Greenhouse Gas Emissions Report 2023-24

The urgent need for action on climate change has been recognised by over 170 nations. The 2015 Paris Agreement signed countries up to work together in limiting global temperature rise to well below 2°C, with the aim of a 1.5°C limit. This is the recognised level established by the Intergovernmental Panel on Climate Change to limit the risks and impacts of climate change to within tolerable levels. In response, the UK government has set a legally binding greenhouse gas emissions reduction target of 100% by 2050, achieving net zero, with an interim target of 78% by 2035.

In March 2020, the Council approved a new Corporate Environmental Policy and Corporate Environment Strategy which reaffirmed its commitment to protecting and enhancing the environment for current and future generations. It has subsequently committed in its 10-year Nottinghamshire Plan to becoming carbon neutral in all its activities by 2030. The Council is also committed to achieving a net zero Nottinghamshire by 2050 in line with the national target.

Between 2014-15 and 2020-21 the Council had reduced its carbon emissions from energy use across its properties and highways assets by 69%. However, it recognises the need for further urgent action and formalised this by declaring a Climate Emergency in May 2021.

Date report produced: December 2024

1. Introduction

The term greenhouse gas refers to gases that trap heat in the Earth's atmosphere, increasing the atmospheric temperature and therefore contributing to climate change. These gases include carbon dioxide, methane, nitrous oxide, and fluorinated gases (mainly used in refrigeration and air conditioning). However, emissions in this report are all expressed as carbon dioxide equivalent, CO_2e.

2. Operational Scope and Organisational Parameters

As suggested by the Government's Environmental Reporting Guidelines, Scope 1 and Scope 2 emissions have been included in this report, along with Scope 3 emissions where reliable data exists. A description of the three Scopes taken from the guidelines is shown below:

Scope 1 (direct) includes emissions released straight into the atmosphere by activities owned or controlled by Nottinghamshire County Council. Examples of Scope 1 emissions include those released from combustion of fossil fuels in Council owned or controlled boilers and vehicles.

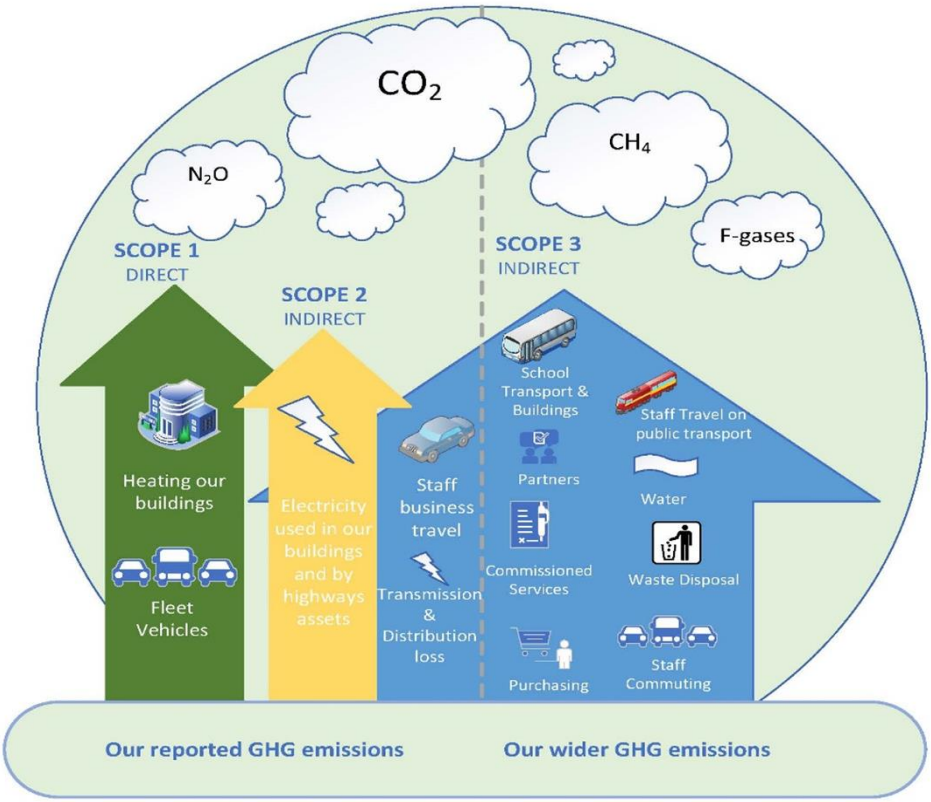
Scope 2 (energy indirect) includes emissions released into the atmosphere associated with the consumption of purchased electricity, heat, steam, and cooling, which are a consequence of the Council's activities, but occur at sources the Council does not own or control. The most common type of Scope 2 emission is electricity purchased for powering our buildings, streetlights, and other highways assets.

Scope 3 (other indirect) emissions are discretionary to include and are a consequence of the Council's actions, which occur at sources not owned or controlled by the Council and are not classified as Scope 2 emissions. Examples of Scope 3 emissions include those from private cars driven on Council business (grey fleet) and those associated with the procurement of goods and services.

This report contains details of emissions related to activities within the Council's operational control. As such, some activities which the organisation has influence but no control over, for example those provided by some partners, have been excluded. Other exclusions have been made due to the difficulty associated with gathering the data, and these exclusions will be reviewed on a year-by-year basis.

Appendix 1 lists each source by Scope and briefly describes the basis for inclusion or exclusion in this report.

The diagram below sets out a summary of included and excluded emission sources.



3. Base Year and Target

The baseline year set for the Council's Greenhouse Gas Reporting is 2019-20.

The Council's target is to achieve carbon neutrality in all its activities by 2030.

4. Calculation Methodology

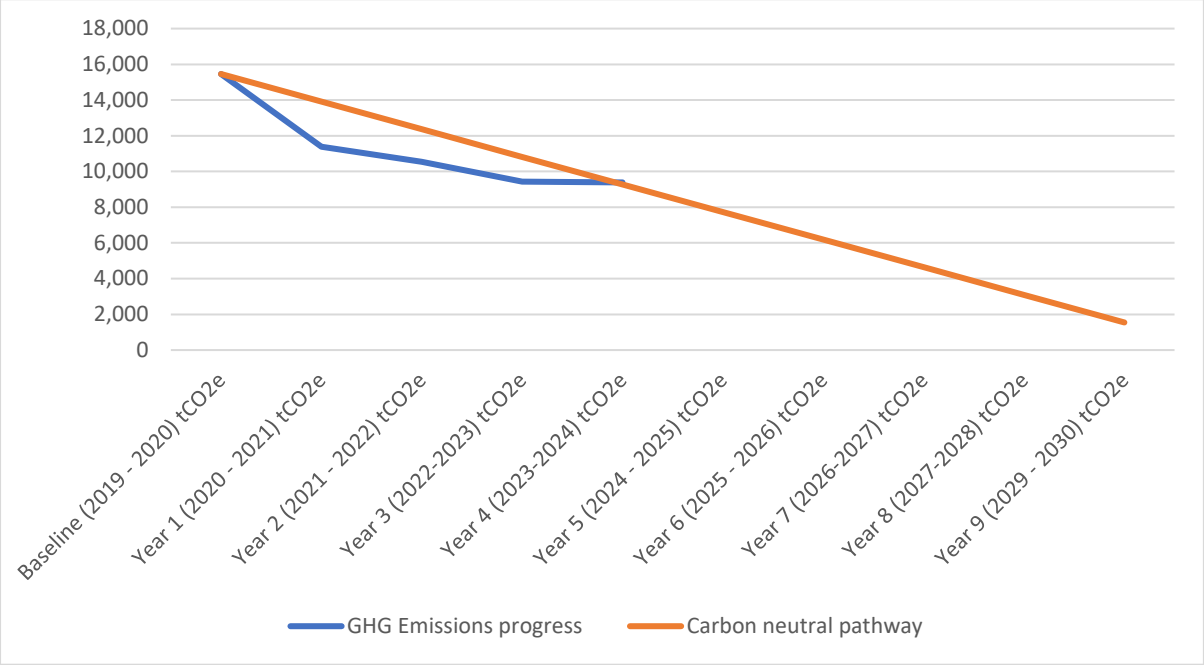
Emissions have been calculated using the Greenhouse Gas Accounting Tool developed specifically for local authorities by Local Partnerships working with the Local Government Association. This tool ensures the appropriate conversion factors for the reporting year are used for the various emission sources to convert consumption data into tonnes (t) CO_2e.

5. 2023-2024 Emissions

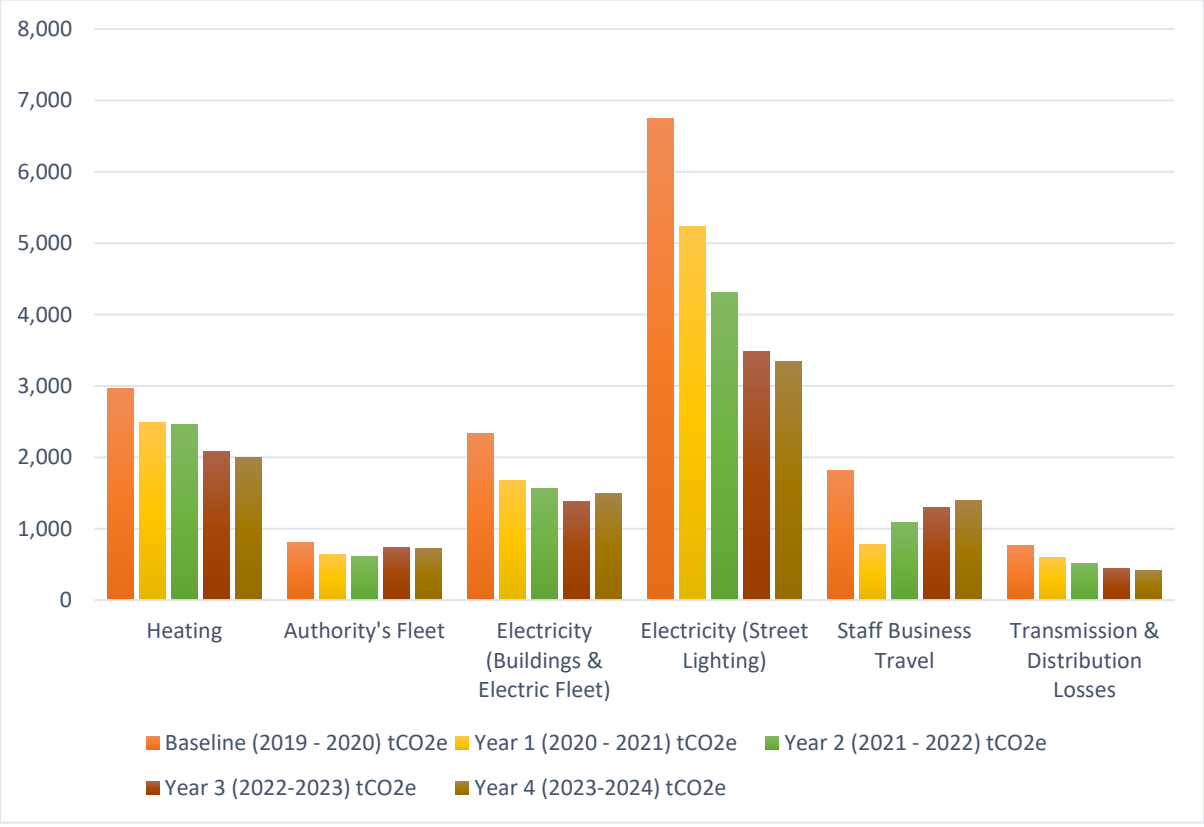
Table 1. Summary of emissions 2019-20 to 2023-24.

Scope	Source	2019-20 baseline	2020-21	2021-22	2022-23	2023-24 (% change from 2022-23)	Change from baseline%
Scope 1	Heating fuels used in buildings	2,970	2,482	2,454	2,087	2,000 (-4.2)	-32.7
	Fuel used by fleet vehicles	811	639	615	732	730 (-0.3)	-10.0
Scope 2	Electricity used in buildings	2,336	1,670	1,558	1,387	1,494 (+7.7)	-36.0
	Electricity used by highways assets	6,750	5,232	4,311	3,476	3,342 (-3.9)	-50.5
Scope 3	Fuel used by staff business travel	1,819	777	1,086	1,295	1,401 (+8.2)	-23.0
	Transmission and distribution losses	771	594	519	446	418 (-6.3)	-45.8
Total		**15,457**	**11,393**	**10,543**	**9,423**	**9,385 (-0.4)**	**-39.3**

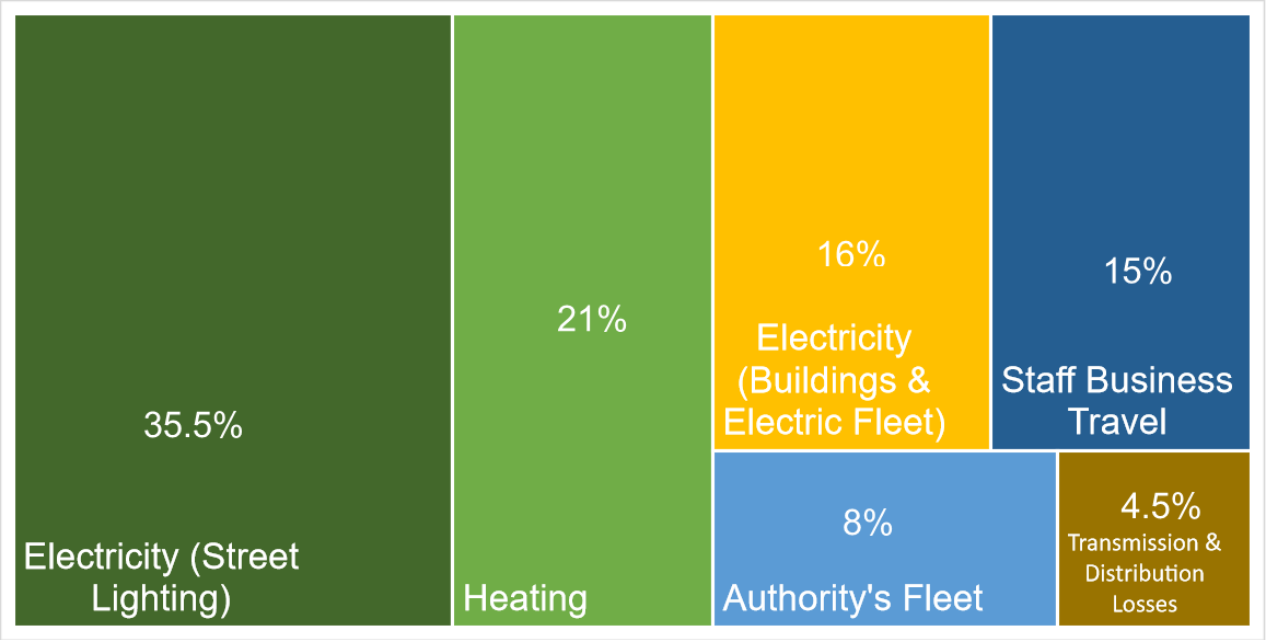
Graph 1. Overall progress towards being carbon neutral (for reported GHG emissions) by 2030



Graph 2. Comparison chart of greenhouse gas emissions 2019-20 to 2023-24



Graph 3. Summary chart of percentage share of 2023-24 emissions by source



6. Commentary

Nottinghamshire County Council's greenhouse gas emissions have reduced by 39% since 2019-20. However, compared to the previous year, 2022-23, total emissions in 2023-24 have only reduced by 0.4%.

a) Comparison from 2022-23 figures to 2023-24

Heating – overall consumption from fossil fuel heating (gas, oil, kerosene and biomass) was down by 3.3% which is largely responsible for the 4.2% decrease in these emissions.

Authority's fleet – there has been little change in fleet composition, whilst use remains much the same, hence emissions have remained more or less stationary.

Electricity in buildings – Consumption itself only rose by less than 1%, some of which could be attributable to a few fossil fuel heating systems being replaced by heat pump technology, however the overall 7.7% increase in emissions from electricity use in buildings is largely due to the increase in the corresponding conversion factor for electricity (a reflection of the carbon intensity of the grid), which rose from 0.1934 in 2022-23 to 0.207 KgCO2e per kWh in 2023-24.

Electricity in street lighting and other highways assets – the 3.9% decrease in emissions from street lighting was due to a further reduction in energy consumption, which was down by 10.2% compared to 2022-23. This was then somewhat negated by the increase in the conversion factor, as mentioned above.

Staff business travel – the 8.2% increase in emissions from staff business travel is due to the continuing upward trend for miles travelled in private vehicles. A total of

5,198,843 such miles were travelled in 2023-24, an increase of 10.3% on 2022-23, moving the total back up towards pre-Covid pandemic levels. The conversion factor used - 'average car, unknown fuel' - reflects the gradual improvement in the carbon intensity of the nation's vehicle fleet – having improved from 0.2747 in 2022-23 to 0.268 KgCO2e in 2023-24, but that improvement only goes a small way to mitigate against the increase in miles travelled.

b) Factors influencing previous emissions reductions compared to baseline

The following factors are likely to have contributed to emissions reductions since the baseline year:

1. Changes to working practices driven by the Covid pandemic and the adoption of hybrid working policies, enabling staff to reduce fleet and business mileage through use of upgraded ICT, facilitating use of virtual meetings and events. However, the continued increase in emissions from staff business travel between 2020-21 and 2022-23 is a cause for concern. The increase in emissions from fuel use in fleet vehicles in 2022-23 compared to 2021-22 is probably due to the adoption of a more accurate methodology using fuel consumption rather than miles travelled, which has been facilitated by a new fuel card system.

2. Reduced energy use in Council buildings due to lower occupancy levels from home working, investment in energy efficiency measures, and the impact of increasing grid decarbonisation (until recently) on emissions from electricity use.

3. Reduced energy use in highways assets arising from a continued investment in LED lanterns for street lighting, along with the impact of further decarbonisation of the electricity grid.

7. Carbon Offsets

Nottinghamshire County Council has not purchased any carbon offsets.

8. Renewable Energy Generation

Solar panels at 43 Council buildings generated 834,314 kWh during 2023-24.

Appendix 1 – Emission Sources

A. IN SCOPE EMISSION SOURCES	
Scope 1	**Description**
Gas	Emissions from fuel consumed for heating purposes in the Council's property assets, excluding its schools and other buildings outside its operational control, such as those operated by Inspire and Via.
Kerosene	As above.
Burning oil	As above.
Biomass	As above.
Core fleet (the Council's fleet of diesel/petrol vehicles)	Emissions from fuel consumed by Council owned or leased fleet covering all services directly operated by the Council, including some adult social care services, school transport, special needs travel and local bus transport.
Scope 2	
Electricity – streetlighting	Emissions associated with electricity consumed by the Council's highways assets, including street lighting, traffic signs and signals, lit bollards, subway pumps and other miscellaneous equipment.
Electricity - buildings	Emissions associated with electricity consumed by the Council's property assets, excluding its schools and other buildings outside its operational control, such as those operated by Inspire and Via.
Core fleet (electric vehicles)	Emissions associated with electricity consumed by Council owned or leased fleet covering all services directly operated by the Council, including some adult social care services, school transport, special needs travel and local bus transport.
Scope 3	
Business travel (private vehicles)	Emissions arising from staff business travel in private vehicles.
Transmission and distribution losses	Emissions associated with the delivery component of getting electricity from the point of generation to point of supply.

B. OUT OF SCOPE EMISSION SOURCES	
Scope 1	**Description/reason**
Refrigerant and other fugitive emissions	Excluded due to lack of data. Preliminary assessment indicates these emissions are negligible.
Scope 3	
Staff travel to and from work	Excluded as the Council does not have direct control over the methods used for travel and there is a lack of robust available

	data. The Council can influence through flexible working policies and various support schemes for greener options.
Business travel (public transport)	Journeys by modes other than private vehicles, such as by air, train and bus are excluded. Preliminary assessment suggests this is not significant.
Water	Emissions from water supply and treatment to Council property assets is excluded as the data available is low quality due to the prevalence of estimated consumption used for billing.
Nottinghamshire County Council schools	Schools are outside of the Council's operational control.
Waste	Emissions associated with waste generated from Council activities are excluded due to insufficient data.
School transport - mainstream and special educational needs or disabilities home to school journeys	Excluded due to lack of data and being outside of the Council's operational control.
Contracted travel relating to adult social care and other ad-hoc travel	Excluded as outside of the Council's operational control.
Other procured goods and services	Emissions associated with goods and services purchased by the authority are excluded due to lack of data and are being addressed via the Council's Procurement Strategy.
Alternative service delivery models - includes Via East Midlands, Arc Partnership, Inspire Culture, Learning and Libraries, the National Water Sports Centre, and several country parks	Emissions excluded as such organisations are considered outside of the Council's operational control. They will be encouraged to produce their own emissions reports, reduction plans and targets, where they do not already so.