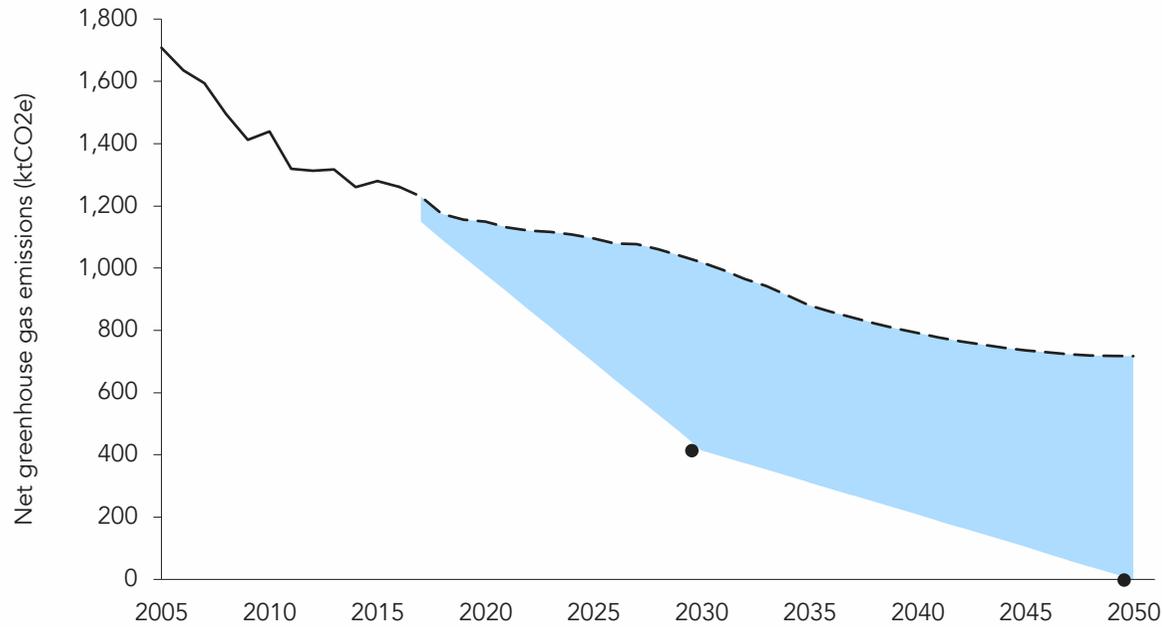


North West Leicestershire District Council

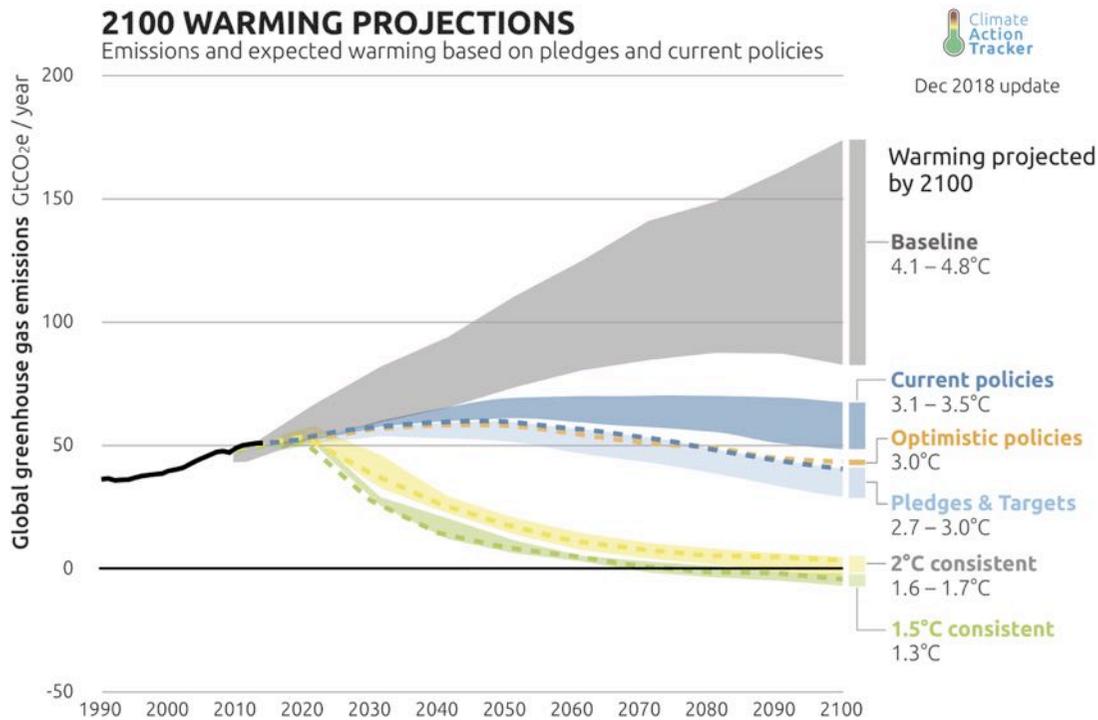


Zero Carbon Roadmap | Executive summary



September 2020

Why we must act



The science is clear: our climate is changing and urgent efforts are required to accelerate reductions in greenhouse gas emissions.

In June 2019, the UK committed to net zero carbon emissions by 2050 and North West Leicestershire District Council has declared a climate emergency.

Society has become more active about it and there are important voices calling for immediate action.

A clear national consensus

“Reaching net zero carbon emissions by 2050 is achievable. However, this requires **immediate action** across all key technologies and policy areas.”

National Grid

(Future Energy Scenarios, July 2019)

“Delivery of greenhouse gas reductions must progress with far **greater urgency.**”

Committee on Climate Change

(Net Zero Report, May 2019)

“It is still not too late to act. It will take a far-reaching vision, **it will take courage**, it will take fierce, fierce determination to act now, to lay the foundations where we may not know all the details about how to shape the ceiling. In other words, it will take cathedral thinking.”

Greta Thunberg



“If we don't take action, the collapse of our civilisations and the extinction of much of the natural world is on the horizon.”

David Attenborough



Greenhouse gases, air pollution and fuel poverty

Greenhouse gases emitted in NWL are generally bulk products of the combustion of fossil fuels. They are produced on a massive scale. It is not practical to separate, remove or store these gases therefore our primary means to reduce them is to burn less fuel. Historically, this has been achieved through making vehicles, buildings and electricity generators more efficient. Efficiency alone cannot deliver zero carbon.

Zero emission technologies such as wind turbines, solar panels, heat pumps and electric cars can generate electricity, heat and provide transportation without any need for fossil fuels. They offer a plausible route to achieve net zero emissions of greenhouse gases.

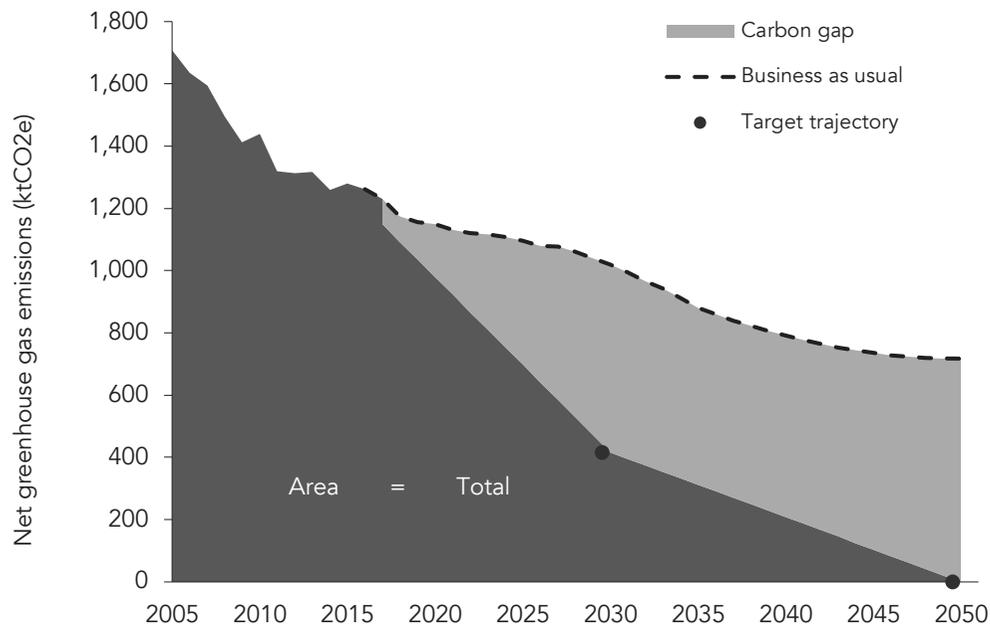
Air pollution is often also caused by the combustion of fossil fuels, however it is usually due to very small quantities of pollutants that are produced as by-products. These can often be filtered to some extent, such as through the use of catalytic converters in vehicles.

Fuel poverty is caused by excessive need for energy and/or excessive cost of energy, relative to income. This is often due to people on lower incomes living in inefficient housing, driving inefficient vehicles and/or being charged higher rates for energy.

This report focuses solely on the measures required to achieve net zero greenhouse gas emissions in North West Leicestershire. It is important to understand that many, but not all, of these measures will also help to reduce air pollution and fuel poverty.

North West Leicestershire: Business as Usual vs Zero Carbon 2050

Greenhouse gas emissions for North West Leicestershire showing the 'carbon gap' between business as usual and net zero carbon.



Many indirect emissions that occur during the extraction, processing, manufacture and transport of products and services outside North West Leicestershire, are not considered in this report. These can only be reduced through reducing consumption, or international decarbonisation of the supply chain for these products.

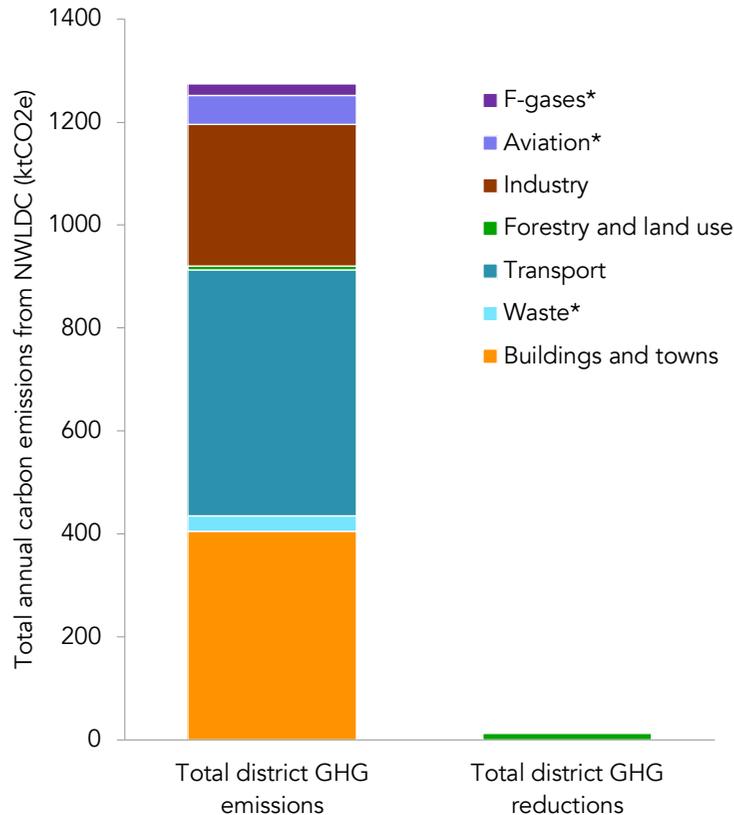
Emissions from North West Leicestershire have fallen significantly due to the replacement of coal and gas fired-electricity generation with wind turbines and solar panels across the UK.

Buildings and transport now need to see major reductions, together with an increase in forested areas to achieve net zero emissions.

There is a significant 'carbon gap' between the current trajectory and net zero. Changes to policy and markets will be necessary to eliminate this. The sooner emissions are reduced, the greater the reduction in total emissions.

North West Leicestershire: Current greenhouse gas emissions

Total greenhouse gas emissions from North West Leicestershire in 2016 by sector

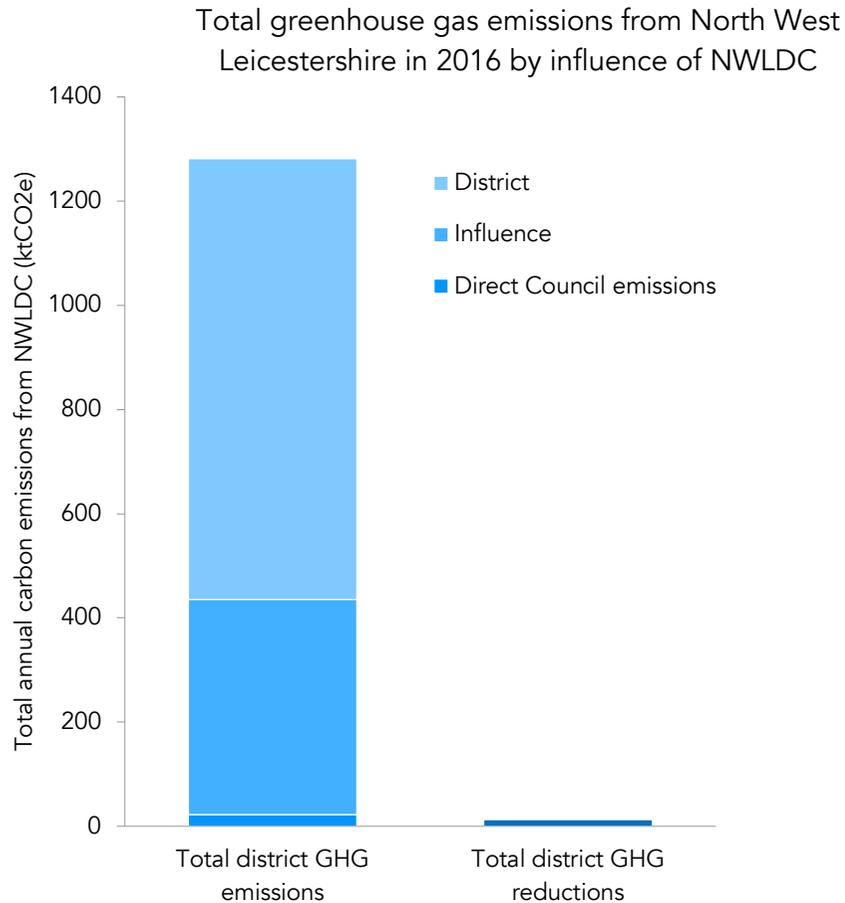


Emissions are dominated by transport, buildings and industrial installations.

- 86% of **transport emissions** are from road travel (about a third of this is motorway traffic).
- 69% of **building emissions** are from non-domestic buildings.
- 57% of **building emissions** are from heating energy.
- The net reductions from forestry and land use in the region absorbing carbon is relatively low.

* Emissions calculated from share of UK emissions based on population.

NWL District Council: Current greenhouse gas emissions and influence



Direct emissions from NWLDC are less than **1.7%** of total emissions from the district (Council buildings and homes, vehicle fleet).

The Council can directly influence a further **32%** of emissions.

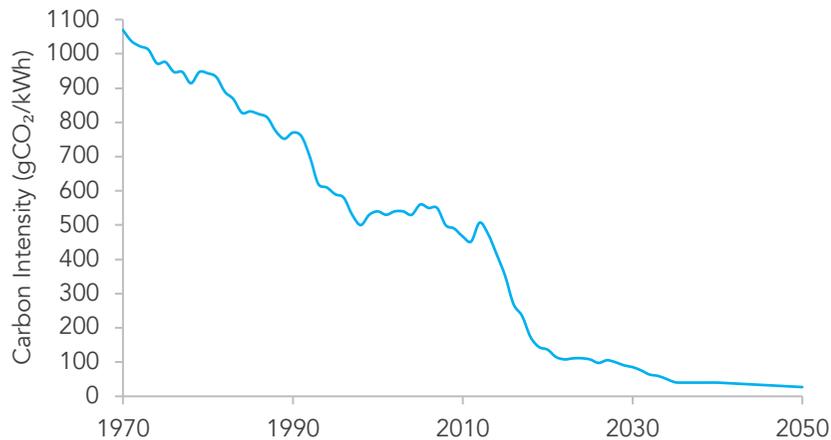
The main opportunities for direct influence are:

- Planning for new buildings
- Planning control for new industrial installations and site emissions
- Electric transport infrastructure
- Waste reduction and diversion from landfill

Decarbonisation of electricity: A success story

UK greenhouse gas emissions from electricity generation have dropped massively and will continue to fall. NWL has a responsibility to do its part.

Average carbon intensity associated with generating each unit, or kWh, of electricity in the UK since 1970.



North West Leicestershire is currently performing very well in terms of solar PV generation. Solar generation is equal to 14% of the district's electricity consumption. The national average is just 4%.



These efforts need to continue. To reach net zero:

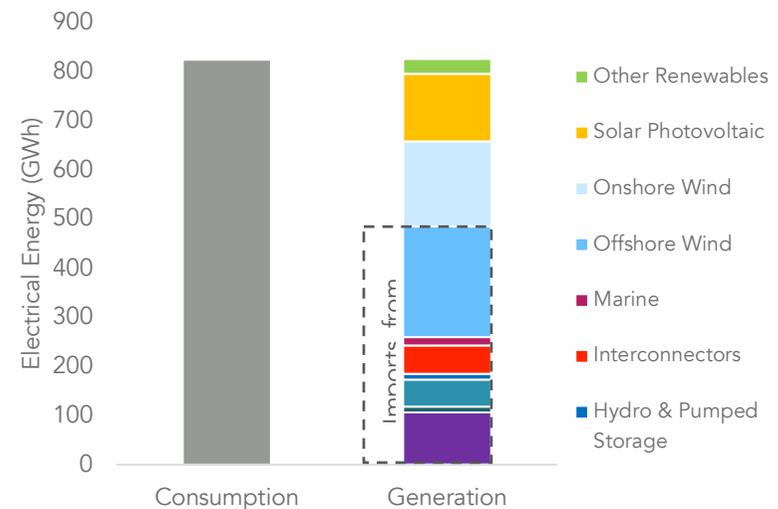


Solar PV capacity needs to increase from 89MW to 140MW.

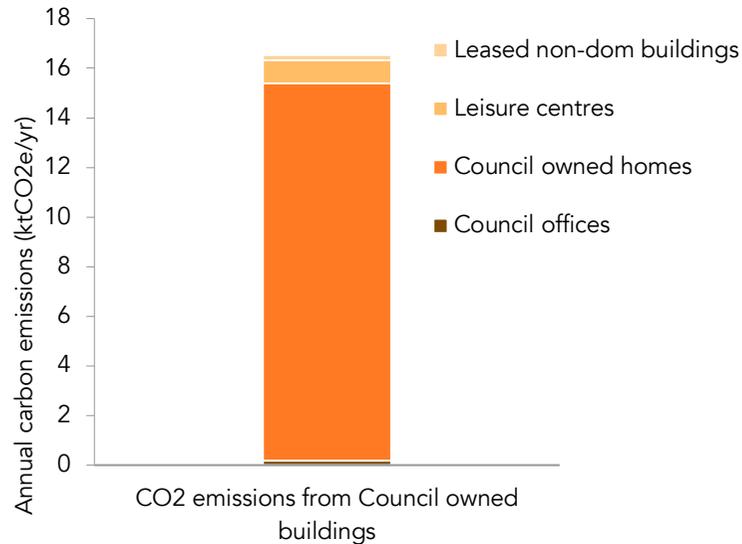


Onshore wind capacity needs to increase from 3MW to 75MW, equivalent to 25 new turbines.

NWL's electricity supply in a net zero carbon scenario. Much of the district's electricity is still sourced from other parts of the UK.



Making Council buildings more energy efficient



The Council's offices have an 'E' energy rating (DEC) and emit 180 tonnes of carbon a year. A similar refurbished building with heat pumps and solar panels would be able to **reduce this by approximately 80%**.

Recommendations for domestic buildings

- Integrate measures towards full retrofit or demolition and rebuild with maintenance and improvement schedules over a five-year period.
- Build new Council homes to the Passivhaus or an equivalent 'best practice' energy performance standard.

Recommendations for non-domestic buildings

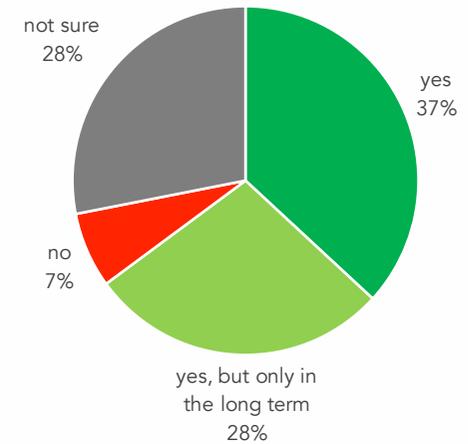
- Develop a retrofit fit plan to align the new leisure centre with the Council's zero carbon aims.
- Survey and prepare a full retrofit plan for the Council offices to deliver a zero carbon refurbishment over 10-year period.
- Prepare a process for assessing and retrofitting Council owned assets that reach end of lease.

Decarbonisation of heat: the new priority

Fossil fuels cannot be used for heating buildings if the UK or NWL are to achieve net zero carbon targets.

Installation of gas boilers in North West Leicestershire should cease from 2020. Low carbon alternatives such as heat pumps should be installed in new and existing buildings.

Do you expect heat pumps to become the main solution for heating in the future?



Source: *Low Carbon Heat: heat pumps in London, a study for the Greater London Authority, Etude*



Decarbonisation of transport: Electrification



Greenhouse gas emissions from the Council’s vehicle fleet, including refuse and recycling vehicles could become **close to net zero** through phased replacement with **an electric fleet**. This will deliver immediate emission reductions, with emissions continuing to fall as the UK’s electricity supply decarbonises.



- Pool cars should be changed at the next replacement cycle
- Housing/ground maintenance vehicles should also change as soon as possible
- Waste trucks should change once viable electric options are available.

The Council could play a significant role in enabling electrification of the district as a whole by developing a strategy to roll out charging points for all users of electric vehicles.

Waste: Towards a circular economy

In 2017 NWLDC achieved a recycling rate of 45.7%.

Waste will increasingly need to be considered as a high-value resource, where waste volumes are diminished and high re-use and recycling rates are the norm. Recycling should result in useful non-polluting inputs or re-purposed high-quality materials.

The Council have introduced the Recycle more campaign in 2019. This sets a target recycling rate of 50% by 2022 and introduces a number of initiatives to support this aim.



Beyond 2025 the district will need to focus on moving beyond recycling to reduce total volumes through zero waste supply chains and encouraging development of a circular economy.

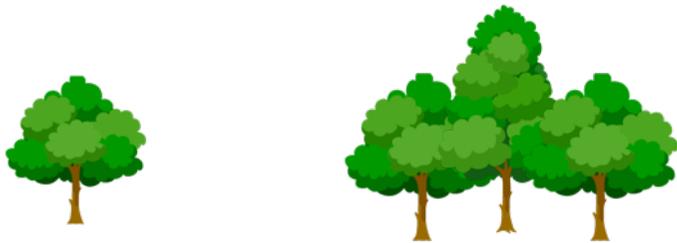
Proposed new targets

2020	Permanent food waste recycling across the district.
2022	50% recycling rate
2023	Introduce food waste recycling to businesses
2025	70% recycling rate
2025	20% reduction in food waste
2025	Zero organic waste to landfill
2050	Zero waste

Forestry, land-use and agriculture

Forestry, land-use and agriculture accounts for 9% of greenhouse gas emissions in NWL. The actions summarised below have multiple cross-sector benefits, including public health.

Plant more trees & restore land



Aim to triple the current 4,481 hectares of woodland. Restore heathland, peatland, grassland and wetlands.

Improve agricultural processes

Engage with farmers to better understand how NWLDC can support them to implement better agricultural practices.

Dietary change: more plants, less meat

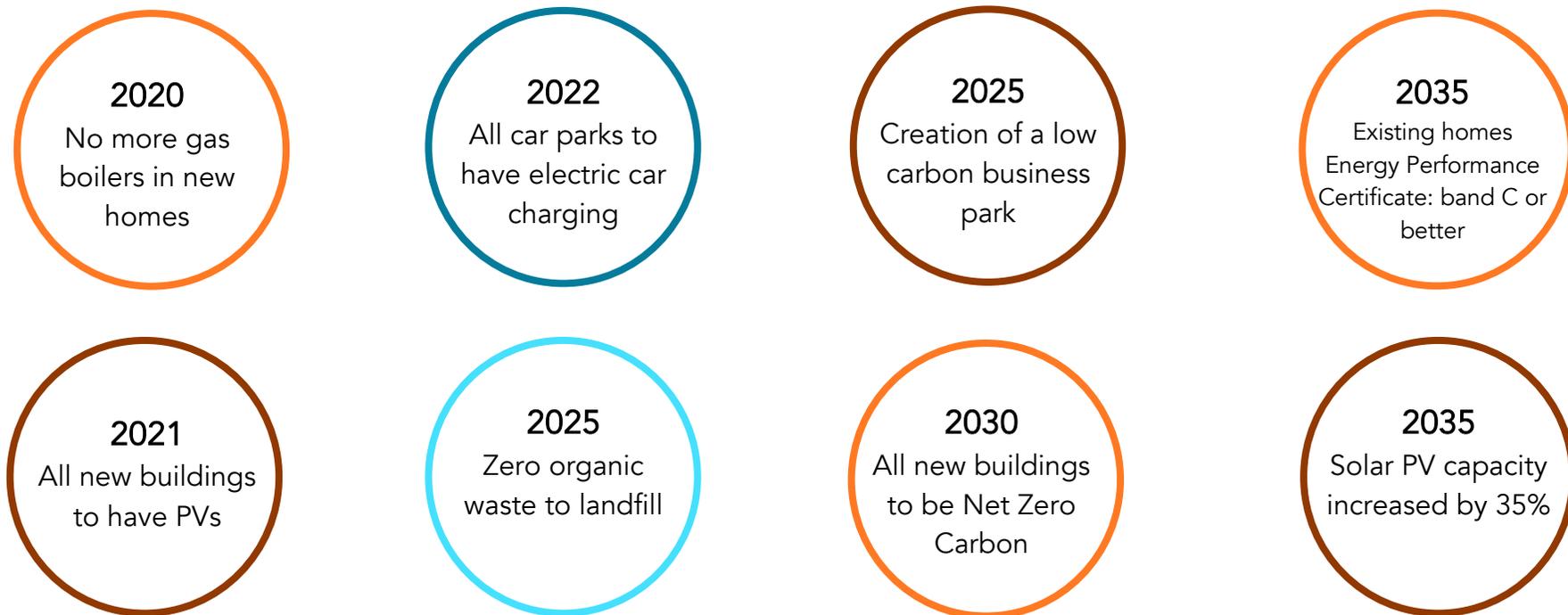


Engage with the public and businesses to increase consumption of plants and reduce consumption of meat and dairy.

Incorporate this change within the Council.

Proposed interim targets on the road to Net Zero Carbon

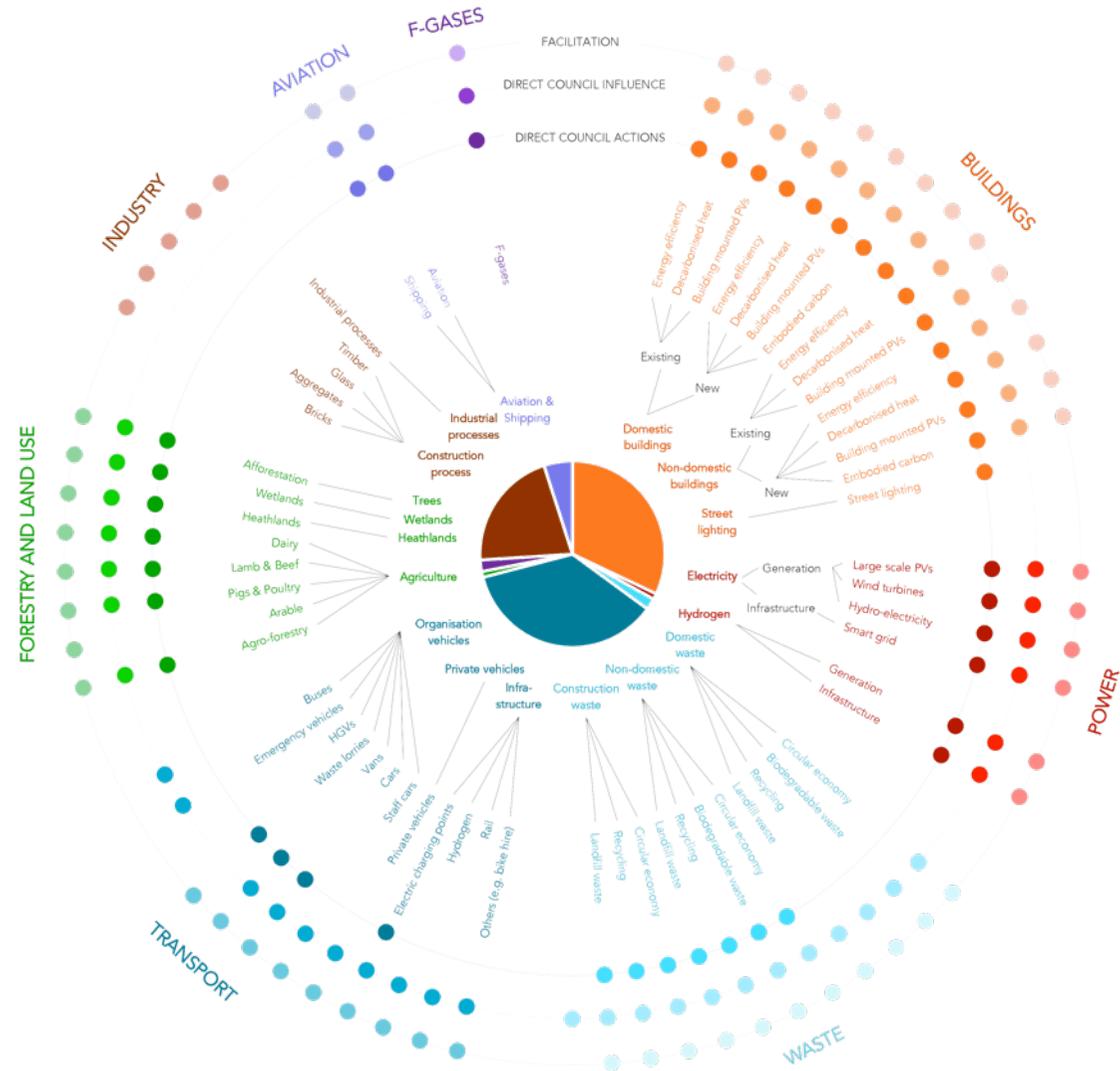
In order to achieve the Net Zero carbon aim, a number of interim targets should be adopted.



Medium and long-term actions

A comprehensive range of actions is required in order to achieve Net Zero Carbon.

We have broken them down by action areas and prepared a list of actions that the District Council can review, adjust and make their own.



Two Action Plans

We have also identified a number of decisive actions for the next three years which would put North West Leicestershire District Council on the right track to achieve:

- a Net Zero Council by 2030.
- a Net Zero District by 2050.

If implemented, the Council would lead by example.

Here are some examples of actions.

Power

3y	<p>Renewable energy for Council buildings</p> <p>Install PVs on the Council’s non-domestic buildings, starting with the largest roof areas: the Council’s Offices and the Ashby Leisure Centre</p>
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Buildings and towns

3y	<p>Start retrofitting existing housing owned by the Council</p> <p>Building energy efficiency (insulation, improved airtightness and better windows), better ventilation (MVHR wherever possible), retrofit heat pumps and install PVs</p> <p><i>Target high emission homes first (e.g. those using coal or oil).</i></p> <p><i>Undertake a pilot project/exemplar to establish costs and programme requirements for wider roll out.</i></p>
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Transport

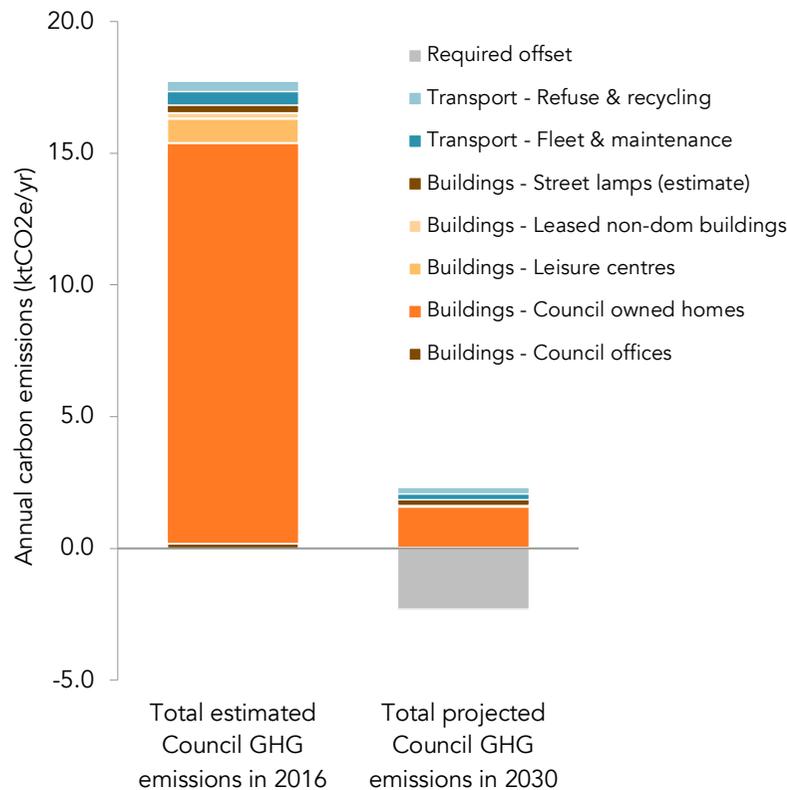
3y	<p>Use electric vans</p> <p>Start the process of replacing the Council’s 65 vans with EV vans</p>
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Waste

3y	<p>Target a 70% recycling rate for waste from all council buildings by 2021</p>
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Achieving Zero Carbon for the Council by 2030

Greenhouse gas emissions for NW Leicestershire District Council in 2017 and potential net zero emissions for 2030



A Zero Carbon Council is possible, but requires a step change in investment.

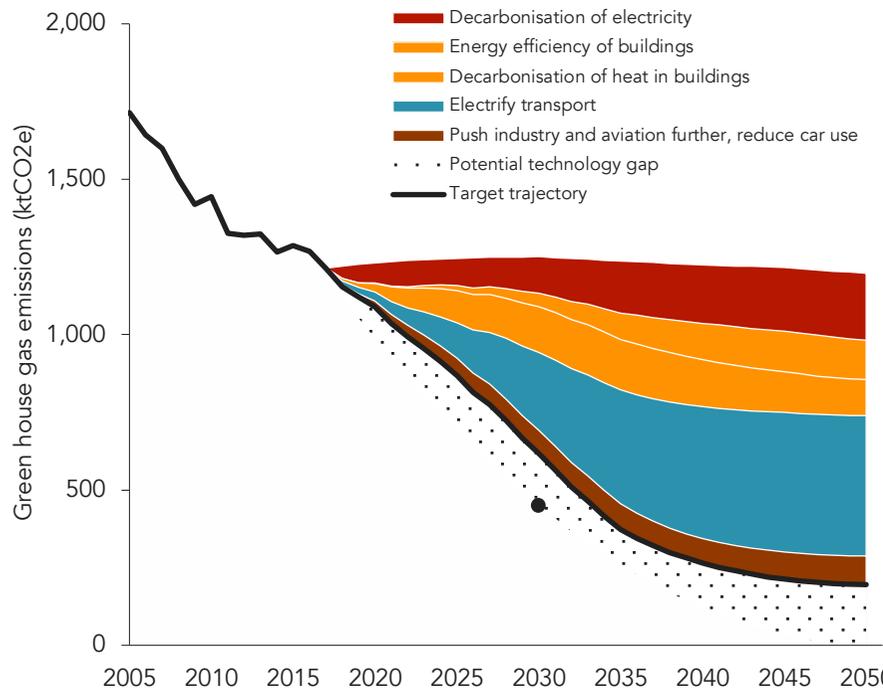
Improvements to Council owned homes and non-domestic buildings is the biggest change required. 80% of dwellings are assumed to have a whole house refurbishment by 2030.

All Council buildings should be moved to low carbon heating provided by heat pumps.

Remaining additional generation or offset by the council is 2,300 tCO_{2e}. This would require planting 110-440 hectares of woodland to achieve Net Zero.

Achieving Zero Carbon for North West Leicestershire by 2050

Greenhouse gas emission history and projection for NW Leicestershire District showing scenario for getting to net zero carbon by 2050 and contribution of current technologies



Significant contributions from buildings, transport and industry are needed to meet zero carbon targets.

There is still some gap between what can be met with current technology and zero carbon. Even with a doubling of current woodland area, new technology is required at a national level, for example Carbon Capture and Storage.

The earlier action is taken the faster the target can be achieved.

Influence - opportunity example: the new Local Plan

The new Local Plan will need to support the Net Zero Carbon vision. New requirements recommended in this report include:

A rapid transition towards Net Zero Carbon New Homes and Buildings

Clear encouragement for renewable energy

The creation of a Carbon Offset Fund

A clear infrastructure vision for the electrification of transport

Clear and precise requirements on waste, recycling and more generally the circular economy

A new vision for the role National Forest towards Net Zero Carbon