

Report of the Assistant Director Policy and Strategy

## **Greenhouse Gas Accounting and Scope 3 Emissions**

### **Summary**

1. In March 2019, Full Council declared a climate emergency and set an ambition for York to be carbon neutral by 2030. Council resolved to:
  - a) Declare a 'Climate Emergency'.
  - b) Commit to a target of making York carbon neutral by 2030, taking into account both production and consumption emissions (scope 1, 2 and 3 of the Greenhouse Gas Protocol).
2. The Climate Change Strategy 2022-2032, approved by Full Council in December 2022, recognises the challenge of reducing city-wide scope 3 emissions, and sets out a priority of emission reduction with the focus initially on scope 1 and scope 2. However, for council emissions reporting, the council monitors, and where possible, mitigates scope 3 emissions.
3. Greenhouse gas accounting is an essential requirement to monitor progress against this pathway and is a stated objective within the Climate Change Strategy. The council currently reports annually against organisational emissions and area-wide emissions.
4. The council adopted the Local Government Authority's Greenhouse Gas Accounting Tool as the methodology for accounting organisational emissions in 2022/23.

### **Background**

5. Carbon Accounting is the process of quantifying the number of greenhouse gases (GHGs) produced directly and indirectly from an organisation's activities. While there is currently no legal requirement for local authorities to report on GHG emissions, calculating and reporting

annual emissions is an important part of monitoring and managing progress towards the council's net zero ambition.

6. Many frameworks and standards for carbon accounting exist, all with similar methodologies. The most widely used are those developed by the Greenhouse Gas Protocol.
7. Since 2020, the Local Government Association (LGA) has provided a free GHG accounting tool for all councils in England. In 2023, this tool was reviewed by CDP and aligned with the Greenhouse Gas Protocol Standards.
8. After previously developing our own methodology, the council adopted the LGA Greenhouse Gas Accounting Tool as the methodology for accounting for organisational emissions in 2022/23.

### LGA Greenhouse Gas Accounting Tool

9. The LGA GHG Accounting Tool is a template used to record and report carbon emissions. The tool calculates a council's direct CO<sub>2</sub>e emissions (Scope 1 and 2) which are directly linked to the council's operations, plus some of the indirect CO<sub>2</sub>e emissions (Scope 3).
10. Benefits of the tool include:
  - i. standardising how councils measure and report carbon emissions
  - ii. mechanism for analysing and reviewing the impact of interventions
  - iii. enabling consistent sector wide benchmarking and disclosure
  - iv. providing a robust and reviewed tool to calculate and store baselines and the outputs
  - v. alignment with global GHG reporting protocols and other international standards (CDP, Global Covenant of Mayors)
  - vi. free to use and online support and training.
11. The LGA tool allow local authorities to report against a financial boundary or an operational boundary:
  - **Financial boundary:** The authority reports on all sources of carbon emissions over which it has financial control.
  - **Operational boundary:** The authority reports on all sources of carbon emissions over which it has operational control.

The council have adopted an operational control boundary to account for sites it has ownership of or maintenance responsibility over.

12. The tool uses consumption data, provided by the council, and GHG conversion factors, provided by the Department for Energy, Security and Net Zero (DESNZ)<sup>1</sup>, to calculate carbon emissions across the Council's operational areas.
13. Each year, the council reports organisational emissions across the following categories:

*Table 1: The Scope 1, 2 and 3 categories that City of York Council report emissions for.*

<b>Scope</b>	<b>Scope Definition</b>	<b>Emissions Type</b>
<b>Scope 1</b>	Direct GHG emissions from buildings, plant and vehicles owned or controlled by City of York Council.	Heating
		Authority's Fleet
<b>Scope 2</b>	Indirect emissions associated with purchased energy consumed by City of York Council.	Electricity
<b>Scope 3</b>	All other indirect emissions that occur in the Council's supply chain.	Staff Business Travel
		Staff Commuting
		Working From Home
		Transmission and Distribution Losses
		Water
		Material Use
		Waste

14. Total organisational emissions for City of York Council are reported annually through Executive Member Decision Session<sup>2</sup>.

### **Scope 1 Emissions**

15. Scope 1 emissions are released as a direct result of an activity. For the Council, this largely comprises of combustible fuel for heating boilers and fuel burned in Council owned fleet vehicles.
16. Heating data is incorporated from a total of 74 sites (Table 2). This covers our corporate sites, museums and maintained schools, the majority of which are fuelled by natural gas. We also record the use of other fuel

<sup>1</sup> DESNZ Conversion Factors and Methodology <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023>

<sup>2</sup> Emissions report 2022/23 <https://democracy.york.gov.uk/%28S%28aw2b23jofoyuejfc1asnI055%29%29/documents/s171185/Decision%20Report%20Annual%20Carbon%20Emissions%20Report%20202223.pdf>

sources, as some of our sites operate biomass boilers, fuelled by wood pellets.

*Table 2: The different sites operated by the council supplied by heating. Some sites are fuelled by both natural gas and biomass.*

<b>Sites</b>	<b>Natural Gas</b>	<b>Biomass</b>
<b>Corporate Sites</b>	44	2
<b>School Sites</b>	22	2
<b>Museum Sites</b>	5	0
<b>Library Sites</b>	2	1

17. The Council fleet currently covers 267 vehicles, with 5 different fuel sources. A breakdown of this is provided below:

*Table 3: Vehicles in currently in the Council's fleet by fuel type.*

<b>Engine Type</b>	<b>Count</b>	<b>Percentage</b>
<b>Diesel</b>	128	48%
<b>Diesel Euro6</b>	51	19%
<b>Electric</b>	86	32%
<b>Hybrid Plug-in</b>	1	0.4%
<b>Petrol</b>	1	0.4%
<b>Total</b>	<b>267</b>	<b>100%</b>

18. Emissions associated with fossil fuel consumption (petrol and diesel) are accounted for within our Scope 1 emissions, while electricity used by our electric vehicles (EVs) are covered by Scope 2.

## **Scope 2 Emissions**

19. Scope 2 emissions are those released from an organisation's indirect consumption of an energy commodity. For the council, this consists of the purchase and consumption of grid electricity used in its operations.
20. All council purchased electricity is supplied via a green tariff, meaning that it is provided from renewable sources. This tariff has a Renewable Energy Guarantees of Origin (REGO) certification to verify the source of renewable energy. This green tariff has a cost premium of 1.4 pence per

kilowatt for the council, making the total additional cost of purchasing renewable energy for the council’s buildings and street lighting £195,978. This equates to 4.3% of the council’s total electricity costs.

21. In line with best GHG accounting practice, electricity consumption is entered into the GHG tool to calculate the emissions that would have been produced without a green tariff. However, these emissions are not included in the final total.
22. Council electricity usage covers the following categories:

*Table 4: The Council's Scope 2 sources and the relative contribution to total electricity usage from each activity.*

<b>Scope 2 Electricity Use</b>	<b>Percentage (%)</b>
<b><i>Building Use</i></b>	64%
<b><i>Streetlighting</i></b>	36%
<b><i>Fleet: Electric Cars</i></b>	>1%
<b><i>Fleet: Hybrid Cars</i></b>	>1%
<b><i>Fleet: Electric Vans</i></b>	0.2%
<b><i>Total</i></b>	100%

### **Scope 3 Emissions**

23. Scope 3 emissions are widely recognised as more difficult to account for than Scopes 1 and 2, because the required data is owned by other organisations. As a result, there is a higher degree of estimation, and therefore uncertainty, across Scope 3 categories.
24. The LGA has found that typically, current Scope 3 reporting by local authorities has been limited to staff business mileage, water, and transmission and distribution losses from electricity consumption. Increasingly, authorities are looking to report on Scope 3 emissions from staff commuting (including public transport), procured goods and services and outsourced contracts (including construction).
25. The Council has been expanding its Scope 3 reporting to capture more of its indirect emissions. The additional sources now include:
  - Staff business travel
  - Staff commuting
  - Staff homeworking
  - Water usage

- Material use from Building Services
- Transmission and Distribution
- Corporate waste

26. Business travel data measures emissions linked to the council’s use of hotels, flights, and trains for work purposes.
27. Transmission and Distribution Losses include the lifecycle emissions of electricity that is consumed or ‘lost’ in the transmission and distribution (T&D) system. This is calculated by the LGA GHG tool based on information supplied about purchased energy use.
28. Emissions associated with water consumption and water treatment are accounted for each year. However, data was unavailable from Yorkshire Water in 2022/23.
29. In 2022/23, the council incorporated emissions associated with material usage associated with our Building Services (Table 5). Data collected for this period accounted for 32% of the materials used. We will continue to expand the number of materials accounted for in our supply chain to build a more comprehensive picture of our Scope 3 emissions.

*Table 5: The top ten most carbon-intensive construction materials associated with our building services*

<b>Material Type</b>	<b>Emissions (tCO<sub>2</sub>e)</b>
<i>Metals</i>	143.7
<i>Sanitaryware</i>	61.3
<i>Boilers</i>	42.5
<i>Chemicals</i>	37.4
<i>Showers</i>	18.9
<i>Plastics</i>	16.7
<i>Wood</i>	8.8
<i>Cement</i>	8.1
<i>Sealants</i>	7.7
<i>Concrete</i>	4.2

30. Emissions associated with council recycling and general waste are recorded by tonnage. We are identifying ways to account for other kinds

of waste, for instance Waste Electrical and Electronic Equipment recycling (WEEE).

31. In 2023, we carried out a staff survey to assess emissions from staff commuting and homeworking. The questionnaire determined how far employees travelled to work and which mode of transport they used (Figure 1), amongst other questions on employee commuting habits. Examples of the questions used can be seen in Annex 1. The design of this questionnaire was informed by a variety of sources. Annex 2 provides further details on survey methodology.
32. Questions about homeworking were also included in the 2023 staff survey. Following the LGA guidance on homeworking, this portion of our staff survey was informed by the EcoAct Whitepaper<sup>3</sup>. Questions were designed to establish a 'base case' and 'enhanced case' of homeworking emissions in line with the LGA and EcoAct guidance.
33. A 'base case' is the baseline scenario built on a certain set of assumptions as laid out in EcoAct's methodology. Employee's Full Time Equivalent Hours were determined from the survey and entered into the LGA tool, where these assumptions are applied.
34. Some more detailed questions are asked in the survey, allowing for an 'enhanced case' to be developed in future. This is a more bespoke approach which accounts for actual equipment use where possible, the type and duration of heating and cooling and other information. This relies on accurate self-reporting from staff.

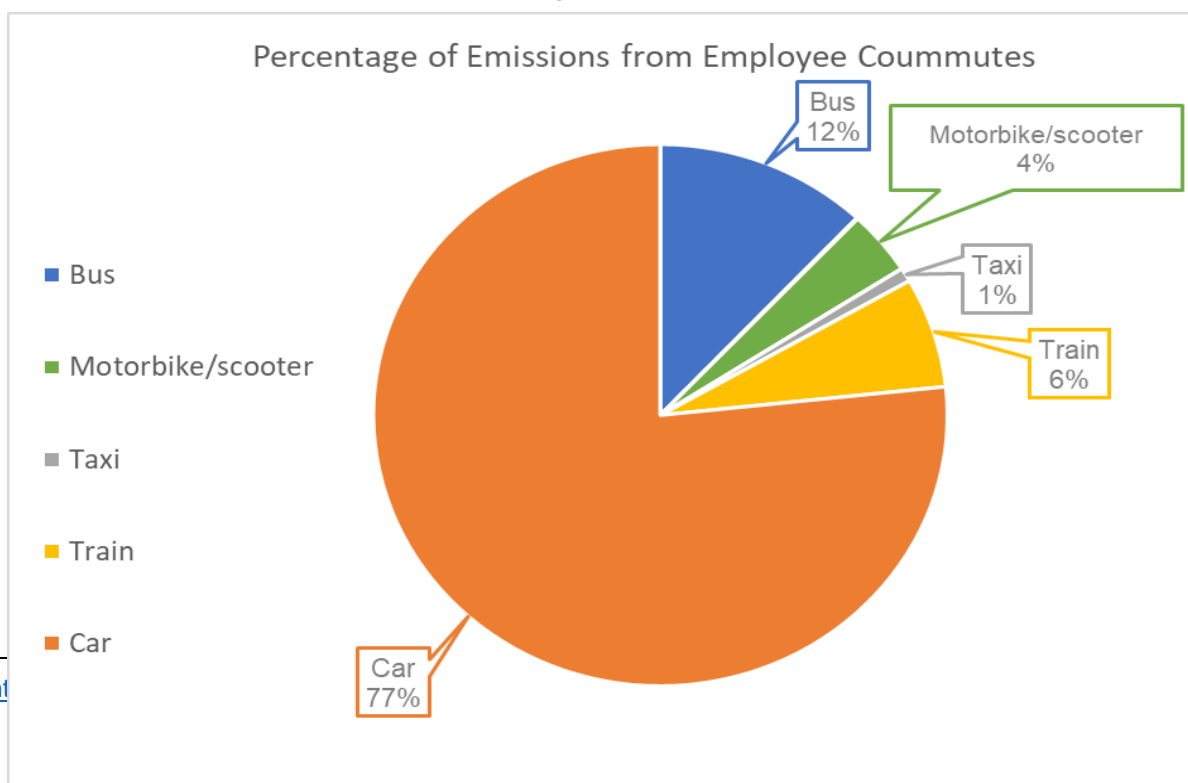


Figure 1 The top five largest sources of emissions from employee commutes (%).

## Emissions Reduction – Interventions

35. The council is working on several projects to reduce organisational carbon emissions across Scope 1, 2 and 3.

### Scope 1

36. The council has produced Heat Decarbonisation Plans (HDPs) for 22 schools, 4 leisure centres and 8 corporate buildings. These HDPs identify ways to transition to low-carbon heating systems, as well as how to improve energy efficiency and implement renewable technologies.
37. If implemented in full, the recommendations of the HDPs could reduce carbon emissions by 1,593 tCO<sub>2</sub>e, which is 61% of our current Scope 1 heating emissions. These measures would also save £432,000 annually in heating at our school sites, £157,000 at leisure centres and at least £31,000 annually at our corporate sites.
38. The capital cost of implementing all the measures outlined in these HDPs would be in excess of £21 million. There is the potential to fund this work through the Public Sector Decarbonisation Fund or alternative grant funding. Opportunities for accessing external funding are continuously being assessed.

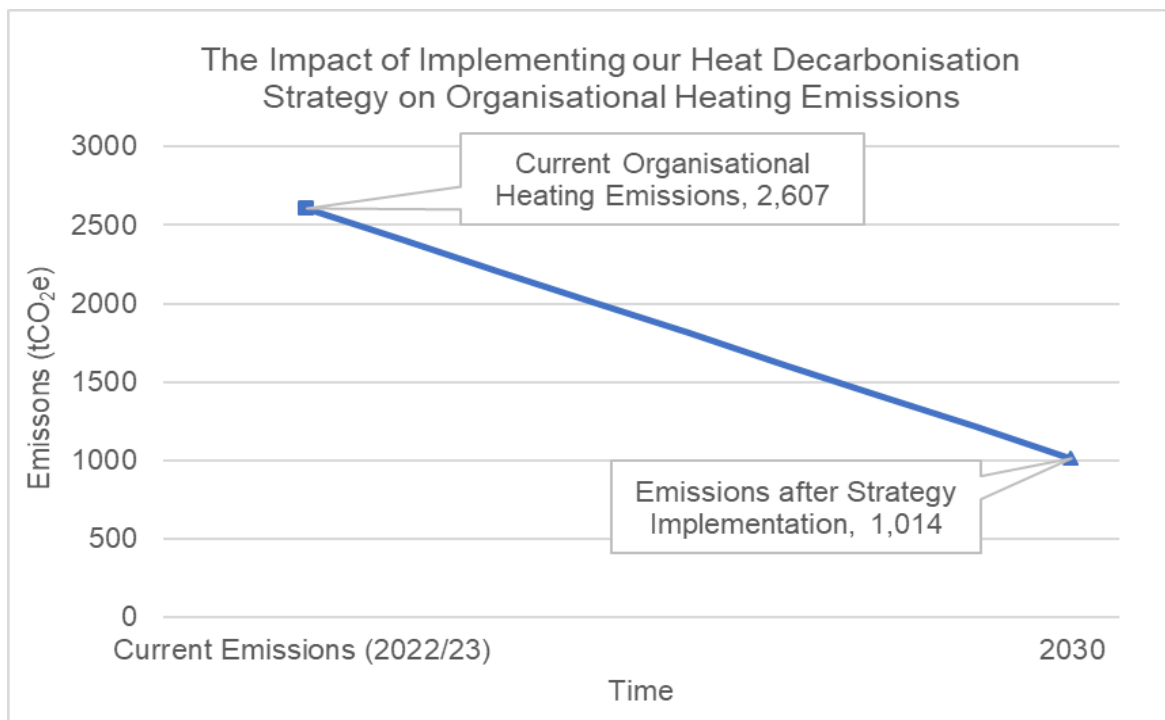


Figure 2 The potential emissions reduction that could be achieved by 2030 with our current heat decarbonisation strategy, comprised of heat decarbonisation plans for 34 assets.



39. The council is replacing its fossil fuel powered fleet vehicles with EVs through the Vehicle Replacement Programme. At present, 32% of the fleet consist of EVs. Currently, 51% of vehicles are classed as “low emission” (Electric, Hybrid and Euro 6), compared to an average of 25% in 2021/22.

## Scope 2

40. The council has received funding from the Mayoral Combined Authority (MCA) Net Zero Fund to carry out a number of energy reduction projects:
- LED streetlight conversion – replacing 1,200 lamps with LED will reduce result in an estimated carbon saving of 74 tCO<sub>2</sub>e/yr.
  - LED replacement programme at Hazel Court, West Offices and to convert lighting into LED 37 tCO<sub>2</sub>e/year.
  - Replacing the inefficient electric heating system at Honeysuckle House and Alex Lyon House with a communal renewable heating system, saving 770 tCO<sub>2</sub>e over a 15-year period.
41. Opportunities to implement renewable energy on council assets are continually pursued. Council sites with solar panels can be seen in Table 6 below.
42. The council partner with Solar for Schools and York Community Energy to install solar panels on our school sites. Solar for Schools has seen solar panels installed in three City of York Council maintained schools. We will continue to encourage schools to install solar panels with Solar for Schools and pursue other funding routes to install renewable technologies.

*Table 6 Council sites with solar panels installed.*

<b>Site Type</b>	<b>Sites</b>	<b>Count</b>
<b>Libraries</b>	The Centre @ Burnholme	
	Clifton Explore Library (Under Construction)	2
<b>Council Offices</b>	West Offices	
	Hazel Court Eco Depot	2
<b>Schools</b>	Clifton Green Primary School	
	Danesgate School	
	Lord Deramore's Primary School	3
<b>Total</b>		<b>7</b>

## Scope 3

43. Scope 3 remains a challenging area to measure and reduce emissions. The greatest area for influence is through our purchasing process and supply chain.
44. We have recently developed a series of sustainability-focused questions aiming to both reduce the carbon emissions associated with our procurement process and promote positive environmental impacts with new contracts. The procurement process now includes questions on topics such as carbon emissions, the circular economy, the natural environment, and sustainability. These questions can be seen in Annex 3.
45. The council are using the data from the Staff Homeworking and Commuting Survey to inform a new Staff Travel Plan, which aims to promote active and sustainable travel by council employees across different sites and identifies a range of actions.

## Offsetting and Insetting

46. The council is implementing the above measures to reduce its organisational carbon emissions towards its target of net zero by 2030.
47. In order to achieve its organisational net zero target, any remaining emissions that it is unable to decarbonise by 2030 (i.e. residual emissions) will need to be removed from the atmosphere using negative emissions technologies (NETs). This could include nature-based removal methods such as tree planting and ecosystem restoration, or engineered methods such as direct air capture with geological storage (DACCS).
48. The council could address its residual emissions by purchasing carbon credits from carbon removal projects outside the city boundary (i.e. carbon offsetting). Alternatively, prioritising investment in carbon removal activities within the city boundary (i.e. carbon insetting) can provide additional environmental, social and financial benefits for York.
49. The council is developing an insetting/offsetting strategy that will set out an approach to address its residual emissions that aligns with best practice and maximises benefits for York. In line with best practice, the council will prioritise reducing its direct and indirect emissions to minimise the need for offsetting/insetting. Offsetting/insetting will only be considered as a last resort to address residual emissions after all actions

have been taken to reduce and avoid its direct and indirect emissions as much as possible. The council's insetting/offsetting strategy will be shared with partners who are also exploring how to meet challenging net zero targets.

### **Consultation**

50. Internal consultation has taken place with relevant Council departments and Heads of Service.

### **Options**

51. This section is not applicable to this report as there are no options being presented to the Scrutiny meeting.

### **Analysis**

52. This section is not applicable to this report as there are no options presented.

### **Council Plan**

53. The "One City, for all" 2023-27 Council Plan sets out 4 core commitments. Greenhouse Gas reporting most closely relates to the Climate Change commitment for York to be net zero carbon and climate ready by 2030. Greenhouse Gas Accounting provides a mechanism for measuring progress against this ambition and to take appropriate action where required.

### **Implications**

54. There are no implications from this report as it is only to provide information for Scrutiny at this stage.

### **Risk Management**

55. This is an information report to Scrutiny only, with no decisions required.

## Recommendations

56. Scrutiny Committee is asked to:

- i. Review the content of the report and provide any recommendations to the Executive Member for Environment and Climate Change ahead of the reporting cycle for 2023/24

Reason

To monitor progress towards the Council ambition of being net zero carbon by 2030.

## Contact Details

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Claire Foale  
Assistant Director Policy and Strategy

Report  
Approved



Date 11/04/2024

Wards Affected:

All

For further information please contact the author of the report.

## Background Papers:

2020/21 EMDS Report Organisational Emissions

[https://democracy.york.gov.uk/documents/s153499/EMDS\\_Corporate%20Emissions%20Report\\_2021.pdf](https://democracy.york.gov.uk/documents/s153499/EMDS_Corporate%20Emissions%20Report_2021.pdf)

2021/22 EMDS Report Organisational Emissions

[https://democracy.york.gov.uk/documents/s164307/EMDS\\_Corporate%20Emissions\\_Dec%202022\\_.pdf](https://democracy.york.gov.uk/documents/s164307/EMDS_Corporate%20Emissions_Dec%202022_.pdf)

2022/23 EMDS Report Organisational Emissions

<https://democracy.york.gov.uk/%28S%28aw2b23jofoyuejfc1asnI055%29%29/documents/s171185/Decision%20Report%20Annual%20Carbon%20Emissions%20Report%20202223.pdf>

Greenhouse Gas Conversion Factors

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023>

EcoAct Whitepaper on Homeworking Emissions

<https://info.eco-act.com/en/homeworking-emissions-whitepaper-2020>

## Annexes

Annex A: Staff Survey: Employee Commuting and Homeworking

Annex B: Employee Commuting & Homeworking Emissions – Resource List

Annex C: Procurement Sustainability Questions

## Glossary of Terms

- **Carbon Emissions** – Carbon emissions refer to the amount of carbon released into the atmosphere. Carbon dioxide (CO<sub>2</sub>) is the most common greenhouse gas emitted by human activities.
- **Greenhouse Gas Emissions** – Other greenhouse gases (GHGs) are gases released into the atmosphere that contribute to global warming. In addition to carbon dioxide (CO<sub>2</sub>), these include methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and F-gases (fluorinated gases).

- **Carbon Equivalents (CO<sub>2</sub>e)** –Carbon dioxide equivalent (CO<sub>2</sub>e) is often used to quantify the amount of different greenhouse gases released.
- **Net Zero vs Carbon Neutral** – the council has an ambition to be net zero by 2030. Net zero carbon refers to a balance of the amount of carbon released into the atmosphere and the amount removed to equal zero overall.
- **Scope 1, 2 and 3 emissions** – GHG Emissions are divided into three distinct reporting scopes, describing the different kind of emissions generated by an organisation's operations:
  - Scope 1 emissions are released as a direct result of an activity.
  - Scope 2 emissions are those released as an indirect consumption of an energy commodity.
  - Scope 3 emissions are all other indirect emissions other than electricity.