West Northamptonshire Climate Change Strategy

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Abbreviations and Definitions

Abbreviations

CO ₂	Carbon dioxide
DESNZ	Department for Energy Security and Net Zero
EPC	Energy Performance Certificate
EPR	Extended Producer Responsibility
ETS	Emissions Trading Scheme
EV	Electric Vehicle
GHGs	Greenhouse gases
KPIs	Key Performance Indicators
LGA	Local Government Association
NO ₂	Nitrogen dioxide
NPH	Northampton Partnership Homes
SAP	Standard Assessment Procedure
UN SDGs	United Nations Sustainable Development Goals
WNC	West Northamptonshire Council

Definitions

Carbon dioxide equivalent (CO ₂ e)	Carbon dioxide equivalent, or CO ₂ e, is a measure used to compare the emissions of the various greenhouse gases based on their global- warming potential. CO ₂ equivalent is used by WNC and other organisations when reporting on carbon footprints
Carbon sink	Anything that absorbs more carbon from the atmosphere than it releases
Circular economy	A circular economy is an economic model that aims to reduce consumption by increasing activities such as sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and extending the life of existing products
Embedded emissions	Embedded emissions are the collective emissions emitted throughout production, transportation and usage of a product

	Within this strategy, emissions refer to all generally used terms for
Emissions	emissions including greenhouse gas emissions, carbon emissions and
	carbon dioxide equivalent (CO2e)
	A low carbon, resource efficient and socially inclusive economy which
Green economy	typically includes sectors such as renewable energy, low carbon
	heating, recycling and reuse of materials
Groop jobs	Jobs that contribute to preserving or restoring the environment and
Green jobs	our planet are referred to as "green jobs"
Greenhouse gases	Greenhouse gases (GHGs) are gases in the Earth's atmosphere that
Circennouse guses	trap heat
Net zero	When the total of greenhouse gas emissions emitted are equal to or
	less than the emissions removed ²⁸
Potrofitting	Installation of energy saving measures such as insulation and
Retronting	double/triple glazing to an existing building
Sequestration	The capturing, removal and/or long-term storage of carbon dioxide
Sequestration	(CO ₂)

West Northamptonshire Climate Change Strategy

Foreword

To be added to final version.

Introduction

The Council's draft Climate Change Strategy has been developed by the Sustainability Team with the support of officers from across West Northamptonshire Council (WNC) and in collaboration with members of the Sustainability Working Group. During the development of this strategy, a public pre-engagement exercise was completed in the autumn of 2024. The feedback received from this exercise has been incorporated into the strategy and will help inform the development of a climate change action plan.

The UK Government set out its response to climate change in the 2008 Climate Change Act¹; the act set out the Government's national 2050 net zero target along with supporting actions. To achieve net zero, greenhouse gas (GHG) emissions need to be reduced to as close to zero as possible and the remaining emissions removed by natural carbon sinks (and novel/industrial technologies), these actions collectively resulting in net zero emissions. The act is supported by several policies published within the 2021 Net Zero Strategy and the 2023 Powering Up Britain: Net Zero Growth Plan. Although the 2050 net zero target is set by central government, it is recognised that local government will play a significant part in delivery of this target.

The Met Office's 2023 <u>State of the UK Climate</u> report shows that recent decades have been warmer, wetter and sunnier than those of the 20th century, with 2023 the UK's second warmest year on record (only 2022 being warmer). The impacts associated with climate change on residents can already be seen, for example, in increased extreme weather events. Further impacts are made more likely by such climatic changes, including increased drought and flood risk, and distribution changes of native species, such as ticks, and of non-native species, such as mosquitos, which may have implications for the spread of disease. In addition, poor local air quality linked to vehicle emissions, also a significant source of GHGs, may have a significant impact on the respiratory health of residents.

In response to climate-related changes and the challenges facing residents, West Northamptonshire Council adopted the United Nations Sustainable Development Goals (UN SDGs) as a framework for delivery of its Sustainability Strategy, published in 2022. Key to the delivery of this particular strategy is to reduce West Northamptonshire's overall environmental impact and address the effects of climate change on residents.

Recognising the need for robust action on climate change, the Council became a signatory of the UK100 and set two net zero targets: to be net zero its own (directly delivered) operations by 2030 and those of residents and businesses of West Northamptonshire (i.e., the area) by 2045; the latter target five years ahead of the national 2050 target represents a significant commitment. Data published by the Government's Department for Energy Security and Net Zero (DESNZ) indicates that, in 2022, total emissions for the West Northamptonshire area was \sim 2.7 million (metric) tonnes² CO₂e – this figure represents a considerable challenge for WNC. This strategy seeks to address this challenge by providing an overarching strategic response to local climate change and delivery of the 2045 net zero target.

Vision

To deliver a sustainable future for all residents of West Northamptonshire (aligning with <u>WNC's</u> <u>Priorities</u>)

- A flourishing green economy provides sustainable jobs, supporting both people and the environment and creating vibrant communities
- Homes and buildings are designed to be energy-efficient, reducing carbon footprints and lowering energy use and costs
- Green transport options, such as electric buses and active travel routes, are accessible, making it easier to travel with a reduced impact on the environment
- Access to nature is a priority where parks and green spaces are available to enjoy, promoting wellbeing and a connection to the natural world
- The circular economy thrives, with resources being reused, recycled, and repurposed, minimising waste and fostering a culture of sustainability
- Develop resilience to the effects of climate change

Our Approach

Tackling climate change is a key priority for WNC and forms part of its vision for a sustainable West Northamptonshire. This vision was outlined in the Sustainability Strategy, published in 2022. The strategy has a framework for delivering the UN SDGs (herein SDGs; see Figure 1) and associated targets. Following adoption of the SDGs, an initial piece of work was undertaken to map the SDGs against the Council's services and six <u>corporate priorities</u>. This exercise helped identify strengths and weaknesses within the approach, and priorities, one of which is the development of a Climate Change Strategy.

The targets associated with SDG 13 "Climate Action", in particular, along with the Council's own net zero targets, form the core aims and objective of the Climate Change Strategy. They are intended to reduce emissions, build resilience to the effects of climate change and deliver the vision of a sustainable future for West Northamptonshire.

Aims:

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters
- Integrate climate-change measures into policies, strategies, and planning
- Improve awareness and education of climate change, including mitigation, adaptation, impact-reduction, and early warnings applicable to residents and business

Objective:

 Achieve net zero emissions of residents and businesses of West Northamptonshire by 2045



Figure 1. The United Nations 17 Sustainable Development Goals with goal 13, Climate Action, enlarged.

A detailed action plan will be developed alongside the Climate Change Strategy, progress will be monitored through existing Key Performance Indicators (KPIs) where possible or through the development of specific KPIs, as required. The action plan will be updated annually, this will include progress on existing actions and the addition of new actions, with an annual report published on the Council's website.

In relation to financial resources to support the Council's Climate Change Strategy, WNC will ensure that priority is given to accessing all external funding available to support the Climate Change Strategy and key projects supporting the delivery of the programme aims and objectives. Further individual project funding in addition to this would require funding approval through the Council's medium-term financial plan process 2025/26 to 2028/29, with individual programme business cases to be submitted for review and approval as part of the budget planning cycle. As part of this process the Council will seek to prioritise those projects that provide a positive financial and climate outcome.

West Northamptonshire Emissions

There are two GHG emissions datasets used in this section; one published by WNC detailing its own operational emissions, and one published by DESNZ regarding local authority emissions. Within the datasets, hence derivative reports, emissions are expressed as a carbon dioxide equivalent (CO_2e) figure, allowing seven GHGs (which contribute to climate change) to be accounted for in a single figure. The measurement of CO_2e is typically presented in tonnes (t CO_2e), kilotonnes (kt CO_2e ; equivalent to one thousand tonnes) or megatonnes (Mt CO_2e ; equivalent to one million tonnes).

In 2023, the Council published its baseline emissions; the baseline year being 2021/22, and, in autumn of the same year, its first annual Sustainability Report, which also presented its emissions for 2022/23. Such Council-focused annual emissions reports will continue to be published, evidencing progress towards its own net zero by 2030 target. Council emissions currently equate to ~1% of the West Northamptonshire's total emissions. Although this percentage represents a relatively small proportion, the Council recognises its responsibility in leading by example with respect to emissions reduction in the area.

DESNZ publish national emissions data annually, two years in arrears. The data is broken down into local authorities (i.e., specific areas) and various sectors and is used by WNC to report on area-wide emissions levels.

In 2022, emissions across West Northamptonshire totalled 2.7 million t CO₂e. The figure below (i.e., Figure 2) shows an annual comparison (from 2020 – the Council's baseline) of area-wide emissions data for West Northamptonshire across different DESNZ-defined sectors. The next step for emissions reduction will be to seek funding for developing an emissions reduction pathway for the area.



Figure 2. West Northamptonshire greenhouse gas emissions for all sectors (broad source categories according to DESNZ) from 2020 (baseline year) to 2022.



Local Authority Spheres of Influence

Local authorities have a crucial role to play in helping to address climate change. For example, the Local Government Association (LGA) estimates that local authorities have direct control over approximately 2% to 5% of local sources of emissions and, through policies and partnerships, have the ability to influence reductions in a further 30% (Figure 3 shows how local authorities can influence emissions reductions)³.



Figure 3. How local authorities can influence emissions reductions. **Source:** <u>LGA Councillor</u> <u>workbook – The local path to net zero</u>

Executive Summary

West Northamptonshire Council recognises the need to take action to reduce local greenhouse gas emissions and adapt to the impacts of climate change. This Strategy sets out the Council's proposed approach to helping address these urgent and complex challenges, and delivering net zero across West Northamptonshire by 2045. Once approved the draft strategy will go out for public consultation with the final draft being considered for adoption by the Council in early 2025.

The strategy aims to put people at the centre of the response to climate change, alongside eight key areas, including, for example, energy, transport, waste and nature. The overall approach can be broken down into four key action areas: mitigation, adaptation, innovation and increased stakeholder engagement. Each key action area has an important function in the delivery of the 2045 target.

Mitigation

Key to delivery of the 2045 target is to significantly reduce GHG emissions across all sectors. This is to be achieved through a combination of improved energy efficiency, a reduction in fossil fuel use, an increase in carbon sequestration and a transition to a greater use of renewable energy. Key aims include: improving public transport and encouraging active travel; promoting sustainable agricultural practices; and supporting the transition to renewable energy use.

Adaptation

Recognising climate change is already having an impact on West Northamptonshire, the strategy recognises the importance of building resilience in infrastructure, communities and ecosystems. Infrastructure upgrades, such as in flood defences, and adaptations to manage drought conditions will need to be considered. Infrastructure upgrades will need to be supported by continued emergency planning preparedness, with the ability to respond to changes in weather patterns.

Innovation

Innovation through research and development in, for example, green technologies can be a key part of the national and local response to climate change. This includes potentially supporting businesses which work on innovative solutions, such as advanced energy storage, smart grid technologies, and sustainable materials. Increased collaboration with academic institutions and international partners, as appropriate, may also be essential to supporting such innovations.

Stakeholder Engagement

Successful delivery of the strategy requires the active participation of stakeholders across West Northamptonshire. This includes WNC officers and members, businesses, education providers and residents. Delivering the strategy will require good communications on the subject of climate change, joint action and sharing regular updates on progress.

Conclusion

The Climate Change Strategy reaffirms West Northamptonshire Council's commitment to meet the local challenges of climate change through coordinated action. By focusing on mitigation, adaptation, innovation and stakeholder engagement we aim to build a resilient community, capable of thriving in the face of climate challenges.

People



Climate change is an environmental and a human issue that affects the daily lives and wellbeing of West Northamptonshire residents. The increasing frequency, and also irregularity, of extreme weather events, such as flooding and heatwaves, poses significant challenges to our community. These events disrupt daily life, damage property and increase health risks – particularly of more vulnerable residents such as the elderly, the young and those with pre-existing health conditions. Recognising these impacts, WNC is committed to placing people at the heart of its Climate Change Strategy. Our approach focuses on reducing emissions, enhancing resilience and promoting sustainability to ensure a healthier, safer and more equitable future for all residents. By addressing the human dimensions of climate change, we aim to build a community that is not only more resilient to climate impacts, but also more inclusive and supportive of all its members.

A pre-engagement exercise was undertaken during the development of the draft strategy with the intention of gathering background data on residents' attitudes and priorities to action on climate change. There were 101 complete responses, and the key findings are summarised in Figure 4. This data has been used to inform the development of the subsequent sections.





Figure 4. Results of the 2024 public pre-engagement exercise.

Challenges

There are climate change related challenges which communities across the UK are striving to overcome, the list below highlights some of the key challenges relevant to West Northamptonshire.

Air Pollution

Poor air quality and the significant impact it can have on public health are documented. The Government considers air pollution one of the largest environmental risks to public health – particularly for people with pre-existing health conditions such as asthma. The Air Quality

Management Areas in West Northamptonshire are currently under review. The main air pollutants identified are nitrogen dioxide (NO₂), a gas, and particulate matter⁴ – very small particles, some about the width of a human hair. Neither pollutant is classified as a GHG; however, they can be released during the combustion of fossil fuels. This means a reduction in fossil fuel use has multiple benefits, such as reducing the release of the GHGs and pollutants directly linked to poor air quality – which can have the co-benefit of improved health of residents.

High Energy Prices

Rising energy prices have increased fuel poverty, affecting 12.9% of households in West Northamptonshire in 2022, up from 11.9% in 2019⁵. Improving home energy efficiency, such as through retrofitting insulation, is key to reducing energy costs and emissions. However, retrofitting can be too expensive for low-income households, enabling access to governmentfunded schemes is the most effective way to reduce this inequality. However, from 2013 to 2023, only 5.6% of homes in West Northamptonshire received energy efficiency upgrades through the Energy Company Obligation scheme, highlighting the significant challenge of improving energy efficiency in the over 187,000 properties across West Northamptonshire. While improving home energy efficiency is crucial, it is equally important to ensure residents can benefit from the transition to renewable energy, offering low-cost, low emissions energy.

Ensuring Residents Have Access to Parks and Open Spaces

Access to green space offers a refuge from the stresses of daily life, encouraging physical activity and mental wellbeing, which are increasingly important as climate change impacts health and living conditions. Green spaces act as natural air filters, reducing pollutants and improving air quality. They also help mitigate the urban heat island effect, where urban areas become significantly warmer than their rural surroundings, by providing cooling through shade and the biological process of plants and trees. Additionally, parks and green spaces promote biodiversity, supporting various plant and animal species that are vital for ecological balance. The challenge is to balance competing land use priorities, between development and the need for accessible open space, to ensure residents have access to the benefits of green spaces.

Making Public Transport and Active Travel Accessible and Travel Options Affordable

Data from the 2021 census shows that 15.9% of households in the area do not have a car or van, whilst 84.1% of households have at least one car or van⁶. This presents significant challenges for public transport and active travel provision. First, delivering accessible and affordable options for those without a vehicle so that they can access wider employment opportunities, and a greater choice of shopping and educational options, important factors in addressing poverty. Second, for those with at least one vehicle, the challenge is to encourage them to reduce their vehicle-based journeys and utilise public transport or active travel options instead.

Access to High Quality Employment

Access to high-quality employment can be a challenge in West Northamptonshire, particularly as the region transitions to a green economy. While the area has relatively high employment levels and a higher average wage than the East Midlands, the rising cost of living has still created a rise in in-work poverty. An expected skills gap in the emerging green jobs market, where there is growing demand for specialist knowledge and skills, is likely to restrict residents access to these jobs. Additionally, uneven access to affordable and reliable public transport can restrict job opportunities for those without their own vehicle (15.9%), helping to embed economic inequality.

Ensuring Residents Have Access to Affordable Fresh Food

Ensuring residents have access to affordable fresh food presents a number of challenges. There can be significant differences in food availability and prices between different areas, this is a national issue that has received regular news coverage. Residents in some areas face limited access to larger supermarkets which offer a wider range of fresh produce at more competitive prices. Instead, they rely on smaller local shops where fresh food options are fewer and generally more expensive. This lack of access not only affects their ability to purchase fresh healthy foods but can increase health inequalities including an increased risk of obesity and type 2 diabetes. Local data shows that by school year 6, 34.3% of children are overweight or obese, while 69.4% of the West Northamptonshire adult population is defined as being overweight or obese⁷. Addressing this challenge requires improving public transport links to larger shopping areas, and supporting the establishment of affordable fresh food outlets within underserved communities. Additionally, evidence shows there are high levels of food waste, which contribute to food insecurity and through disposal, avoidable emissions. Many households lack awareness or resources to manage food waste effectively, leading to significant amounts of edible food being discarded. To tackle this, it is essential to implement comprehensive education campaigns on food waste reduction and to strengthen local food redistribution systems.

Disproportionate Impact of Climate Change

The effects of climate change can be felt by all; however, these changes have a greater impact on those already struggling to meet the cost of fuel, food, housing and transport. National data shows that one in five people are living in poverty⁵, if this strategy is to achieve its aims, then it is vitally important that all residents of West Northamptonshire are able to access the benefits that will come from a transition to a low-emissions green economy. Delivering this outcome is possibly one of the greatest challenges in the delivery of this strategy. Data collected through the pre-engagement survey supports this assumption, showing a lack of engagement with those in the younger age bracket (of 20-49) and those from certain ethnic backgrounds.

Aims

- Improve air quality
- Seek to improve the energy efficiency of homes across West Northamptonshire
- Support the development of accessible, affordable public transport
- Support the development of active travel routes across West Northamptonshire
- Enable inward investment into West Northamptonshire to create additional high-quality, highly paid roles
- Deliver support to enable employers to grow and upskill their workforce, whilst simultaneously upskilling local residents to secure higher skilled and paid roles
- Support decarbonisation within employers to reduce emissions
- Encourage the development of high-quality sustainable employment across West Northamptonshire
- Increase accessibility and encourage the use of green space
- Ensure equitable access to the benefits of action on climate change
- Engage local residents and businesses to increase their knowledge and skills around emissions, including their calculation and reduction
- Support local food production

1. Energy



Modern life and business are energy-intensive; hence, a significant source of emissions. Although data shows an overall decrease in UK energy demand, energy still represents a significant source of UK emissions. Despite renewable energy generation making up an increasing percentage of the UK's energy supply (51.6% in 2023⁸) data shows that electricity use was still responsible for 14% of total UK emissions in 2022, whilst gas and other heating fuels were responsible for a further 20% of UK emissions in 2022⁹.

Alongside the high levels of emissions associated with energy use, the last two years have seen increased energy costs for residents and businesses. The solution to the issues of cost and emissions is increased renewable energy generation alongside continued improvements in energy efficiency. The Government has committed to addressing the issues of cost and emissions by decarbonising the electricity grid by 2030¹⁰ and ensuring the renewable electricity generation that replaces current gas generation is affordable. Delivering these ambitious goals will be the task of the newly established Great British Energy¹¹ (GB Energy). GB Energy will work with local authorities, communities and industry to dramatically increase renewable energy generation across the country. As a first step, the Government has lifted the ban on new onshore wind generation.

The renewable energy generating capacity for West Northamptonshire is reported by the Government. In 2022, installed capacity was recorded as 35 wind turbines and 8,474 photovoltaic (PV) sites, generating 183,640 and 138,272 MWh of electricity, respectively¹².

DESNZ report energy-related emissions across a number of sectors (or "broad source categories"), namely domestic, industry, commercial, public and agriculture. For the purpose of this strategy, and to illustrate the significant impact energy use has on emissions, a combined total for electricity and gas has been estimated from the figures reported for each sector (see Figure 5). In 2022, the combined electricity and gas use for West Northamptonshire was responsible for 847.8 kt CO₂e. At >31% of total area emissions, electricity and gas use represents the second largest source of emissions across West Northamptonshire (transport being the largest).



2022 combined sectors electricity, gas, and electricity and gas emissions



Challenges

Reducing emissions from energy use presents a particularly difficult set of challenges for WNC because the actions that will have the most significant impact are outside the Council's direct control. The solution to these challenges will be a combination of increased renewable energy generation, improved energy efficiency, and reduced usage.

National Grid Decarbonisation

The Government's revised plan to decarbonise electricity supplied by the National Grid with a transition to "Clean Power" is planned for completion in 2030. The transition to clean (and affordable) power is a key requirement of the national large-scale transition to electric heating systems, such as air source heat pumps, and would allow the UK to fully realise potential emissions savings. To date no detailed plans for delivery of this target have been released.

The National Grid Electricity Systems Operator (ESO) has published a report which shows the infrastructure upgrades required for the electricity distribution network to meet the challenge of achieving net zero in 2050¹³. Northamptonshire is mentioned in the report as an area requiring some upgrades; the Northamptonshire Strategic Infrastructure Plan (NSIP) report also noted the potential need for two new substations. This work is outside of WNC's direct control but will potentially have an impact on progress towards the area-wide 2045 net zero target. If upgrades are required to provide increased capacity and enable renewable energy projects to connect to the grid, any delay in this work will delay projects delivering and the emissions savings associated with the transition to renewable energy.

A National Grid commissioned report identified the need for ~400,000 jobs to be filled between now and 2050 in order for the UK to meet its 2050 net zero commitment¹⁴. This national challenge also represents a significant opportunity for West Northamptonshire in the form of new job opportunities. Most Recently GB Energy has estimated that 46,000 jobs will be created across the East Midlands as part of its drive to "clean power". Even though many workers across West Northamptonshire will have the transferable skills required to access these jobs there is still likely to be a significant skills gap. This will need to be addressed through adequate training provision if residents are to have the best chance of taking advantage of this opportunity.

Gas Boilers

The Government aims to phase out gas boilers and reduce installations in domestic properties by 80% by 2035¹⁵. Unlike the previous goal of banning gas boilers entirely, this target will not stop anyone from purchasing a new gas boiler. It will instead rely on increased availability of price competitive electricity from renewable sources to provide an incentive for residents and business to transition from gas heating systems to electric systems. Achieving this target is reliant on price competitive electricity becoming available and there being sufficient skilled electricians to undertake the required electric heating installations.

Locally Delivered Renewable Energy

The Government has indicated that locally delivered renewable energy projects will be a key part of the GB Energy delivery model. However, there are a number of challenges related to this ambition including: local opposition to the siting of PV (or solar power system) or wind turbines, the availability of affordable land for energy projects and sufficient funding being available for development and delivery.

Although onshore wind generation has proven unpopular in some cases, it has the potential to provide significant generating capacity and balance the energy generating capacity of PV, for consistent year-round generation, because of this it is worth consideration. The Government has now lifted the ban on new onshore wind generation and indicated that future applications may be subject to central planning assessment.

Heat Networks

Local heat networks have the potential to provide heating solutions for local business and residents using the unneeded heating generated by local business. Finding sufficient heat sources grouped near potential end users is required before further detailed planning can take place.

Funding

Funding for local area projects continues to be an issue, funding has been secured through the Public Sector Decarbonisation Scheme, however, more will be required to achieve net zero targets.

Reducing Usage

A solution put forward to the emissions from energy use is to encourage residents and businesses to reduce energy demand. Reducing the energy demand for a building therefore reduces creation of those emissions. Reducing energy usage is often linked to the energy efficiency of a building which will be explored further in the buildings section of the strategy.

Increase Efficiency

Improving the energy efficiency of buildings has the potential to make a significant impact on energy use, this will be explored in the buildings section.

Aims

- Ensure residents and business have access to training opportunities allowing them to gain the skills required to access jobs within the renewable energy sector
- Ensure the planning application process is ready to support applications for projects intended to support decarbonisation of the electricity grid
- Actively seek funding for the delivery of renewable energy projects
- Support the reduction of energy consumption by businesses and residents
- Support transition to "Clean Power" through GB Energy
- Explore options for "green" energy grids and heat networks
- Undertake large-scale programme of domestic and commercial energy efficiency
- Seek funding to support energy efficiency measures and renewable energy generation
- Develop a Local Area Energy Plan

2. Buildings



High energy bills are often seen only as a consequence of the current costs of gas, electricity and oil. The role that the energy efficiency of a home or business premise plays in the final bill the tenant or owner receives is often less obvious. Improving the energy efficiency of a building can help to reduce bills, emissions and in the case of domestic properties can help reduce fuel poverty.

The energy efficiency of a building is assessed using the Standard Assessment Procedure (SAP) which gives an energy cost factor for the property, this is graded from 1 to 100 where 1 is the least efficient rating. The SAP rating is used to assign an Energy Efficiency Rating band to domestic properties, from A – G, G being the lowest rating. The same process is followed for commercial properties however the rating is applied per square metre of floor space. These ratings are used for a buildings Energy Performance Certificate (EPC). Regional data shows the

median EPC rating for West Northamptonshire domestic properties is 68¹⁶, or band D, marginally above the UK average.

Improving the energy efficiency of buildings is essential to reducing emissions and achieving net zero in 2045. Energy efficiency improvement work to existing buildings focuses on "retrofitting" measures, referred to as the "fabric first" approach. Although effective, this can be expensive and out of reach, financially, for those on lower incomes. The energy efficiency of the West Northamptonshire housing stock has improved over time; however, since 2014, data shows this progress has slowed. To address this funding issue and accelerate energy efficiency measures, the Government will invest an additional \pounds 6.6 billion over the current Parliament on home energy efficiency, doubling the existing spending plan of \pounds 6 billion¹⁷.

Alongside work to retrofit existing properties, the implementation of national and local policy is needed to ensure the energy efficiency of new homes. Government standards set through the Future Homes Standard and National Planning Policy Framework (NPPF), currently under review (see NPPF Review¹⁸), and locally through the Local Plan, seek to ensure new homes are energy efficient. It is predicted that the implementation of these policies will reduce emissions from new buildings by 75-80% compared to current levels.

Challenges

Reuse of Existing Buildings

In the years leading up to 2045 it is inevitable that some buildings will reach the end of their useful life and that redevelopment will need to take place. Existing buildings have significant levels of embedded emissions within the materials and from the energy used during construction. Demolition of the building and disposal of waste materials will add to this total. Encouraging developers to reuse existing buildings can be a challenge but can help minimise emissions from the redevelopment and can in some cases preserve the character of an area.

Energy Efficiency of Existing Buildings

The age and property type are the two factors most strongly linked to its energy efficiency; data show the majority of the existing UK housing stock to be >60 years old with around one in five properties >100 years old¹⁷.

Given the age of many properties existing insulation is often well below that needed to be effective, resulting in low energy efficiency. Data shows that an estimated 5.1 million suitable properties lack cavity wall insulation (24% of the total number of properties in Great Britain), of the 7.9 million homes with lofts, 31% have <125mm of loft insulation, and of the 7.7 million homes with solid walls, ~90% do not have solid wall insulation¹⁷.

Improving the energy efficiency of existing properties across West Northamptonshire represents a significant challenge, in terms of cost, practical delivery of the measures required and the availability of suitably skilled tradesmen to undertake the work.

Energy Efficient New Buildings

Current building regulations ensure that new properties are more energy efficiency than older ones. Building new, over time increases the average energy efficiency of West Northamptonshire's housing stock. However, this shouldn't be relied on to 'drag up' average energy efficiency ratings, doing so would mean slow progress and leave the energy efficiency of older properties unchanged.

Building regulations, which set the standard for new buildings need to be implemented to ensure minimum standards are met. However, the viability of encouraging developers to go beyond current standards and build highly energy efficient buildings should be explored at the planning stage. This approach has its own challenges, most notably the economic viability of applying standards such as Passivhaus or mandating PV installations to new developments.

Additionally, where new buildings are needed it is important to consider the "whole life emissions" of the building. This includes emissions from construction to decommissioning at the end of the building's life. Where possible these emissions should be minimised by developers, the challenge is again balancing this against the economic viability of the development.

Social Housing Stock

Northampton Partnership Homes (NPH) manage >12,400 homes for WNC, alongside this a significant proportion of former local authority social housing stock across West Northamptonshire is managed by social landlords such as Futures Housing Group and Grand Union Housing Group. Improving the energy efficiency of these properties will require significant investment. Funding to undertake this work is available through the Social Housing Decarbonisation Fund however funding to date has not reflected the scale of the challenge and at the current rate would not be sufficient to retrofit all WNC housing stock by 2045. Given the restricted budgets of all local authorities a change in the level of, or the approach to, central government funding will be required to meet this challenge.

Aims

- Support the reuse of existing buildings where condition and suitability allow
- Where new buildings are needed support high energy efficiency standards
- The WNC Construction and Maintenance Strategy set targets for emissions monitoring of new projects. This offers an opportunity to show leadership in this area and when applied it should be effectively communicated to developers
- Support the improved energy efficiency of existing housing and commercial buildings across West Northamptonshire
- Support access to government energy efficiency funding for eligible residents
- Contribute to the consultation and planning of new energy efficiency funding schemes so that where possible schemes meet the needs of West Northamptonshire
- Improve information on energy efficiency measures to encourage those able to pay to improve their homes to do so

Government Target

All fuel-poor homes should be at least band C by 2030 and an aspiration for as many homes as possible across the country to be at least band C by 2035

3. Transport



According to DESNZ figures, at 26%¹⁹, the transport sector is the largest emissions producing sector in the UK. Additionally, these figures show that, as a local authority area, West Northamptonshire is the second highest emitter nationally of such transport-related emissions.

The recent public consultation undertaken to inform WNC's Air Quality Action Plan indicated that 30% of respondents considered road traffic to be a major contributor to air pollution in the area. In 2022, emissions from the transport sector for West Northamptonshire were 1,312,700 t CO_2e (Figure 6). At 49% of the area's total emissions², transport represents the largest collective source of emissions across West Northamptonshire. The figure includes emissions from freight and passenger transport, for both private and business journeys. The figure also includes emissions produced by vehicle journeys considered as part of "through traffic", including part trips into or out of the area. Although major roads which pass through West Northamptonshire, such as the M1, A5 and A14, make a significant contribution to area emissions, it is national policy which will have the greater impact on these emissions sources.







Challenges

To contribute towards the delivery of a net zero West Northamptonshire in 2045, emissions from transport need to be reduced to the lowest practicable level. There are a number of significant transport-related challenges to achieving this vision, which are listed below.

Cars Are the First Choice

Government 2021 data for the UK shows the proportion of vehicle miles carried out by road transport vehicles and the proportion of GHG emissions from those modes of transport was: Cars, 75% of mileage, 57% of road vehicle emissions; vans, 18% of mileage, 18% of emissions; HGVs, 6% of mileage, 21% of emissions; buses and coaches, 1% of mileage, 3% of emissions¹⁹. These figures clearly show that the most significant improvement could be made by reducing car usage, a particular challenge which requires residents to change buying and travel choices.

Government Policy

The Government has pushed back the introduction of a ban on new internal combustion engine (ICE) powered vehicles to 2035 from an initial target date of 2030²⁰. This decision is expected to delay the transition to EVs. Whilst the Government does not believe this will have a negative impact on the UK 2050 net zero target, it is possible that it will have an impact on WNCs 2045 net zero target.

Infrastructure

To enable and encourage the transition to EVs a fully developed West Northamptonshire wide EV charging infrastructure will be required, WNC is developing a strategy however this will need to be implemented which will require funding.

Alongside EV charging infrastructure, there is a need to increase active travel and cycle routes to enable travel in both urban and surrounding rural areas.

Aims

- Support the development of active travel infrastructure across West Northamptonshire
- Support the provision of accessible public transport across West Northamptonshire
- Develop sufficient electric vehicle charging infrastructure to encourage residents and businesses to transition to electric vehicles
- Monitor emerging vehicle fuel technologies, such as hydrogen, to allow early identification of potential infrastructure demand
- Support delivery of the Local Transport and Local Cycling and Walking Infrastructure Plans

4. Waste



Residents and businesses across West Northamptonshire have a significant part to play in reducing waste and ensuring any remaining waste is correctly disposed of, including maximising the opportunity for recycling. For the purposes of this strategy, we consider the emissions associated with waste to be made up of two elements; those associated with waste collection and those associated with waste disposal.

WNC is responsible for and has direct control over household waste collections including its sorting and disposal, the collection and disposal of waste generated through its own operations and activities, and a small percentage of commercial waste. All other waste collection and disposal activities across West Northamptonshire are delivered by a variety of commercial operators. Although the waste collection activities of WNC are often the most visible, waste related emissions data shows the majority of waste collected and processed across the region comes from these commercial operators. The emissions from waste collections and disposal are divided across the two WNC net zero targets. Emissions generated from waste collection directly controlled by WNC are included within the Council's 2030 target, and waste disposal emissions, for both WNC and commercial operators, are included within the 2045 target.

In 2022, the UK's waste management sector emitted 23.1 Mt CO_2e^9 , approximately 5% of the UK's total emissions. At the regional level, data shows that in 2022 the waste management sector as a whole contributed 136.00 kt CO_2e emissions², equivalent to approximately 5% of total area emissions for West Northamptonshire.

The reduction of the CO_2e emissions generated by the waste management sector forms part of the Governments net zero strategy. In addition to the measures detailed in the strategy, the UK Emissions Trading Scheme²¹ (ETS) will be extended to waste, first in 2026 for the purposes of monitoring and reporting and then in 2028 energy from waste will be fully included within the scheme.

As a local authority WNC has a key part to play in delivering national waste reduction strategies and has published its own Resources and Waste Strategy detailing its actions to reduce household waste and where it has direct control, commercial waste.

Challenges

Government Targets

The UK Government has set out its ambitions for reducing waste and associated emissions in its <u>Waste Management Plan</u> and <u>Resources and Waste Strategy</u>. It has also strengthened other

legislation such as the Extended Producer Responsibility (EPR)²² for packaging. This makes organisations producing packaging waste responsible for associated disposal costs with the aim of increasing recycling and the development of a circular economy. EPR for packaging will require data collection and submission, where necessary payment will be required. EPR for packaging charges will be introduced in 2025 based on 2024 data. Although set by central Government, waste reduction targets are expected to be delivered at the local authority level, which will potentially put pressure on WNC resources and budgets. The EPR for packaging will add to the administrative burden of local businesses and potentially costs whilst they transition to increased recycling and circular management of resources.

The ETS will limit the total amount of CO₂e emissions from the treatment of waste that can be emitted nationally. This will be achieved by setting an overall emissions cap or limit, which will decrease over time. A free emissions allowance will be provided to those responsible for the treatment of waste, any additional allowance required will need to be purchased at auction or on the secondary market. This will potentially make a significant contribution towards the Net Zero target by driving waste reduction efforts. The extension of the ETS to include waste will have potential cost implications for the Council if it is not able to treat residual household waste within the allocated allowance. However, the Council would be able to trade any spare allowance with other participants if it were able to operate below its maximum allowance.

Sphere of Influence

Although WNC is recognised as the primary waste collection service across West Northamptonshire it does not collect, process, and dispose of all commercial waste. The majority of commercial waste collection in the West Northamptonshire area is undertaken by private companies or operators. Engaging these companies in emissions reduction strategies presents a significant communication and engagement challenge.

Waste generated by businesses has a number of CO₂e emissions sources associated with it, this includes production, transport collection for disposal, processing, and final disposal. Communicating and engaging business in waste reduction and disposal strategies represents a significant challenge. Research carried out by Council officers shows that ~90% of businesses are micro, ~8% small, ~2% medium and <1% large. Each business type shows differing levels of engagement with and approaches to sustainability and emissions reductions, with larger businesses seemingly more engaged, perhaps, in part, as some will have to comply with legislated reporting.

Buying habits are ultimately responsible for a significant proportion of waste, and reducing waste requires behavioural changes. Communicating this to residents and business is a significant challenge at both the regional and national level.

WNC

Although the overall impact of fly tipped waste on area emissions is minimal it does transfer costs from business and individuals to WNC. Once tipped on WNC land the Council bears the cost of collection and disposal.

Electric options for Refuse Collection Vehicles (RCV) are currently limited, linked with the working life of these vehicles can mean opportunities to replace diesel powered vehicles is missed as fleet managers wait for technology to meet operational requirements of a waste collection fleet. Initial enquiries by WNC have shown electric RCVs to be up to 100% more expensive than current diesel vehicles. The rural nature of West Northamptonshire and the current lack of charging infrastructure are other issues that would need to be addressed before the introduction of electric RCVs could be considered.

Alternative fuels that could be used for existing ICE diesel vehicles, such as Hydrogenated Vegetable Oil (HVO), are more expensive. Indeed, WNC has explored this particular option and industry quotes showed HVO to be 20% more expensive than the diesel currently used.

Aims

- Support the development of a circular economy
- Engage with commercial waste operators to understand what actions can be taken to reduce residual waste and promote recycling among their customers
- Encourage everyone to reduce waste and maximise recycling, whilst promoting both the potential cost and emissions savings
- Encourage residents to consider all waste they are responsible for producing, this includes waste from building work, car repair work etc.
- Support delivery of the WNC Resources and Waste Strategy

Government Targets

- Reduce residual waste tonnage by 21% by 2028, against 2019 baseline
- Reduce residual waste generated per person by 50% by 2042

5. Nature



Nature plays a fundamental and critical role in the regulation of our climate. For example, healthy functioning ecosystems (underpinned by biodiversity) and natural habitats, such as established forests^{23,24}, can act as important carbon sinks (capturing CO₂ and storing carbon) and help with mitigation, adaptation and resilience to climate change.

Overall, Nature provides the goods (i.e., resources) and services that support the planet and thus human beings and society²⁵. Goods and services provided by terrestrial (land) ecosystems are exemplified in Figure 7, and, as depicted, can support human health and wellbeing, economic growth, jobs and livelihoods, food security, air, water, and soil quality among many other things.



Figure 7. Ecosystem goods and services from terrestrial ecosystems.

Although the natural environment has a vital role in mitigating climate change – with healthy functioning ecosystems and habitats taking up and storing significant proportions of CO₂ emissions, e.g., within soils, sediments, vegetation and fauna – the degradation and destruction of natural ecosystems and habitats can result in the release of carbon previously stored within them²⁴. Ecosystem and habitat restoration, however, can promote recovery of carbon storage capacities, whilst also enhancing biodiversity and supporting climate change adaptation, soil health, water management and society – WNC's Local Nature Recovery and Tree Strategies are exploring opportunities to support this within West Northamptonshire. In addition, biodiversity net gain (BNG) is a newly mandated approach to development that ensures the environment is left in a measurably better state than it was prior to the respective development – a minimum of 10% biodiversity gain being mandated²⁶. As biodiversity underpins healthy functioning ecosystems/habitats, this net gain could have positive implications for the carbon storage capacity of such land.

As per data generated for WNC's Tree Strategy, tree cover in West Northamptonshire is at 9% (the national average being at ~15%) and according to a <u>Natural Capital Investment Plan</u> (NCIP) report (commissioned for the Northamptonshire and Peterborough areas), ~7% of West Northamptonshire is managed primarily for nature, including nationally and locally designated sites, priority habitats and ancient woodlands. The ancient woodlands of the area, for example, provide diverse benefits to residents such as carbon capture and storage; air quality, noise, local climate (e.g., trees can reduce air temperatures) and water flow regulation; timber/wood

fuel production; and community access to nature, as appropriate, with associated health and recreational benefits. The NCIP report also indicates that the biggest threat to nature in West Northamptonshire, and hence the goods and services nature provides to us, is development on land and the projected population growth. Nonetheless, Northamptonshire is currently dominated by arable land and improved grassland, collectively making up >70% of the county.

Challenges

An overarching theme of the challenges around nature is balancing land use priorities. Whilst there is a need for development within West Northamptonshire, there is also a need for nature protection and restoration, in part to help mitigate climate change and climate change impacts – balancing such land needs represents a fundamental challenge which can be approached by achieving strategy aims.

Aims

- Balance land needs, e.g., development versus room for nature/carbon sink enhancement
- Ensure the BNG approach to development is fully enforced and local BNG prioritised, which may deliver climate benefits
- Support, facilitate and enable the delivery of the priorities and measures indicated within the Local Nature Recovery Strategy
- Manage, protect, and expand tree and woodland cover in West Northamptonshire, implementing the recommendations of WNC's Tree Strategy, to help with wider environmental benefits
- Promote environmentally sustainable farming practices²⁷, e.g., regenerative farming routines, by making use of existing people networks
- Increase/ensure access to green space (in line with open space standards indicated in the Local Plan)

6. Economy



Establishing a sustainable, inclusive economy is crucial for WNC to achieve its net zero target. The transition to a green economy presents significant opportunities for economic growth. However, as with all economic growth, investment is required at both local and national levels. The scale of the investment needed has been highlighted by the UK government's Climate Change Committee, which estimates that by 2030, the UK will need to invest approximately £50 billion annually until 2050 to meet the 2050 net zero target. The Local Government Association published a report titled "Local Green Jobs - Accelerating a Sustainable Economic Recovery in West Northamptonshire,"²⁸ which highlights some of the key gains expected as West Northamptonshire transitions to a green economy. The report's findings show that an estimated 5,500 jobs will be required by 2030, increasing to 9,300 by 2050. These jobs will span all sectors of the green economy, including low carbon electricity, insulation, and low carbon heating. Approximately 60% of these jobs will be needed within the low carbon electricity and heating sector to support increased renewable energy generation and the transition to low carbon heating solutions, such as air source heat pumps. Key to this transition is engaging and empowering employers, highlighting businesses that are implementing changes, and supporting those that are struggling or resistant to participating in the green economy transition. Through collaborative efforts and continuous improvement, West Northamptonshire can build a resilient and sustainable economy that benefits all residents.

Challenges

By addressing the outlined challenges and pursuing the aims of this strategy the region can stimulate economic growth, create green jobs, and promote sustainable business practices.

Funding

Significant financial resources are required to support the transition to a green economy. However, the application process is often competitive and favours those with experience of funding applications. Ensuring businesses across West Northamptonshire have both the skills and opportunity to apply for and secure funding is a particular challenge.

The government has designated the Oxford-Cambridge Pan-Regional Partnership²⁹, of which West Northamptonshire is a part, as a key economic priority - this may provide additional opportunities for funding.

Skills Gap

As mentioned, there will be a need for a workforce skilled in green technologies and sustainable practices, particularly the electricity and heating sectors. In order for residents to take advantage of these opportunities there needs to be sufficient training and apprenticeships available to meet the future needs within the workforce. Northampton College has recently launched a Green Skills Centre which will provide training and start to meet this challenge.

Consumer Behaviour

Encouraging consumers to support sustainable businesses and products is essential for driving demand. The challenge is to increase consumer understanding of new technologies and ensure there are sufficient high-quality contractors to meet expected demand.

Decarbonisation of Processes

Many businesses understand the need to reduce their carbon footprint and adopt cleaner technologies and practices. However, many are yet to measure their emissions and will require

support and advice particularly during the early stages of the process. Providing this support requires dedicated resources for which funding is limited.

Aims

- Actively engage with West Northamptonshire businesses and landowners on the subject of net zero and the opportunities the transition offers
- Develop and maintain strong working partnerships with anchor institutions, such as the University of Northampton, to further the development of the green economy through collaborative working
- Develop an Economic Strategy for West Northamptonshire which seeks to take advantage of the opportunities that the transition to a green economy offers
- Seek to ensure residents across West Northamptonshire have the skills and knowledge to access green jobs as the opportunity arises
- Demonstrate leadership and service excellence, highlighting the benefits of transitioning to net zero activities to help build confidence and inspire others to take action
- Utilise government funding to stimulate the green economy through projects such as Towards a Net Zero West Northants (<u>TANZ West Northants</u>) and Net Zero West Northants (<u>Net Zero West Northants</u>)
- Ensure the need to grow the green economy is picked up by all services within the Council when implementing strategies and emissions reduction work

7. Adaptation



As climate change continues to impact the environment and society, it is crucial for West Northamptonshire to develop strategies that enhance resilience and adaptive capacity. Adaptation involves making changes to the natural or built environment in response to current and expected effects of climate change. Although it is difficult to accurately forecast the impacts of climate on West Northamptonshire, the UK Climate Projections programme³⁰ (UKCP18) provides projected impacts for the East Midlands. The projections show that climate change will have an increasing impact on residents and council services, including our buildings, open spaces, and increased emergency planning needs. These projections have been used to inform the challenges and aims below.

Adaptation is a critical component of the West Northamptonshire Climate Change Strategy. The Council has an important role to play in managing the challenges posed by climate change and implementing robust adaptation measures. By taking robust action it is possible to enhance resilience, protect the natural and built environments, and safeguard the health and well-being of its residents. Through collaborative efforts and continuous improvement WNC can effectively navigate the impacts of climate change and build a sustainable future.

Challenges

Increased Frequency and Intensity of Rainfall

The region is experiencing more frequent and severe weather events, such as heatwaves and heavy rainfall. Flooding caused by increased rainfall poses a risk to business and homes, residents health, and the economy.

Rising Temperatures

Higher average temperatures can lead to heat stress, particularly affecting the vulnerable such as the elderly and those with pre-existing health conditions. In July 2022, Pitsford Weather Centre recorded an air temperature of 40.2°C.

Water Management

Changes in rainfall patterns and increased evaporation caused by higher temperatures can affect water supply, impacting agriculture, industry, domestic use and, in the most severe case, lead to drought conditions.

Biodiversity Loss

Climate change can alter habitats and ecosystems, threatening local wildlife and plant species. These changes also provide an opportunity for non-native species to establish and in some case dominate habitats.

Health Impacts

Climate change can exacerbate health issues, including respiratory problems due to poor air quality combined with higher temperatures and the spread of insect-borne diseases.

Aims

- Explore and seek to implement measures to protect communities and infrastructure from the impacts of extreme weather events through effective emergency planning
- Ensure that climate adaptation is a key consideration in all local planning and development processes
- Cooperate in the development of strategies to manage water resources effectively, ensuring sustainable supply and quality
- Promote and enable conservation and restoration projects to create and enhance nature and ecosystem services
- Support efforts to strengthen health and social care systems enabling them to better respond to climate-related health risks

8. Governance



Following declaration of the two net zero targets, WNC established a governance structure to ensure oversight of the work to deliver these ambitions. Some elements of the governance structure were already in place such as the Transformation Board and internal audit process. Others, including the Sustainability Working Group and Net Zero Implementation Group were established in response to the Council's sustainability and associated net zero ambitions.

Cross-party Sustainability Working Group

The working group was established in 2021 with the intention of driving forward the Council's sustainability agenda, which includes both net zero targets. The group is chaired by the Portfolio holder for Environment, Recycling and Waste and is comprised of six members, two from each of the significant political parties. The members of the working group are supported by the Assistant Chief Executive and members of the Sustainability Team. The group meets monthly to review progress and to consider ways to advance both net zero and the sustainability agenda.

Net Zero Implementation Group

The group is made up of senior managers and assistant directors who represent all services across the Council. The group meets quarterly and is intended to ensure delivery of the Council's net zero targets by ensuring cross service cooperation.

Transformation Executive Leadership Team

The purpose of Transformation Executive Leadership Team is to develop, coordinate and manage transformation activity across the Council to ensure service improvements and savings are delivered in line with the corporate priorities and financial constraints. The board provides strategic direction and leadership and alignment with the Council's Vision and Values, including achieving net zero.

Internal Audit Process

The work to deliver net zero has been subject to scrutiny through the internal audit process. The Sustainability Manager with colleagues from audit have undertaken a review of work to date and developed a series of recommendations intended to ensure delivery of the Council's net zero targets.

Investors in the Environment Accreditation

With the launch of the Sustainability Strategy the Council considered options for external environmental accreditation and opted to pursue accreditation to the Investors in the Environment programme. This has provided external scrutiny of the Council's sustainability work including work to reduce energy consumption, waste, and water use, all of which have a direct impact on the Council's emissions.

Peer Review

The Council has undertaken a peer review process as part of the report approval process for the emissions baseline work and subsequent emissions reports. This process was initially undertaken by NPH and Climate Action West Northamptonshire – a local climate pressure group.

Aims

- Engage with the governance process to ensure timely and efficient delivery of the Council's net zero targets
- Seek to identify opportunities for West Northamptonshire residents to take part in the governance process and help steer the net zero response

9. Conclusion

The West Northamptonshire Climate Change Strategy seeks to reduce locally generated emissions and develop resilience to the impacts of climate change. By identifying key challenges across the areas of people, energy, buildings, transport, waste, nature, economy and adaptation, the strategy will enable the development of targeted action plans to deliver the aims of the strategy.

Vision for the Future

The strategy envisions West Northamptonshire as a leader in sustainability, where the green economy flourishes, homes and buildings are energy-efficient, green transport is accessible to all, and natural environments thrive. By working collaboratively with residents, business, and other stakeholders, the Council aims to achieve net zero emissions by 2045 for the area.

Commitment to Action

The success of this strategy relies on continuous monitoring, evaluation, and adaptation. The Council is committed to regularly reviewing progress, engaging with stakeholders, and making necessary adjustments to ensure the effective implementation of the strategy. By fostering a culture of sustainability and resilience, West Northamptonshire can navigate the challenges of climate change and build a prosperous, sustainable future for generations to come.

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