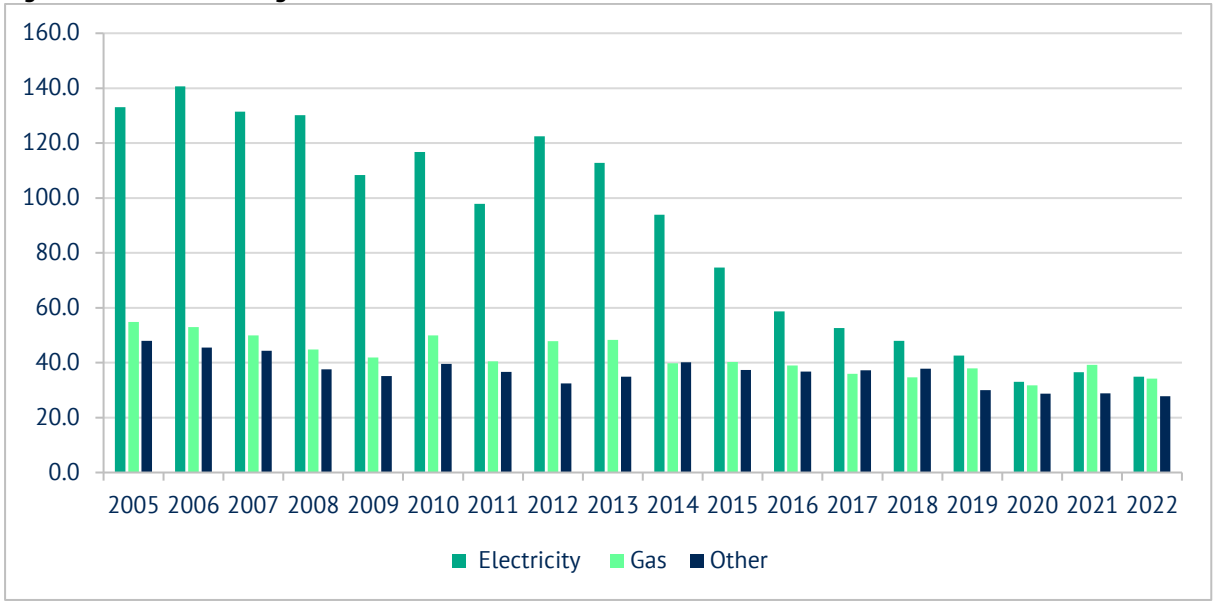
Pendle Borough Council itself is included in the Public Sector, which as the chart illustrates, is a small source of the area's building related GHG emissions. There are different policy drivers to help reduce commercial and domestic property GHG emissions. A key issue for Pendle Borough Council will be working with stakeholders to help reduce the area's domestic GHG emissions across the Private Sector and also to reduce domestic emissions. The area's aged housing stock has an impact on the amount of heating required, and the associated GHG emissions. Consumption of mains supplied natural gas for heating in domestic properties is a cheap source of heating for older properties that have elevated levels of heat loss. Insulating these properties to reduce heat loss and support the transition to electric heating will require sustained policy support and funding for a number of years.

A key factor in national and regional GHG emission trends is the declining consumption of fossil fuels; oil coal and gas, which is used to produce grid supplied electricity. There is an increasing proportion of our national electricity supply that is derived from renewable energy sources, especially on and offshore wind. This transition away from fossil fuel electricity generation is allowing our national electricity supply to have lower GHG emissions per MWh generated. Additionally, there is scope to import power from countries such as France, where nuclear energy makes a large contribution to producing the country's fossil fuel free electricity.

Declining GHG emissions can also be linked to more awareness of energy efficiency. For example, over the period covered by Figure A2.3, the provision of artificial lighting has evolved from incandescent/filament luminaries, to the use of fluorescent and CFL lamps and luminaries, to the current focus on LED luminaries. Each of these transitions to different lighting technologies helped reduce energy consumption and the annual operating cost for artificial illumination. This type of transformation has occurred across the spectrum of static (building) energy consumption.

The amount of GHG emissions arising from energy consumed in the private sector has declined. The capacity to engage with more energy efficient equipment; heating, lighting pumps, motors etc has helped reduce energy consumption and associated GHG emissions. Economic restructuring from traditional to newer forms of hi-tec and cleaner manufacturing and also the transition from private sector production/manufacturing activity to services activity have all affected both the nature and amount of energy consumption. The following chart illustrates the changing energy mix consumed by the private sector in the Pendle Borough Council area, and the resulting GHG emissions' impact.

Figure A2.3: Pendle Borough Council Area Private Sector GHG Emissions kt CO_2e 2005-2022

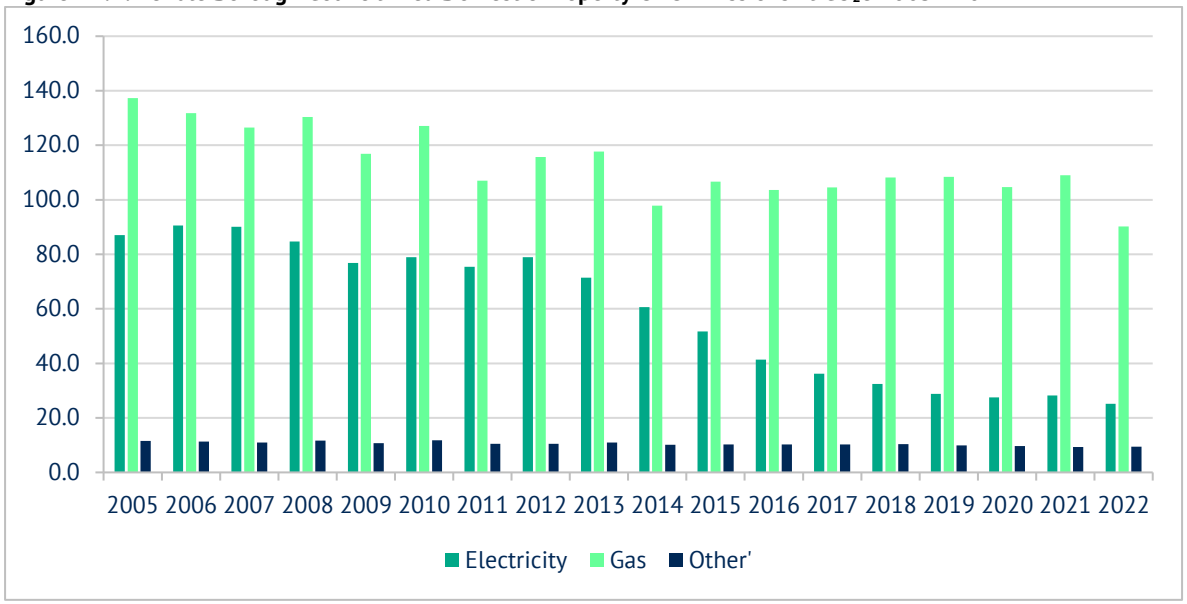


Source: DESNZ (2024) UK local authority and regional greenhouse gas emissions statistics: 2005-2022

It is likely that electricity GHG emissions will continue to decline as less fossil fuel is consumed in larger power stations to generate electricity. This will complement sustained energy efficiency activity, which could help reduce electricity consumption. As Figure A2.4 illustrates, the reduction in gas and other energy emissions have declined, though by not as much as electricity emissions. It will be challenging to reduce these other sources of energy and the related GHG emissions. The substitution of mains supplied natural gas with hydrogen is promoted as a lower emission alternative, but is not without its challenges. There will also be scope for the private and public sectors to become more involved in producing energy, principally through the use of solar PV panels, which will displace consumption of Grid supplied electricity.

Energy consumption in domestic properties in Pendle Borough Council area has also been changing over the period, with a resultant impact on GHG emissions. The following chart again illustrates the reducing GHG emissions associated with consumption of grid supplied electricity. The GHG emissions arising from gas consumption, principally for domestic space and water heating, has not declined by as much. The scope to reduce future domestic gas consumption will be challenging and require significant resources to make domestic properties suitable for electric heating, especially if provided by heat pump technology.

Figure A2.4: Pendle Borough Council Area Domestic Property GHG Emissions kt CO_2e 2005 - 2022



Source: DESNZ (2024) UK local authority and regional greenhouse gas emissions statistics: 2005-2022

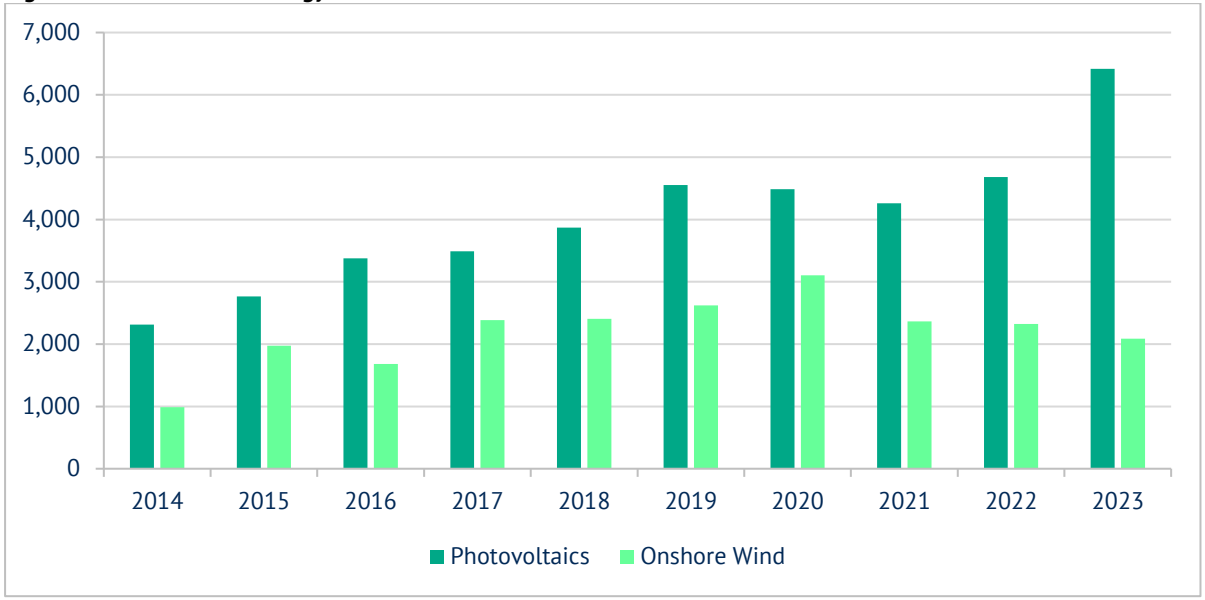
The Pendle Borough Council area has a very high proportion of its housing stock in the lowest category 'A' council tax band. The large amount of old terraced property contributes to high rates of energy inefficient housing. Pendle has around 41,600 dwellings, 88.8% are owner occupied or private rented. A total of 19.6% of households were in fuel poverty in 2022 which was the 2nd highest rate in Lancashire, and the 13th highest rate in England. The main factors that determine this are the energy efficiency status of the property, the cost of energy, and household income.

Awareness of the challenge in addressing fuel poverty and retrofitting domestic properties to make them suitable for lower emission sources is increasingly recognised. Insulating these older buildings to reduce heat loss and make them suitable for lower GHG emission heat pump systems will involve significant policy support across a range of public sector stakeholders. Pendle Borough Council will likely be one of the main stakeholders and partners in domestic insulating and heating system retrofit/replacement programmes. However, it is noted that all retrofit and energy efficiency measures should be done in a way that is sympathetic to original construction materials and approaches, so that the desired improvements in energy efficiency are achieved in a way that does not negatively impact on the fabric of the housing stock.

There will be increasing scope for the generation of renewable energy production in the Pendle Borough Council area. The simplest and least disruptive form of local renewable energy production will involve the installation of roof mounted solar PV. This will help reduce consumption of grid supplied electricity, when the PV array is most productive in the late spring, summer and autumn. The following chart[36] illustrates the amount of renewable electricity produced in the area and the main sources of this renewable energy generation.

[36] https://www.gov.uk/government/statistics/regional-renewable-statistics

Figure A2.5: Renewable Energy Generation MWh in Pendle 2014 - 2023



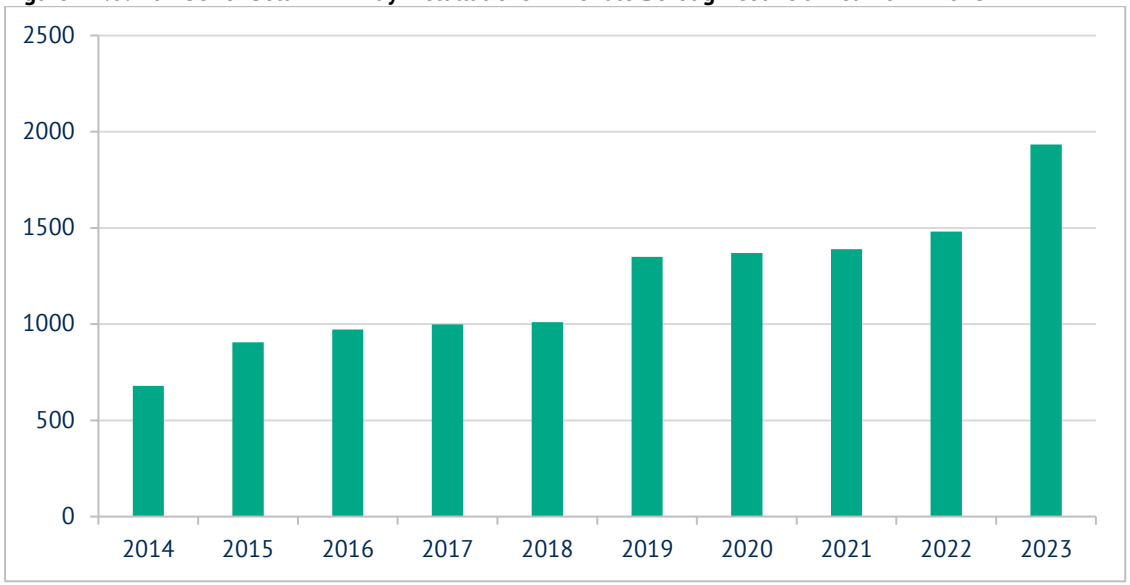
Source: DESNZ (2024) Renewable electricity by local authority, 2014 to 2023

The number of sites producing wind energy has remained relatively static over the period. There were 16 sites in 2014 and 17 in 2023. There is a limited area within the Pendle Borough Council that has suitable average annual wind speeds for wind turbines (see Figure 3.1). In addition, its upland landscape would result in the introduction of highly visible alien structures in the landscape which would also potentially dry out peat deposits, owing to the access tracks required.

There is, however, significantly more scope for the use of solar PV panels to generate energy in the area, based on the growing recognition that roof-mounted solar PV arrays on domestic and commercial properties will help to reduce consumption of increasingly expensive grid supplied electricity. In addition, more stringent rules on energy efficiency n new homes in England is being applied as we go through 2025. This is already leading to significantly more solar PV panels being installed.[37] The following chart illustrates how the number of solar PV array installation has nearly quadrupled over the same period. The integration of solar PV panels and battery storage is an increasingly adopted package that helps reduce consumption of grid supplied electricity. The battery storage allows any surplus PV array output to be stored and used later in the day/evening or the following morning when the PV panels are not at their peak output level.

[37] https://solarenergyuk.org/news/more-than-four-in-ten-new-homes-in-england-built-with-solar-power/

Figure A2.6: Number of Solar PV Array Installations in Pendle Borough Council Area 2014-2023



Renewable electricity by local authority, 2014 to 2023

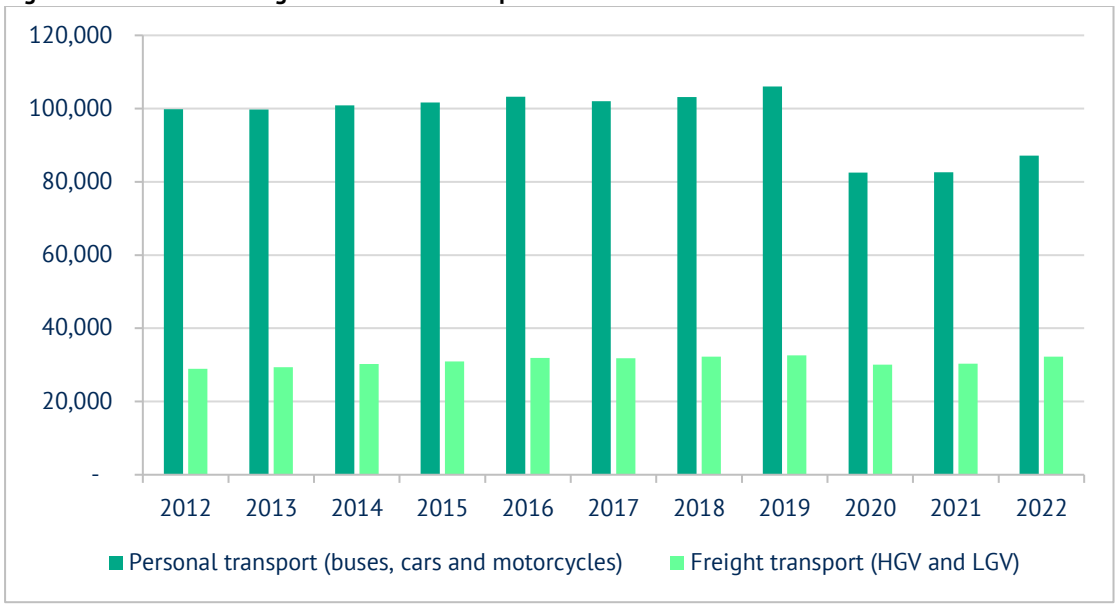
The UK Government recently announced[38] around £80 million in funding to support up to 200 schools, alongside £100 million for nearly 200 NHS sites, to install rooftop solar panels. These could power classrooms and operations, with potential to sell leftover energy back to the grid. The first panels are expected to be in schools and hospitals by the end of summer 2025, saving schools money for the next academic year. Estimates suggest that on average, a typical school could save up to £25,000 per year, whilst the average NHS site could save up to £45,000 per year on their annual energy bill if they had solar panels with complementary technologies installed, such as batteries. This complements funding that neighbouring borough councils have accessed. For example, South Ribble has accessed over £5m of funding to help decarbonise the Council's estate.

The Pendle Borough Council area transport sector consists of emissions from road vehicles and railways. Figure A2.7 illustrates the trends in the area's transport generated GHG emissions over the period 2012-2022. In 2022, domestic transport accounted for around 29% of the Pendle Borough Council area total GHG emissions.

[38] https://www.gov.uk/government/news/great-british-energy-to-cut-bills-for-hospitals-and-schools

The main source of emissions from this sector is the use of petrol and diesel in road vehicles. Transport emissions declined in 2020, when travel was heavily restricted due to the COVID-19 pandemic. Emissions from domestic transport in 2022 remain lower than in 2019, the last pre-pandemic year. However, emissions levels were increasing as we emerged from the impacts of the COVID-19 pandemic. Before 2020 there had been relatively little overall change in the level of greenhouse gas emissions from domestic transport, with emissions slightly increasing over the period. Road vehicles are the most significant source of emissions in this sector, in particular passenger cars, and the changes which have been seen over the period were heavily influenced by this category. Over the period, the amount of GHG emissions arising from HGVs has declined while this reduction has been cancelled out by increasing consumption of fuel in lights good vehicles.

Figure A2.7: Pendle Borough Council Area Transport Emissions kt CO2e 2012 - 2022



Source: DESNZ (2024) UK local authority and regional greenhouse gas emissions statistics: 2005-2022

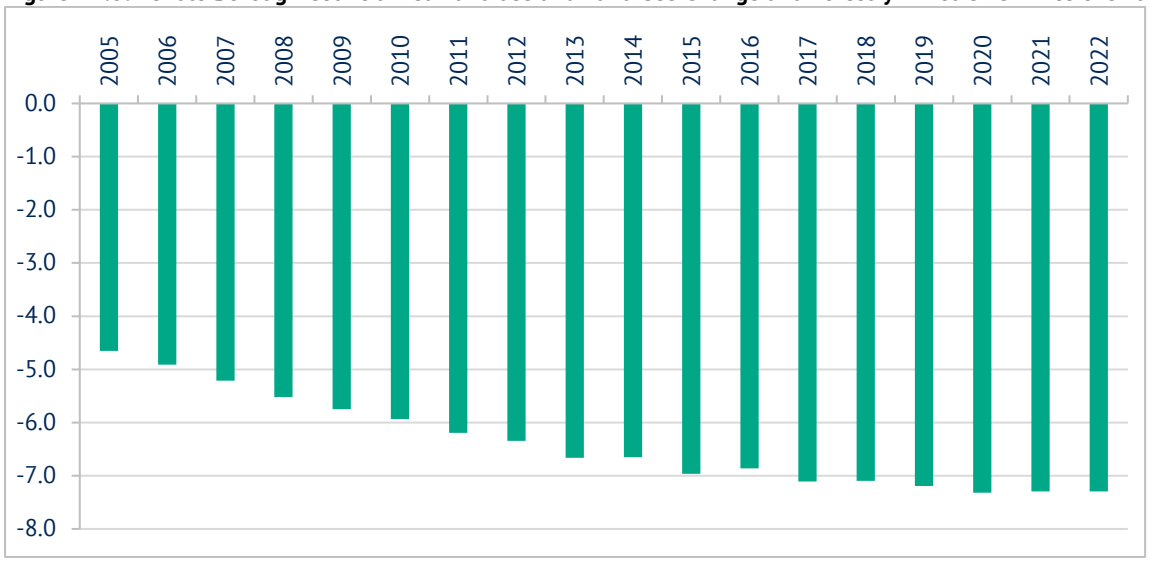
Reducing road transport emissions will be an area of sustained Government policy intervention and support in the coming years. Transport has remained a significant source of GHG emissions and as Figure A2.7 illustrates, was increasing in the area, immediately before the COVID-19 pandemic. The electrification of transport and the adoption of greener vehicle fuels such as Hydrotreated Vegetable Oil will be important interventions to help reduce road transport emissions in the Pendle Borough Council area in the coming years. Again, there are likely to be a range of funding initiatives made available to support this transition.

For Pendle Borough Council to meet its Carbon Neutral and Net Zero targets, will require an element of sequestration or offsetting. One of the easier ways to achieve this sequestration/offsetting is through supporting appropriate carbon sympathetic land use.

The land use and land use change and forestry (LULUCF) sector differs from other sectors in that it contains both sources and sinks of greenhouse gases. The sources, or emissions to the atmosphere, are given as positive values; the sinks, or removals from the atmosphere, are given as negative values. The total sector value is reported as net emissions/removals, i.e., the sum of emissions and removals for each category.

Changes from one land use type to another will result in a change in soil carbon stocks over time. The change in vegetation cover and management will affect the amount of carbon that goes into the soil from biomass decomposition. This is represented by emissions or removals which continue for decades after the change in land use until equilibrium carbon stocks characteristic of the new land use are reached. Whilst LULUCF includes emissions and removals, the sector as a whole for the Pendle Borough Council area, is a net sink of GHG emissions as illustrated in the following figure.

Figure A2.8: Pendle Borough Council Area Land use and Land Use Change and Forestry – Net GHG Emissions kt CO_2e 2005 - 2022



Source: DESNZ (2024) UK local authority and regional greenhouse gas emissions statistics: 2005-2022

There are increasing resources and funding available to support land management that reduces the release of GHG emissions. While increasing tree planting and forestry are well established interventions that will lead to storage of carbon, appropriate management of grassland and importantly, peatland, will help to increase the carbon storage capacity of land in the Pendle Borough Council area. There have been extensive public resources and funding made available to support appropriate land management and this funding is likely to remain available into the future.

Pendle Borough Council emissions

Pendle Borough Council declared a Climate Emergency in July 2019, with an aspiration to be carbon neutral by 2030. Each year, the organisation calculates the carbon emissions generated from its building stock, fleet and staff travel. Results are presented as either Scope 1, 2 or 3. In 2022/23, the data for Pendle Leisure Trust (PLT) was incorporated in Scopes 1 and 2 as Pendle Borough Council generated emissions, rather than being reported in Scope 3. To ensure consistency of reporting methodologies, the data for the last five years was recalculated and is provided in the following table.

Scope 1 refers to gas consumption in Pendle Borough Council owned and managed buildings and fuel emissions from the organisation's fleet. Scope 2 is electricity consumed within Pendle Borough Council owned and managed buildings. Scope 3 captures the indirect emissions of an organisation which incorporates a broad source of indirect emissions. To simplify analysis and reporting, the Council currently includes business-related staff travel. Additional outsourced services provided by Liberata and other external providers are not currently included in Scope 3, however this may change in future, as the provision of services changes, or if reporting requirements become stricter in relation to suppliers.

Table A2.1: Pendle Borough Council sources of GHG emissions by Scope, 2018/19-2022/23 (tonnes CO_2e)

	18/19	19/20	20/21	21/22	22/23
Scope 1					
Gas consumption	1,354	1,337	941	1,233	1,079
Owned transport	614	605	612	594	561
Total Scope 1	**1,968**	**1,942**	**1,553**	**1,827**	**1,640**
Scope 2					
Purchased Electricity	602	537	354	381	350
Total Scope 2	**602**	**537**	**354**	**381**	**350**
Scope 3 (indirect emissions from Pendle Borough Council operations)					
Business Travel	26	25	12	13	28
Total Significant Scope 3	**26**	**25**	**12**	**13**	**28**
Gross emissions – tCO_2e	**2,956**	**2,504**	**1,919**	**2,221**	**2,018**

Consultant calculations based on Pendle Borough Council data

Significant decreases have been achieved during the past five years largely owing to energy infrastructure changes and the decarbonisation of UK electricity generation. Most reductions to date have not been as a direct result of actions implemented by Pendle Borough Council. However, the Council has benefitted from national infrastructural changes which will soon reach saturation and, therefore, no longer continue to support reducing emissions.

Any significant downward trend will not continue without active intervention. The reduction in Pendle Borough Council carbon emissions is likely to plateau if current trends continue to rely on passive, external factors, such as the decarbonisation of the UK Grid.

Reducing Pendle Borough Council building estate GHG emissions

Producing heat (space and water) in the Council's 17 main properties[39] primarily relies on burning natural gas. This contributes significantly to greenhouse gas emissions. The combustion of natural gas releases GHGs which exacerbates climate change, and also emits nitrogen oxides, which can harm to respiratory health.

Traditionally, natural gas has been the preferred choice for heating buildings in the UK owing to its affordability, reliability, and established infrastructure. However, concerns about energy security, as well as the environmental and health impacts of fossil fuel use, are driving a transition towards more sustainable heating options. Decarbonising the National Gas Grid is a complex issue. While hydrogen has been proposed as a low-carbon alternative fuel, its widespread adoption faces several challenges. A large portion of gas pipelines are made from unprotected iron and carbon steel, which can become brittle from hydrogen diffusion. As a result, extensive pipeline replacement would be necessary to accommodate hydrogen, further complicating the transition and significantly increasing the cost of such a roll out.

The Council commissioned a number of building reports which identified options for increasing energy efficiency and also substitution of fossil fuel consumption with lower GHG emissions Grid-supplied electricity. On some buildings there is also scope to install solar PV panels. A summary of the building reports is contained below while individual property tables are contained in Appendix A.3.

- Across the Pendle Borough Council estate, there is a suite of energy efficiency improvements and also scope to substitute gas space and water heating, with electric alternatives.
- The substitution of the gas space and water heating with electric alternatives addresses health and GHG emission concerns, with the electric heating delivering falling emissions in the coming years.
- The use of electricity and heat pumps (air and ground source) will increase energy costs. The "leverage" (Coefficient of Performance – COP) of the heat pump systems is unlikely to be sufficient to address the difference of the electric cost per kWh which is often multiples of the gas cost per kWh.

[39] These properties were the subject of a separate commission contracted by Pendle Borough Council to review the heating and energy of Council-owned properties. The number of buildings included in the review were determined by criteria established through this commission.

- Building fabric improvements such as triple glazing and installing new or additional insulation will help reduce heat loss from the building estate. Delivering these improvements will incur significant costs.
- The installation of LED luminaries will reduce both lighting energy consumption and spend. The LED luminaries should last longer than alternative lighting equipment, helping to reduce replacement costs.
- Maximising the opportunities and savings from these interventions will involve more effective control of systems, heaters, luminaries etc. There are a range of control systems, apps, etc. available to provide this control, but staff need to know how to effectively use this equipment.
- A number of the Council's buildings have the potential for hosting roof mounted solar PV arrays. These will reduce consumption of grid supplied electricity.
- This portfolio of interventions has a range of emissions savings and costs. The cost per TCO_2e saved from these interventions ranges from £600-£700 for improved heating system control (for example at Edge End Pavilion and Fleet Street Depot) to nearly £20,000 for swimming pool building wall insulation (at West Craven Sports Centre) and up to £61,000 for water heating (at Pendle Leisure Centre).

The replacement of gas space and water heating with electric alternatives helps address some of the health and GHG emission concerns. The principal challenge for the Council, however, is that it will increase energy costs. It is therefore imperative that opportunities to improve building fabric which minimise heat loss, for example improved glazing and building insulation, are completed first. There are also opportunities to produce onsite renewable energy and ensuring that modern heating system controls are installed and effectively used by Council and Leisure Trust staff. The installation of solar PV panels, wherever viable, will also help to reduce the annual spend on Grid-supplied electricity in these heating systems.

Reducing Pendle Borough Council vehicle GHG emissions

Pendle Borough Council operates a mixed fleet of 75 vehicles consisting of cars, light commercial vehicles (LCVs or vans), heavy commercial vehicles (HCVs), and refuse collection vehicles (RCVs). In 2023/24, the fleet drove around 383,000 miles, used around 2,520 MWh of energy, and emitted around 664 tonnes of GHG emissions, 388 kg of nitrogen oxide (NOx) emissions, and 4.3 kg of particulate matter (PM). This GHG emissions figure is greater than the Scope 1 "Owned Transport" emissions figure in Table A2.1. The higher figure also includes Well-to-Tank emissions which arise from the supply chain; extraction, refining and distribution of vehicle fuels used in the Council's fleet.

Pendle Borough Council received a detailed fleet review in 2024, completed by the Energy Saving Trust (EST). The review identified that the energy efficiency (mpg) of many of the fleet vehicles is lower than would be expected, meaning there are some opportunities to reduce transport GHG emissions immediately, and prior to any major fleet renewal. For example, improving the driving efficiency of fleet vehicles could typically achieve around 5% fuel savings, although where there have been no previous interventions, this can be as high as 15%.

The lower GHG emission fuel known as Hydrotreated Vegetable Oil has been used as a greener, lower emissions alternative to diesel in some vehicles. However, there is a cost premium per litre for this fuel, so its use has increased the Council's road fuel expenditure.

A significant proportion of the Council's vehicle fleet is up for renewal in 2026. This presents the first opportunity to decarbonise some of the fleet. The EST fleet review identified that battery electric (BE) will be the most suitable alternative in most cases. Battery electric vehicles (BEVs) have high energy efficiency and zero tailpipe emissions and, where suitable to current usage patterns, offer the best option for decarbonisation.

Table A2.2: Operational suitability for Pendle Borough Council fleet to transition to battery electric

Fleet Category	No. of vehicles	No. of vehicles suited to BE in 2024	No. of vehicles requiring additional confirmation	No. of vehicles where 2024 BE availability not yet suitable
Car	9	9	-	-
LCVs up to 3.1t	7	7	-	-
LCVs 3.1-3.5t	16	16	-	-
Utility/Pick-up	3	-	3	-
12t skip loader	1	1	-	-
7.5t gully tanker	1	-	1	-
Sweepers	6	-	1	5
15-18t RCV	7	5	2	-
22t RCV	7	-	-	7

Some vehicles in the fleet are not yet suited to electrification, namely the sweepers and 22t RCVs. However, it is anticipated there will be wider availability by 2026, and certainly by the end of the decade. A small number of vehicles may need to be replaced with diesel models at the 2026 replacement, with their subsequent replacements likely to be electric. However, as these vehicles will be kept for seven years to 2033, the Council should consider this carefully, as this is beyond the carbon neutral target of 2030. The following table contains the estimated costs and relative costs of this transition, based on whole life cost (WLC) modelling. Vehicle numbers only consider those forming part of the fleet as of 31st March 2024.

Table A2.3: Likely cost and emissions savings from electrification

Fleet Category	Average est. cost or saving per BEV	Total annual cost or saving for the fleet	Average est. annual GHG per BEV	Total annual GHG saving for the fleet
Car	460	£4.2k	1.6t	14t
LCVs	(£590)	(£15.4k)	3 t	79 t
12t skip loader			4 t	4 t
Sweepers			19 t	114 t
15-18t RCV	(£8.5k)	(£59.5k)*	24 t	168 t
22t RCV	-		24 t	168 t
Total		(£70k)		547 t

Consultant calculations based on Pendle Borough Council data
**Assuming costs for 15t RCVs are same as the 18t WLC*

To achieve the best outcomes from the transition to EVs, a number of structural actions are required;

- Establishing an 'energy transition team',
- Adaptation of fleet replacement cycles,
- Prepare a BEV focused purchasing policy,
- Allocating sufficient funds, as well as use of whole life costing (WLC) methods to help justify expenditure, and
- Invest in infrastructure prior to electric vehicles arriving.

The EST evaluation of the fleet data and energy consumption shows that most vehicles in this fleet could be replaced by existing BE products that would be at least as operationally effective as diesel models. The financial case varies, so whilst BEVs are always cheaper to run if charged at a Council depot, WLC which include capital and running costs vary from cheaper than diesel to more expensive than diesel, depending on vehicle category and mileage. However, comparisons between electric and hydrotreated vegetable oil (HVO) are usually much more favourable to BEVs owing to the cost premium on HVO.

Most existing Pendle Borough Council diesel vehicles can be replaced by BEVs at a cost saving on a WLC basis. The main exception is the small fleet of hatchback cars, owing to their low utilisation. It proved challenging for the EST to accurately analyse the WLC, as these are specialised vehicles which may not yet be suitable to transition to BE. As a result, they are likely to incur costs, although it has not been possible to accurately determine these, for the forthcoming fleet replacement in 2026.

With a clear path to decarbonisation through electrification, the Council will need to invest in electric vehicle charging infrastructure (EVCI). Overnight availability to charge means that infrastructure only needs to be low impact AC charging; 22 kW for HCVs and RCVs and 7.4 kW or less for vans and cars. A total spare connection size of 370 kVA is needed for the whole fleet as BE to be charged, if it is managed on a smart system. Rapid (DC) charging would significantly increase the demand for power, but the presence of one or several 50 kW DC charge points could add flexibility to operations, for daytime top-up charging, for example.

It is likely Pendle Borough Council will need to upgrade the electrical capacity of its depot in order to meet the demand for BEV charging. This work is undertaken by the Distribution Network Operator (DNO), which pays for assets external to the Council's locations. There is likely to be an additional cost for infrastructure needed within Pendle Borough Council locations as well. Installing charging infrastructure for the fleet is a large project but will outlive the vehicles and infrastructure and capacity upgrades will only be needed once.

Supporting tables and charts

Figure A2.9: Pendle Borough Council area GHG emissions in comparison to neighbouring local authorities 2005-2022, ktCO_2e (2005 = 100)

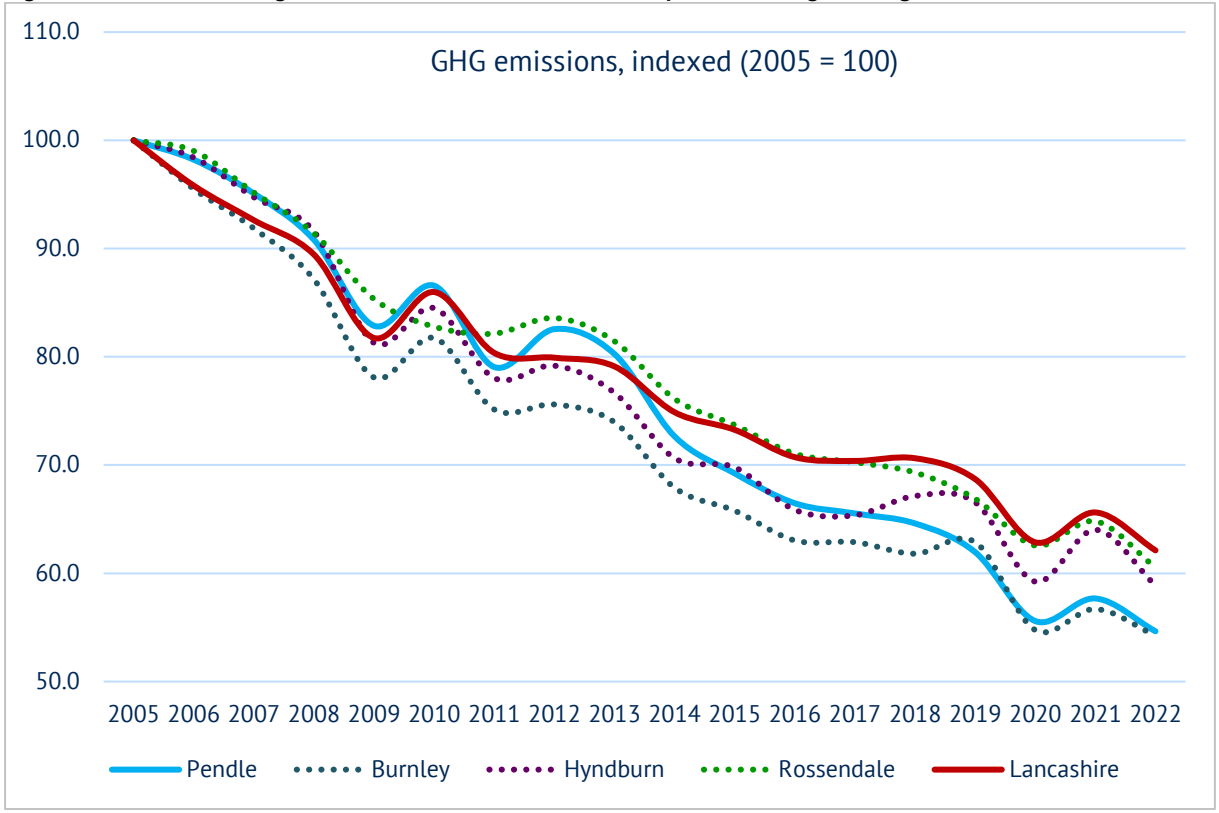


Figure A2.10: Trends in GHG emissions for Pendle Borough Council area 2005-2022, $ktCO_2e$

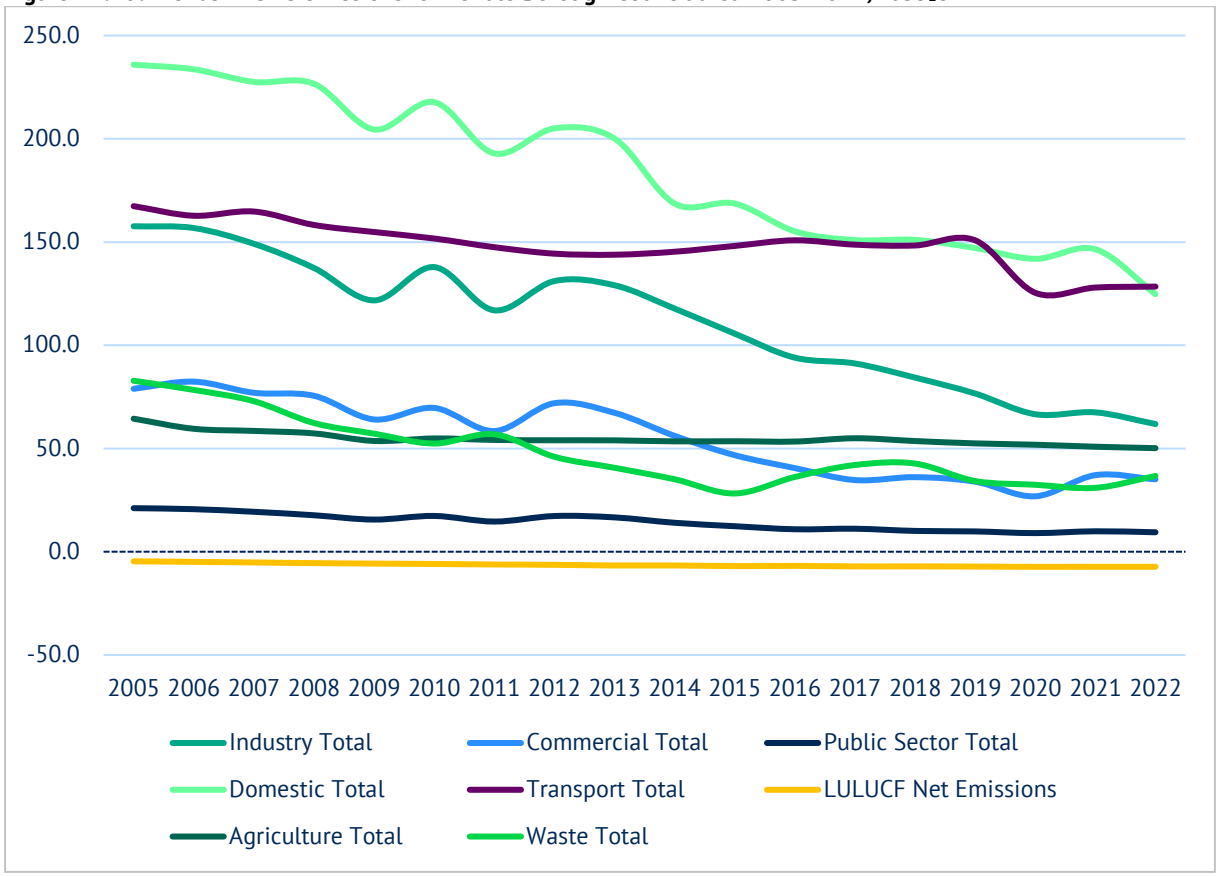
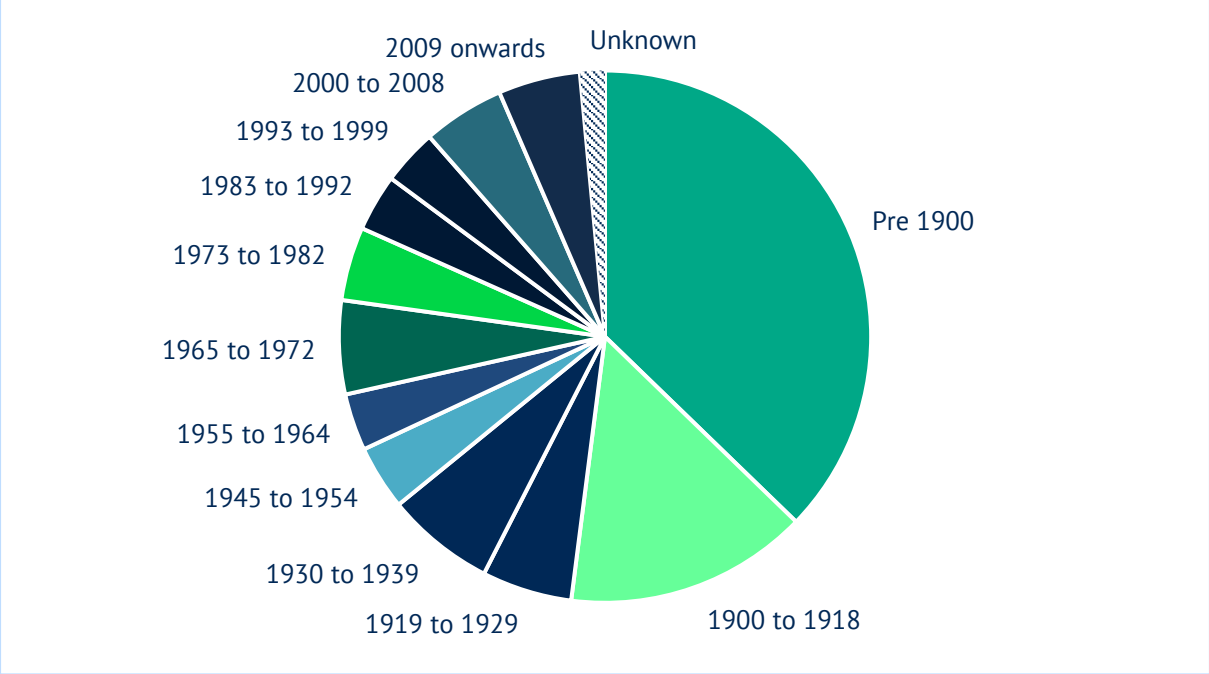


Table A2.4: Energy consumption (electricity and gas) in Pendle, 2023

	Electricity	Gas
Total domestic consumption, GWh	124.7	478.9
Total non-domestic consumption, GWh	172.8	187.2
Total, GWh	297.5	666.1
Median domestic consumption, kWh	3,150.9	10,794.4
Median non-domestic consumption, kWh	6,058.2	151,915.9
Median domestic consumption, England, kWh	3,462.2	9,942.5
Median non-domestic consumption, England, kWh	6,876.5	147,159.5

Source: DESNZ (2024) Subnational electricity and gas consumption statistics, 2005-2023

Figure A2.11: Dwelling stock age, Pendle, 2024



Source: VOA (2024) Number of properties by Council Tax band, property build period and administrative area, 1993 to 2024

A.3. Pendle Borough Council building stock low carbon interventions

1 - 39-41 Scotland Road

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Electric heating, 1/3 of building	-£1,315	1.1			Replacing the gas heating system with a combination of electric heating systems, removes 47,000 kWhs of gas, and introduces 12,900 kWhs of electricity consumption
VRV 2/3rd of building	£421	4.4			
Electric water heating	£782	1.3			
Total	**£-112**	**6.8**	**£115,000**	**16,911**	

2 - Bullholme Pavilion

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP Heat and DHW	-£358	6.1	72,000	11,803	Replace the existing gas space heating boiler and domestic hot water generators with a high-temperature heat pump with a capacity of 25 kW. Also install 6.4kWp PV array and LED retrofit programme and improve controls
Solar PV System 1	£3,339	2.5	29,000	11,600	
LED Lighting	£413	0.3	6,000	20,000	
Upgrade Controls	£550	2	1,200	600	
Total	**£3,944**	**11**	**£108,000**		

3 - Clayton Street Industrial Units

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Electric boiler	-£267	0.3	6,000	20,000	All existing gas-fired equipment decommissioned. Replace existing gas combi boiler with an electric combi boiler, install solar PV .
Solar PV System	£570	0.4	6,000	15,000	
Total	**£303**	**0.7**	**£12,000**		

4 - Edge End Pavilion

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP Heat and DHW	-£358	6.1	72,000	11,803	Replace existing gas space heating boiler and domestic hot water generators with a high-temperature heat pump with a capacity of 25 kW.
Solar PV System	£3,339	2.5	29,000	11,600	
LED Lighting	£413	0.3	6,000	20,000	
Upgrade Controls	£550	2	1,200	600	
Total	**£3,944**	**11**	**£108,200**		

5 - Fleet Street Depot – Mess and Store

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Electric boiler	-£3,368	1.8	26,000	14,444	Two gas boilers replaced with electric powered alternatives and incorporating better heating controls to minimise unnecessary energy consumption.
Electric DHW heating	-£148	0.6	6,000	10,000	
Upgrade Controls with Smart Radiator Valves	£644	2.3	8,000	3,478	
Totals	**-£2,872**	**5**	**£40,000**		

6 - Fleet Street Depot - New Offices

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP Office heating	-£170	4.9	95,000	19,387	Install ASHP system for office building's space heating, using smart controls. Maintenance bay gas unit heaters should be replaced by direct electric units .
Maintenance bay unit heater	-£5,446	2.9	25,000	8,620	
Upgrade Office Controls	£441	1.6	1,200	750	
Total	**-£5,175**	**9**	**£121,200**		

7 - Holt House Pavilion

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP Heat and DHW	-£300	4.4	81,000	18,409	Replace existing gas space/ water heaters with a 30kW high-temp heat pump, and install new smart heating control system and LED lighting as well as a 26 kWp PV array
Solar PV System	£4,072	3	29,000	9,666	
LED Lighting	£576	0.4	7,000	17,500	
Upgrade Controls	£400	1.4	1,200	857	
Total	**£4,748**	**9**	**£118,200**		

8 - Marsden Old Hall, Walton Lane Community Centre

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
GSHP Space Heating	-£992	7.3	273000	37,397	Replace existing gas-space heating boiler with a ground source heat pump, capacity of 55 kW. Generation of hot water by direct electric heating. Installation of smart radiator valves
Electric DHW heating	-£554	0.8	15000	18,750	
Smart radiator valves	£1,201	4.3	8000	1,860	
Total	**-£345**	**£12**	**£296,000**		

9 - Nelson Town Hall

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP Space Heating	-£1,173	34	677,000	19,911	Replace existing gas heating boiler with air source heat pump capacity 215kW. New BMS system to control heating system
New BMS	£4,048	14.6	45,000	3,082	
Total	**£2,875**	**£49**	**£722,000**		

10 - No1 Market Street

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP Space Heating	-£903	26.2	779,000	29,732	Replace existing gas space heating boiler with an air source heat pump capacity 230kW. Install a 95.5 kWp solar PV system
Solar PV System 1	£15,537	11.5	100,000	8,695	
Total	**£14,634**	**38**	**£879,000**		

11 - Pendle Leisure Centre

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Triple glazing	4,120	13.7	137,700	10,051	Remove gas heating, replace with ASHP and make required fabric improvements. Install the PV array to produce onsite electricity and also allow for surplus to be exported. Install LED luminaries for lighting.
External wall insulation	1,253	4.2	191,200	45,523	
ASHP (space)	-25,180	136.2	1,840,000	13,509	
ASHP (water)	-3,020	4.2	258,000	61,428	
130kW PV array (consumed)	43,035	23	160,900	6,995	
130kW array (exported)	862				
LED luminaries	11,432	5.2	37,000	7,115	
Total	**32,502**	**186.5**	**2,624,800**		

12 - Pendle Wavelengths

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Triple glazing	1,223	4.1	140,000	34,146	Remove gas heating, replace with ASHP and make required fabric improvements. Install the PV array to produce onsite electricity and also allow for surplus to be exported. Install LED luminaries for lighting.
Skylights (original building)	1,955	6.5	0	0	
ASHP (space)	-59,350	204.5	1,071,000	5,237	
ASHP (water)	-3,165	6.8	203,000	29,852	
130kW PV array (consumed)	62,496	27.8	152,800	5,496	
130kW array (exported)	102				
LED luminaries	14,972	6.6	36,400	5,515	
Total	**18,233**	**256.3**	**1,603,200**		

13 - 39-41 Scotland Road Pendle YES Hubs

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Local direct electric heating, 1/3rd of building	-£1,315	1.1	12,000	10,909	Replace existing gas boiler with a variable refrigerant volume system for the activity rooms, classrooms, offices and the ground floor public area, and direct electric heating in the circulation and ancillary spaces. Install point of use water heaters.
VRV 2/3rd of building	£421	4.4	88,000	20,000	
Electric water heating	£782	1.3	6,000	4,615	
Total	**-£112**	**£7**	**£106,000**		

14 - Swinden Pavilion

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Local direct electric heating	-£1,313	2.7	15,500	5,740	Replace the existing gas space heating boiler and hot water calorifiers with local direct electric heaters and domestic point of use heaters.
Electric water heating	-£101	0.9	5,500	6,111	
Solar PV System	£4,092	3	30,500	10,166	
Total	**£2,678**	**£7**	**£51,500**		

15 - Victory Park Pavilion

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP Heat and DHW	-£364	6.2	83,000	13,387	Existing gas heating decommissioned, replace with a high-temperature heat pump with a capacity of 30 kW and install a new smart heating control system
Solar PV System 1	£1,930	1.4	19,500	13,928	
Upgrade Controls	£567	2	1,200	600	
Total	**£2,133**	**£10**	**£103,700**		

16 - Walton Lane Community Centre

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
ASHP	-£217	3.2	32,000	10,000	Replace existing gas space heating boiler with a12 kW heat pump. Solar PV system (11.5kWp) offsets just over half the annual electrical consumption.
Solar PV System 1	£1,583	1.2	13,500	11,250	
Total	**£1,366**	**£4**	**£45,500**	**10,340**	

17 - West Craven Sports Centre

Intervention	Annual Saving (£)	Annual Saving T CO_2e	Capital Cost	Cost per TCO_2e saved	Comment
Triple glazing	3,592	11.9	163,000	13,697	Remove gas heating, replace with ASHP and make required fabric improvements; new windows and insulation as well as LED luminaries. Installing PV array to reduce grid electricity consumed and produce some surplus for export.
External wall insulation (swimming pool)	3,166	10.5	207,800	19,790	
ASHP (space and pool)	-40,203	187.8	1,434,000	7,635	
HT ASHP (water)	-3,703	6.1	364,000	59,672	
80.66kW PV array (consumed)	31,905	14.2	104,000	7,323	
80.66kW array (exported)	104				
LED luminaries	38,700	5.2	38,700	7,442	
Total	**33,561**	**235.7**	**2,311,500**		


Insight