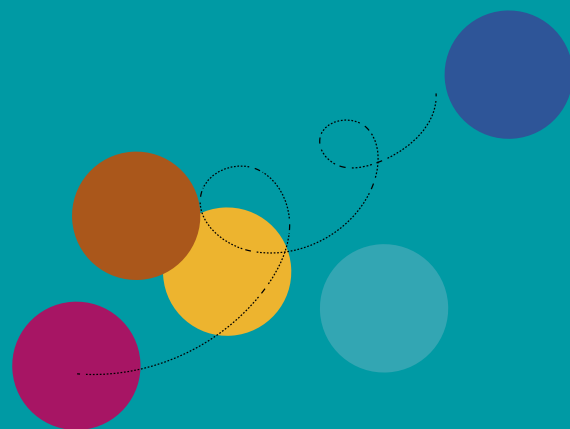




NORWICH
City Council



Norwich Energy Plan

for a sustainable city

*A Plan for Resilient and
Affordable Energy and Net Zero
Emissions by 2045*

A Plain-English Summary





1. Introduction

Norwich City Council has created the '*Norwich Energy Plan*' to help the city tackle three big challenges at the same time:

- Energy security and resilience
- Rising energy costs
- Climate change

Moving away from the combustion of fossil fuels to low carbon electricity is the best way to tackle these challenges, and in doing so the city can achieve:

- Warmer homes
- Lower energy bills
- Cleaner air
- Better health
- More green spaces and wildlife
- Stronger communities
- More local jobs

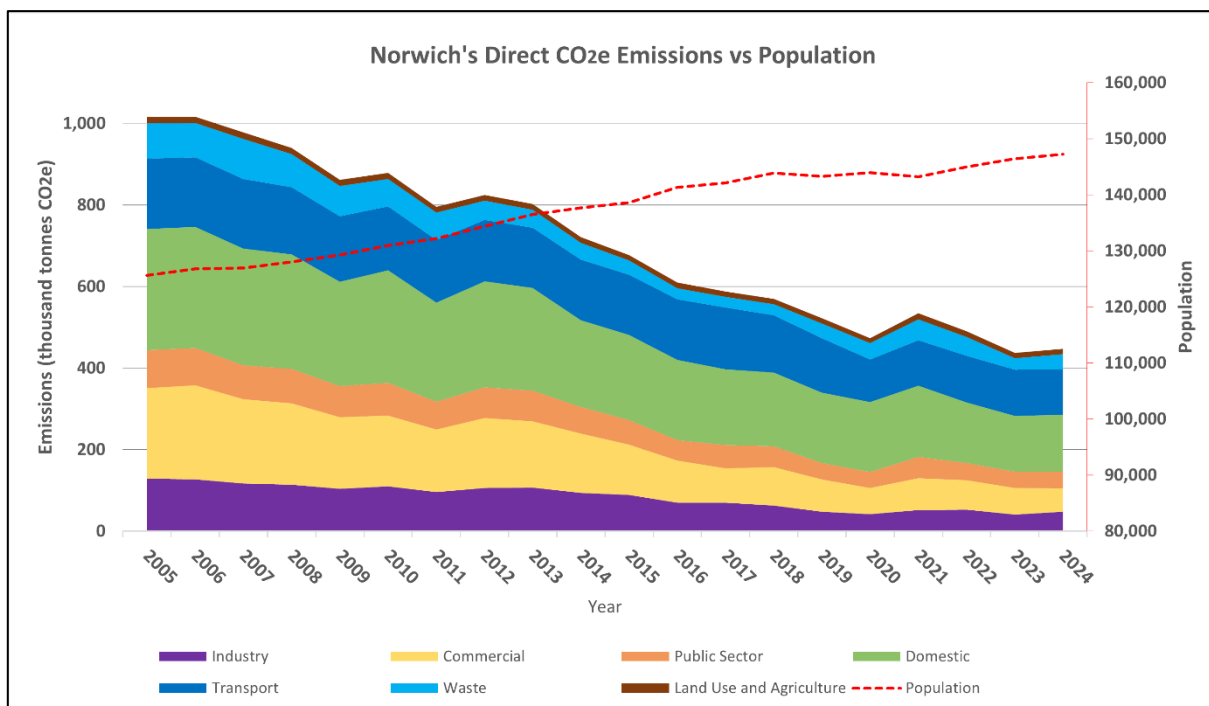
The plan sets out how Norwich can become a **net zero city by 2045**. '*Net zero*' means that almost all fossil fuel use (which is the main cause of climate change) will have stopped and greenhouse gas emissions are cut, with any remaining emissions balanced by removing carbon from the atmosphere, mainly through trees and nature.

2. Where Norwich is Today

Norwich has already made significant progress in moving away from fossil fuels, which is measured and evidenced by how emissions have reduced to date.

Key Achievements

- Direct carbon emissions from the city have fallen by 56%, since 2005
- Council operational emissions have fallen by 70%
- Emissions have fallen despite 17% population growth and 75% economic growth, since 2005
- This shows that Norwich has already proved it is possible to move away from fossil fuels and reduce emissions, while growing the economy.



Graph 1. *Norwich's carbon emissions reduction between 2005 to 2024 (latest data available), alongside increased population growth.*

However, progress now needs to accelerate to meet the 2045 target, requiring a more coordinated approach.

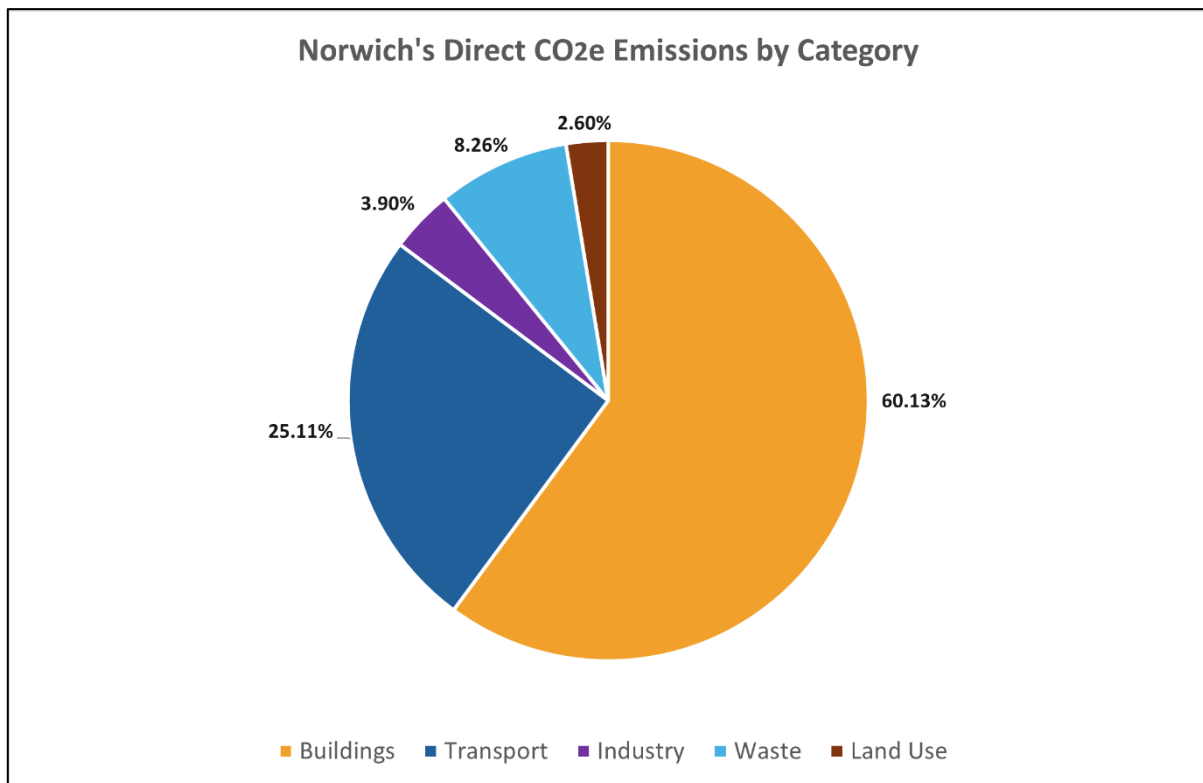
To stay within our fair share of global carbon emissions, Norwich must more than double its rate of decarbonisation:

- Historical reduction rate: 4.1% per year
- Required future rate: more than 9% per year

Without faster action, Norwich's remaining 'carbon budget' will be used up within about 6.5 years, at present emission rates. Exceeding our carbon budgets means the city will contribute to dangerous global climate change.

3. What Causes Norwich's Emissions?

Most of Norwich's carbon emissions come from two areas – Buildings and Transport, as shown in Graph 2 below and summarised in the table on the next page.



Graph 2. *Norwich's carbon emissions by sector.*

Current Emissions

- Buildings: 274,000 tonnes CO₂e per year
- Transport: 126,000 tonnes CO₂e per year
- Land and trees currently remove about 7,000 tonnes CO₂e per year

Source	Emissions share
Buildings	64%
Transport	27%
Other sectors	9%

This means the biggest opportunities for reducing emissions are found in:

1. How we heat and cool buildings
2. How we travel
3. How we manage land and nature



4. What Net Zero Means for Norwich

The plan's overall approach is called **electrification**. This means changing the way we use energy to move away from fossil fuels towards cleaner technologies that run on electricity, which can be generated from renewable sources such as solar and wind and nuclear.

The transition to electrification will deliver a reduction in carbon emissions from the city, as shown in Graph 3 on the next page.

In simple terms, the plan is to:

Move Away From

- Gas and oil boilers
- Petrol and diesel vehicles
- Fossil fuels

Move Towards

- Heat pumps and electric heating and cooling systems
- Electric vehicles
- Solar panels
- Battery storage
- Renewable electricity

The UK electricity system is already changing rapidly. In 2025, 63% of UK electricity came from low carbon sources, according to the National Energy System Operator (NESO).

The UK government has set the following national ambitions for the electricity grid:

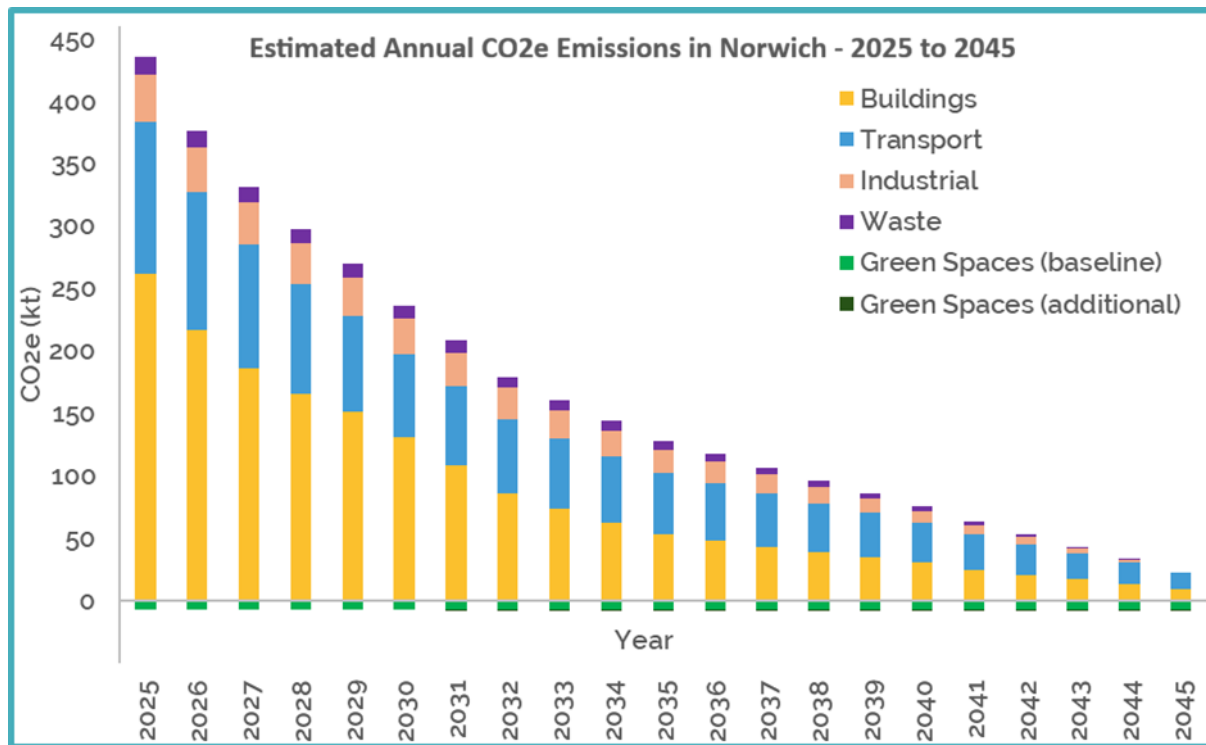
- 95% of electricity will be low-carbon by 2030 – with more generation from renewables and nuclear
- Fully net-zero electricity by 2035

As our electricity grid becomes cleaner, everything powered by electricity becomes cleaner too.

The transition to electrification means that demand on electricity networks will increase compared to today – to ensure the transition to net zero can take place, it is important to ensure local electricity networks receive sufficient investment to be future ready. The council has developed this plan in partnership with UK Power Networks, Norwich's



distribution network operator, to ensure the city's electrical infrastructure can support the targets in this plan.



Graph 3. Norwich carbon reduction targets for main emission sources

5. Warmer Homes and Lower Bills

The largest part of the plan focuses on buildings because they produce most of Norwich's emissions.

Homes in Norwich

There are around 68,590 homes in Norwich currently

Of these:

- 35,783 homes (52%) are below Energy Performance Certificate (EPC) Band C.
- These homes need energy-efficiency improvements to help reduce energy demand.

What Needs to Happen?

To achieve the net zero target, every year until 2045:

- Around **2,766 homes** need to switch to electric heating, such as heat pumps.
- Around **879 solar panel systems** need to be installed.



The plan aims for:

- 90% of buildings to be electrified by 2045, around 10% already are.
- Heating demand to fall by 30% – around 10% of this demand reduction is expected to result from climate change itself driving warmer average temperatures and 20% coming from energy efficiency measures, such as improved insulation, glazing and heating controls.

Positive Benefits

The plan strongly emphasises that the ‘retrofitting’ of buildings (making changes to improve the energy and carbon performance of buildings) is about much more than reducing carbon emissions. Benefits include:

- **Lower Bills** – better insulation means homes need less energy to be heated to a comfortable temperature.
- **Reduced Fuel Poverty** – people can keep homes warm more affordably.
- **Better Health** – cold homes are linked to respiratory illness, heart disease, stress and poor mental health. Warmer homes during the winter improve overall health outcomes.
- **Increased Energy Security** – Generating more local renewable energy reduces dependence on international fuel markets and price shocks, helping us to remain resilient into the future.
- **More Jobs** – thousands of retrofit projects will need:
 - Electricians
 - Insulation installers
 - Heating engineers
 - Construction workers
 - Energy advisers

This could create long-term local employment to support the transition to net zero.

6. Cleaner Transport and Healthier Streets

Transport is Norwich's second biggest source of emissions.

Vehicles in Norwich



There are around 66,173 vehicles currently registered in the city, including:

- 54,070 cars
- 7,741 vans
- 341 HGVs
- 304 buses

Only a small proportion of these are currently electric vehicles, with the majority being petrol or diesel.

What Needs to Happen?

To achieve the net zero target, the plan estimates:

- **2,969 vehicles per year** must switch from petrol or diesel to electric.

The goal is:

- 89% of vehicles electric by 2045.

Electric Vehicle Infrastructure

Norwich currently has:

- 293 public electric vehicle charging ports
- Approximately 1,380 battery-electric vehicles

The city will need significantly more charging points as EV ownership grows.

Co-Benefits of Transport Decarbonisation

The plan highlights several immediate benefits, including:

- **Cleaner Air** – Electric vehicles produce no tailpipe emissions. This means less nitrogen dioxide and particulate pollution linked to asthma, lung disease and heart disease.
- **Quieter Streets** – EVs produce much less noise than petrol and diesel vehicles.
- **Reduced Running Costs** – Electric vehicles generally cost less to run and maintain.
- **Better Public Health** – Cleaner air means fewer illnesses and potentially lower NHS costs.



Public Transport and Active Travel

The plan is not just about replacing fossil fuelled cars with electric cars. It also aims to reduce the number of journeys made by private vehicles.

Priorities include:

- Increased active travel – Walking, Wheeling, Cycling
- Increased use of public transport
- Car sharing

Norwich already has:

- Seven Pedalways routes
- Significant cycling infrastructure investment
- Electric buses making up around 60% of the city's bus fleet
- The Beryl bike, e-bike and e-scooter scheme

The plan sees active travel as one of the most affordable ways to improve both health and emissions. Expanding the use of active travel modes and public transport will play an important role in reducing emissions and improving our city alongside the transition to electric vehicles.

7. Nature, Trees and Greener Neighbourhoods

Even after major emissions reductions, some carbon emissions will still remain.

To balance this and get to net zero, the city must increase carbon emission 'removals' from the atmosphere, as shown in Graph 3 below.

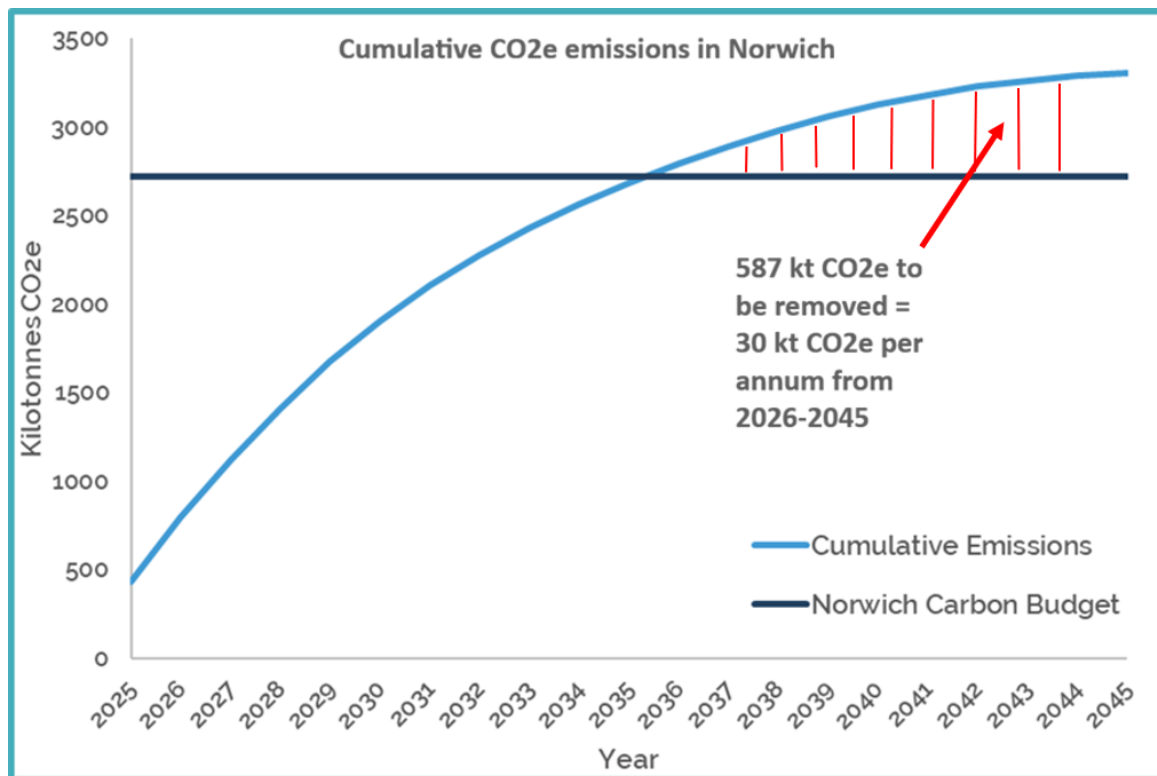
Carbon Removal Target

Norwich must remove:

- 587,000 tonnes of CO₂e (carbon dioxide equivalent) between now and 2045.

This equals roughly:

- 30,000 tonnes of CO₂e per year, which is the equivalent to planting 30,000 to 40,000 trees annually.



Graph 4. Norwich’s cumulative emissions out to 2045, compared with the city’s carbon budget, showing the required emissions removals.

Land Use in Norwich

The existing city area covers around: 3,903 hectares

This is made up of approximately:

- 66% built environment
- 19% trees
- 14% grassland

Tree Canopy Cover Targets

The council has set out an ambition to increase tree canopy cover in Norwich from **20% to 30%** by 2035, through:

- Tree planting
- Habitat creation
- Garden projects
- Nature recovery work



Benefits of More Trees and Green Space

The plan identifies many benefits beyond removing carbon emission from the atmosphere.

- **A Cooler City** – Trees reduce overheating during heatwaves, by providing important shading and evaporation.
- **Better Air Quality** – Trees help filter pollutants and clean our air.
- **Improved Biodiversity** – More habitats support birds, insects and other wildlife, contributing to a nature recovery in the city.
- **Better Mental Health** – Access to nature improves wellbeing.
- **Flood Resilience** – Green spaces absorb rainfall and reduce flooding risk, helping improve resilience.
- **Community Pride** – Greener neighbourhoods are often viewed as safer and more attractive places to live.

8. Beyond Direct Emissions: Consumption Emissions and Sustainable Food

The plan also discusses "consumption emissions" – these are carbon emissions produced outside of Norwich to make the things we buy – for example: food, clothing, appliances, furniture, building materials, and all the transport and distribution associated with getting these products to us.

Research suggests these emissions may be 4–10 times larger than Norwich's direct emissions, but they are harder to quantify.

The plan encourages:

- Growing food locally in gardens, allotments and community spaces
- Buying locally produced food
- Eating seasonal produce
- Reducing food waste
- Repairing and reusing products
- Choosing lower-carbon options, such as
 - Flying less
 - Buying durable and long-lasting products
 - Recycling and reducing waste

- Green electricity tariffs
- Going car free
- Carpooling and sharing

Food systems alone are estimated to account for 21–37% of global greenhouse gas emissions, making them an important part of climate action.

9. Planned Actions

The council has committed to lead and coordinate climate action in the city, however achieving the targets set out in the '*Norwich Energy Plan*' will require the combined efforts of all the city's communities.

The table below summarises key actions the council will undertake to pursue delivery of this plan.

Action	Buildings
1	Establish a programme of resident involvement to publicise the plan, explain new energy technologies and ways of financing change
2	Establish stakeholder groups for buildings, transport and nature recovery with business and organisational leaders
3	Support community energy groups to help people take control of their energy generation and use
4	Bid for and where possible provide access to government funding grants
5	Install heat pumps, solar panels and energy efficiency measures across the council's 14,000 homes in the city
6	Install heat pumps, solar panels and energy efficiency measures across the council's operational buildings by 2030
	Transport
1	Support installation of Electric Vehicle Charge Points on-street and on council land



2	Continue to promote the expansion, use and maintenance of the city's pedalways
3	Continue to support improved, integrated and electrified public transport
4	Support initiatives aimed at reducing car use e.g. lift sharing
Land Use and Nature	
1	Explore opportunities for nature-led carbon removals, maximising biodiversity enhancement
2	Explore and promote schemes for tree planting in gardens
3	Pursue 30% tree canopy cover on council land, in line with the council's 10-Year Tree Management Plan
4	Develop a sustainable food strategy and action plan

10. Conclusion

The '*Norwich Energy Plan*' presents an ambitious, deliverable and positive vision for the city.

It recognises the urgency of climate change, but its message is ultimately hopeful: transitioning to net zero emissions will make Norwich a better place to live.

Key Goals by 2045

- Net zero city
- 90% of buildings electrified
- 89% of vehicles electrified
- Nearly 3,000 vehicles switched to electric vehicles each year
- Nearly 2,800 homes switched to electric heating systems each year
- Significant expansion of solar power generation, including through 'community energy'
- 587,000 tonnes of carbon removed through nature-based solutions



The Bigger Benefits

The plan recognises that net zero is not simply about reducing emissions. It is also about creating:

- Thermally comfortable homes
- Lower energy bills
- Better health
- Cleaner air
- More resilient energy systems
- More jobs
- Greener neighbourhoods
- Increased biodiversity
- Greater energy independence

In short, the plan sees the transition to net zero not as a sacrifice, but as an opportunity to build a healthier, fairer, greener and more prosperous Norwich for future generations – a truly sustainable city.

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