Sunderland City Council

Sunderland City Council Low Carbon – Annual Data Report 2023/24

September 2024

City of Sunderland Low Carbon

We're on a mission to reduce our emissions

Contents

LOW CARBON – ANNUAL DATA REPORT

APRIL 2023 TO MARCH 2024

Executive Summary

0.1 Sunderland City Council declared a climate emergency in 2019. This declaration committed Sunderland to reduce its citywide emissions and help global temperature rise stay well below 2.0°C, pursuing 1.5°C by 2050, in-line with the Paris Agreement of 2015.

0.2 In 2020/21 Sunderland's 2030 Shadow Board prepared the Low Carbon Framework which set out Sunderland's approach to achieve citywide carbon neutrality by 2040. This was adopted by the partnership in December 2020. The Council endorsed the Low Carbon Framework in January 2021 and also adopted its Low Carbon Action Plan (LCAP), which set the target for the Council to become carbon neutral by 2030. The LCAP was reviewed, and an updated Action Plan was approved by Cabinet in July 2022. The Low Carbon Framework and LCAP are published on the MySunderland website.

0.3 This report is the Council's fourth annual carbon report since the Low Carbon Framework was endorsed and the LCAP was adopted. It estimates the Council's greenhouse gas (GHG) emissions for the 2023/24 financial year (with updates to previously published data where appropriate for accuracy purposes), as well as citywide carbon (CO_2) emissions for Sunderland in the 2022 calendar year (the latest year for which citywide data is available).

0.4 The report sets out that the Council's scope 1 and 2 carbon footprint during 2023/24 was 8,328 tonnes of Carbon Dioxide equivalent (8,328 tCO_2e), representing a 4.9% reduction from last year and a 58.7% reduction since the 2017/18 baseline. Scope 1, 2 and 3 emissions are defined in Section 4 of this report. The main source of emissions from Council operations in 2023/24 was liquid fuels for the vehicle fleet. Gas experienced the greatest emissions reduction, decreasing by 19.5% since 2022/23. The greatest challenge for decarbonising the Council's operations is currently the vehicle fleet, with emissions increasing by 0.75% from 2022/23 levels.

0.5 The Council continues to refine its scope 3 emissions data, building on the annual data report for 2022/23. Based on current data availability, the Council's scope 3 emissions for the 2023/24 financial year are estimated to be 74,417 tCO_2e (89.94% of overall emissions, increasing from 50,400.28 which was equivalent to 85% in 2022/23). The main sources of scope 3 emissions for the Council are purchased goods and services, as well as leased assets – including emissions from leased port assets, as well as operational emissions for schools, vacant assets and fire stations. A 2017/18 baseline comparison is not available for scope 3 emissions.

0.6 1,046,145 tCO_2 were emitted citywide in 2022 (the latest year for which data is available), representing a 4.9% decrease from 2021 levels. It is important to note that emissions in 2020 - 2022 were significantly influenced by COVID-19. Emissions in 2022 were 11.7% lower than in 2019 (the most recent year data is available where emissions were not impacted by COVID-19).

0.7 Aligned with the Tyndall Centre carbon budget, the Tyndall Centre provide recommended interim city-wide targets – including base year decarbonisation targets and interim 5-yearly carbon budget targets. The current recommended interim targets for Sunderland, aligned with a 14.4% annual reduction in citywide emissions and a carbon budget of 8.2 $MtCO_2$ between 2020 – 2100, are to reduce CO_2 emissions by 61.5% by 2025 based on 2015 levels and to stay within a carbon budget of 2.8 $MtCO_2$ between 2023 – 2027.

0.8 Sunderland met the first interim target for the city suggested by the Tyndall Centre for 2015-20 (a 16.1% reduction in annual citywide emissions). However, the city is not currently on track to meet its second recommended interim target of a 61.5% reduction against a 2015 baseline by 2025 (which is aligned with a 14.4% annual reduction). If this is to be achieved by the end of 2025, the city must reduce annual emissions rapidly over the forthcoming months.

0.9 Sunderland, however, met its first interim recommended 5-year carbon budget period target of 5.8 $MtCO_2$ between 2018 – 2022 (aligned with the city's carbon budget calculated by the Tyndall Centre of 8.2 $MtCO_2$ between 2020 – 2100). The city produced 5.5 $MtCO_2$ between 2018 – 2022, which was 0.3 $MtCO_2$ below target. This is in part due to emissions reductions targets being exceeded in previous years. As noted in 0.7 the next city-wide carbon budget target for 2023 – 2027 is considerably lower at 2.8 $MtCO_2$.

0.10 The main causes of city-wide CO_2 emissions in Sunderland in 2022 were the domestic sector (emitting 347,606 tonnes CO_2, mainly due to domestic gas) and transport (emitting 344,340 tonnes CO_2, mainly due to road transport).

0.11 A summary of key activity and progress against each Low Carbon strategic priority area during this period is outlined in section 6 of this report. This includes: continued engagement, for example, through the young people's Environmental Green and Sustainable Group and initiatives such as EcoFest; investment to improve green infrastructure, including as part of the North East Community Forest; support for retrofit works in homes and businesses; the ongoing development of renewable energy schemes; a range of active and sustainable travel schemes and infrastructure; investment in the city's green economy; and progress on reducing waste and consumption including promotion of Refill Sunderland to help reduce the use of single use plastics and maximising community growing space.

0.12 The data and progress to date set out in this annual report will inform key areas to be prioritised moving forward both from a Council and city-wide perspective.

Introduction

1.0.1. This report provides an overview of the Council's carbon footprint for the 2023/24 financial year as well as the citywide carbon footprint for Sunderland for the 2022 calendar year (the most recent year for which Government data is available). In addition, this report provides an overview of key work undertaken during the last year to support delivery against the Council's and City's carbon reduction targets.

1.0.2. Based on the citywide Low Carbon Framework partners have adopted, we aim for Sunderland to be a carbon neutral city by 2040. Through its Low Carbon Action Plan, the Council aims to be carbon neutral as an organisation across scope 1 and 2 emissions by 2030.

1.0.3. Section 1 of this report summarises the emissions data for the Council and then for Sunderland as a city (this data is set out and analysed more fully in sections 4 and 5 respectively). Section 2 briefly sets out the global context for the city's work, including the Paris Agreement. Section 3 covers Sunderland's wider reporting mechanisms, in addition to this annual report, including the establishment of quarterly reporting and an annual submission to CDP (formerly Carbon Disclosure Project). The report then moves to focus in more detail on the City Council's annual carbon emissions followed by those for the city. Section 4 defines the Council's current organisational boundary and provides an overview of the Council's scope 1, 2 and 3 emissions for each financial year since 2017/18 (which is used as the baseline for reporting), before going into further depth for each key source of emissions in turn. Section 5 provides a brief overview of citywide emissions for 2022 (the most recent year data is available) and compares annual trends since the 2015 baseline, before breaking this down into the main sources of emissions within each sector and comparing this to the regional and national averages. Section 6 summarises key low carbon activity progressed during the year 2023/24.

1.1. Sunderland City Council – Overview of emissions

1.1.1. The Council's scope 1 and 2 carbon footprint during 2023/24 was 8,328 tCO_2e, representing a 4.9% reduction from the previous year 2022/23 and a 58.7% reduction from the 2017/18 baseline. The main source of emissions from Council operations in 2023/24 was the use of liquid fuels for the vehicle fleet.

1.1.2. The Council is also continuing to develop its scope 3 datasets, in line with recommendations from the Greenhouse Gas Protocol. Based on the current data available, scope 3 emissions for the Council are estimated to have accounted for 74,417 tCO_2e (89.94% of overall emissions, increasing from 50,400.28 which was equivalent to 85% in 2022/23). A baseline comparison for 2017/18 is not available for scope 3 emissions. Focus on scope 3 emission sources (our indirect emissions) will continue to increase as we move forward,

to bring our value chain with us on our Low Carbon journey and achieve an increasingly robust monitoring process.

1.1.3. Sunderland City Council's full greenhouse gas inventory is set out in Figure 1 below.

Figure 1 - Sunderland City Council's Greenhouse Gas Emissions Inventory, 2023/24

		Annual Emissions (tCO_2e)								
Scope	**Source**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**Trend from previous year**	**Trend from base year**
Scope 1[2]	Gaseous fuels	3,004.73	3,152.08	3,241.08	3,241.93	2,851.78	2,584.09	2,079.73	↘19.5%	↘ 30.8%
	Liquid fuels (fleet)	2,556.84	2,972.05	2,569.91	2,554.71	2,616.39	2,569.84	2,589.06	↗0.8%	↗ 1.3%
	Total scope 1	**5,561.57**	**6,124.13**	**5,810.99**	**5,796.64**	**5,468.17**	**5,153.93**	**4,668.79**	**↘9.4%**	↘ 16.1%
Scope 2	Purchased electricity (buildings)	5,072.04	3,848.68	3,188.66	2,504.42	2,198.08	1,848.12	1,844.63	↘0.2%	↘ 63.6%
	Purchased electricity (streetlighting)	9,526.37	4,907.04	3,025.12	2,335.85	2,125.40	1,755.70	1,814.25	↗ 3.3%	↘ 81.0%
	Total scope 2	**14,598.41**	**8,755.72**	**6,213.78**	**4,840.27**	**4,323.48**	**3,603.82**	**3,658.88**	↘ 1.5%	↘ 74.9%
Scope 3	Purchased goods and services	NA	NA	33,712.22	51,886.21	73,018.29	36,941.25	62,323.65	↗ 68.7%	NA
	Water supply and treatment	47.61	79.10	81.03	61.78	28.81	25.66	22.57	↘ 12.0%	↘ 52.6%
	Fuel- and energy-related activities	4,976.24	3,296.55	2,502.83	2,177.85	2,734.44	2,326.91	2180.85	↘ 6.3%	↘ 56.2%
	Business travel	236.64	282.36	280.86	151.70	218.82	235.20	326.80	↗ 38.9%	↗38.1%
	Employee commuting	NA	2,849.35	3,288.32	2,803.98	2,967.50	2,865.80	1918.88	↘33.0%	NA
	Leased assets	13,993.03	11,400.43	10,776.90	9,164.23	9,076.84	8,004.95	7,644.68	↘ 4.5%	↘ 45.4%
	Total scope 3[3]	**NA**	**NA**	**50,642.16**	**66,245.75**	**88,044.74**	**50,400.28**	**74,417.48**	↗ 47.7%	NA

Totals	**Total scope 1 & 2**	**20,159 .98**	**14,879 .85**	**12,024. 77**	**10,636. 91**	**9,791.6 5**	**8,757.7 5**	**8,327.6 7**	↘ 4.9%	↘ 58.7%
	Total scope 1, 2 & 3[1]	**NA**	**NA**	**62,666. 93**	**76,882. 66**	**97,836. 39**	**59,158. 03**	**82,745. 15**	↗39.9 %	NA

[1] Calculations for emissions from the vehicle fleet have been amended since the 2021/22 annual carbon report and the calculation is now based on direct fuel consumption instead of mileage. This is more accurate although has led to emissions from the fleet appearing higher than in previous reports.

[2] For the 2023/24 financial year, SCAS has been moved to the Council's operations (scope 1 and 2 emissions), on the basis that SCAS is a trading body of the Council, along with the Port's Capstan House / the Gatehouse / and Port Control.

[3] Some scope 3 emissions show to have increased over time, due to some datasets not being fully available for previous years (purchased goods and services, employee commuting and business travel). The Council is continuing to build and refine systems for data collection.

1.2. City of Sunderland – Overview of emissions

1.2.1. The Tyndall Centre has provided science-based recommendations for Sunderland to contribute a 'fair share' to the Paris Agreement 2015, advising an interim target of a 16.1% reduction in annual citywide carbon emissions for the period 2015-2020, followed by an annual reduction of 14.4% from 2020 onwards. This will allow Sunderland to stay within the citywide carbon budget of 8.2 million tonnes for the period 2020-2100, which is aligned with the goals from the Paris Agreement. Aligned with the Tyndall Centre carbon budget, the Tyndall Centre also provide recommended interim targets – including base year decarbonisation targets and interim 5-yearly carbon budget targets. The current recommended interim targets for Sunderland, aligned with a 14.4% annual reduction in citywide emissions and a carbon budget of 8.2 $MtCO_2$ between 2020 – 2100, are to reduce CO_2 emissions by 61.5% by 2025 based on 2015 levels and to stay within a carbon budget of 2.8 $MtCO_2$ between 2023 – 2027.

1.2.2. In 2022, Sunderland emitted a net 1,046,145 tCO_2 (within the scope of influence for the local authority), representing a 4.9% decrease from 2021 levels. Emissions were heavily influenced by the COVID-19 pandemic in 2020, which caused a significant temporary reduction in citywide emissions during the calendar year (2020). Emissions in 2022 were 11.7% lower than 2019 levels (the most recent year data is available where emissions were not impacted by the COVID-19 pandemic). Against the 2015 citywide baseline, annual citywide emissions in 2022 have reduced by 27%. Although Sunderland exceeded its interim recommended science-based target of a 16.1% reduction between 2015 – 2020, Sunderland is not currently on track to meet the second recommended interim citywide decarbonisation target of 61.5% by 2025, based on a 2015 baseline. The city must therefore reduce annual emissions rapidly over the forthcoming years.

1.2.3. Due to targets being exceeded in previous years, Sunderland has met its first interim recommended 5-year carbon budget period of 5.8 $MtCO_2$ between 2018 – 2022 (aligned with the carbon budget of 8.2 $MtCO_2$ between 2020 – 2100). Citywide decarbonisation progress is shown in figure 2.

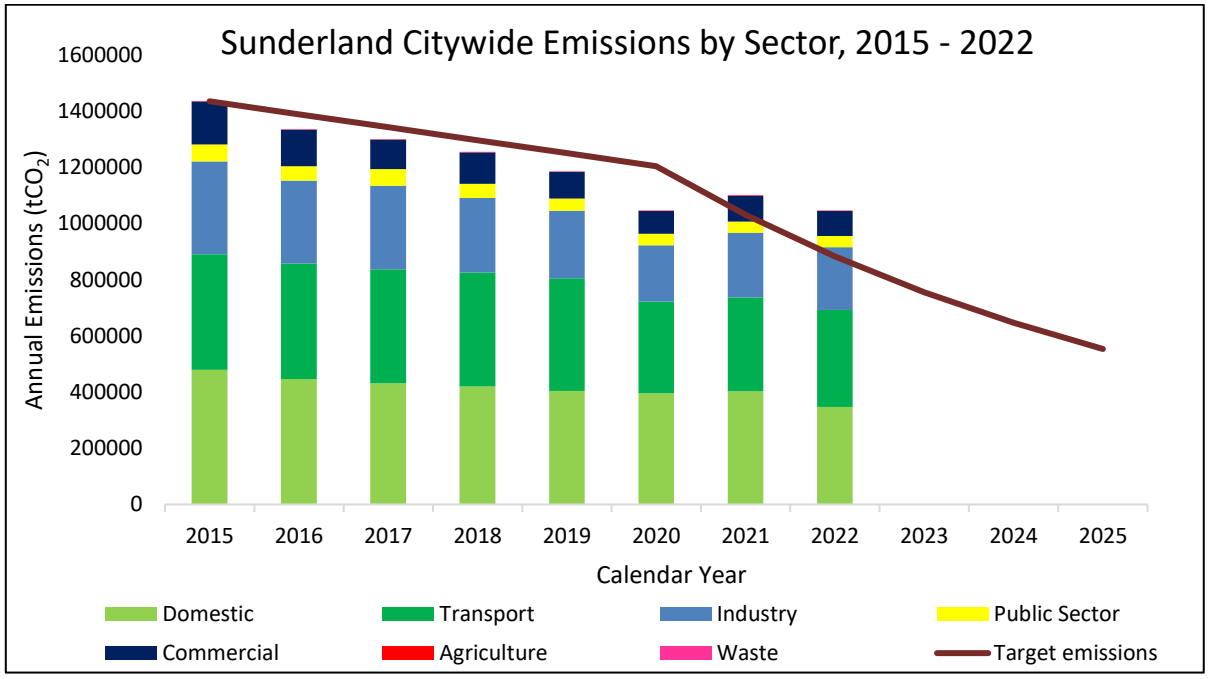


Figure 2 - Sunderland Citywide Long Term Carbon Reduction Targets

1.2.4. Figures 2&3 shows how citywide emissions per sector have changed since the previous year and the 2015 baseline. Emissions from all sectors decreased in 2022 compared with the 2021 calendar year, except for waste management (which remained the same) and transport (which increased). Emissions from all sectors have decreased since the 2015 city baseline, except for agriculture. Some sectors are undergoing emissions reduction at much higher rates than other sectors in the city. Domestic energy and transport have historically been the two major emitters of CO_2 in Sunderland (a pattern which continued this year) and accounted for over two thirds of annual citywide CO_2 emissions in 2022. During 2020 and 2021, domestic energy overtook transport as the main source of CO_2 emissions in Sunderland due to COVID-19 restrictions creating lower travel rates and people spending more time at home. While domestic energy has remained the highest emitter in 2022, transport emissions have increased post COVID-19. This was expected to a certain extent as people increasingly returned to their normal lives and / or established new travel patterns.

Figure 3 – Citywide emissions for 2022 (tCO_2e) and trends per sector since 2021 and the 2015 baseline.

Sector	2022 Emissions	Trend since 2021 (previous year)	Trend since 2015 (baseline)
Industry	224,336	↘2.27%	↘32.03%
Commercial	88,869	↘2.72%	↘41.78%
Public	39,496	↘3.25%	↘34.35%
Domestic	347,606	↘13.75%	↘27.40%
Transport	344,340	↗3.11%	↘16.52%
Agriculture	1,226	↘9.12%	↗28.38%
Waste management	269	0.00%	↘0.37%

2. Global Context

2.1. The Climate Emergency and the Paris Agreement

2.1.1. Sunderland City Council declared a climate emergency in 2019. This declaration committed Sunderland to reduce its citywide emissions and help global temperature rise stay well below 2.0°C, pursuing 1.5°C by 2050, in-line with the Paris Agreement of 2015.

2.1.2. To understand what the Paris Agreement means for UK local authorities, science-based research was completed by the Tyndall Centre to calculate carbon budgets for each authority, which fit in line with the goals of the Paris Agreement. Through using the latest scientific consensus, the Tyndall Centre recommended that Sunderland:

a) stays within a maximum carbon budget of 8.2 million tonnes for the period 2020-2100.
b) initiates an immediate programme of CO_2 mitigation to deliver cuts in emissions averaging a minimum of -14.4% per year from 2020, to deliver a Paris-aligned carbon budget;
c) reaches zero or near zero carbon emissions by no later than 2040.

2.1.3. Figure 4 shows the advised carbon emissions reduction pathway for Sunderland, recommending a rapid reduction in annual citywide carbon emissions, particularly within the next decade. It was advised that by 2020, Sunderland should aim for a 16.1% reduction in CO_2 emissions, relative to 2015 levels. After 2020, it was advised by the Tyndall Centre that citywide carbon emissions should then reduce by 14.4% annually.

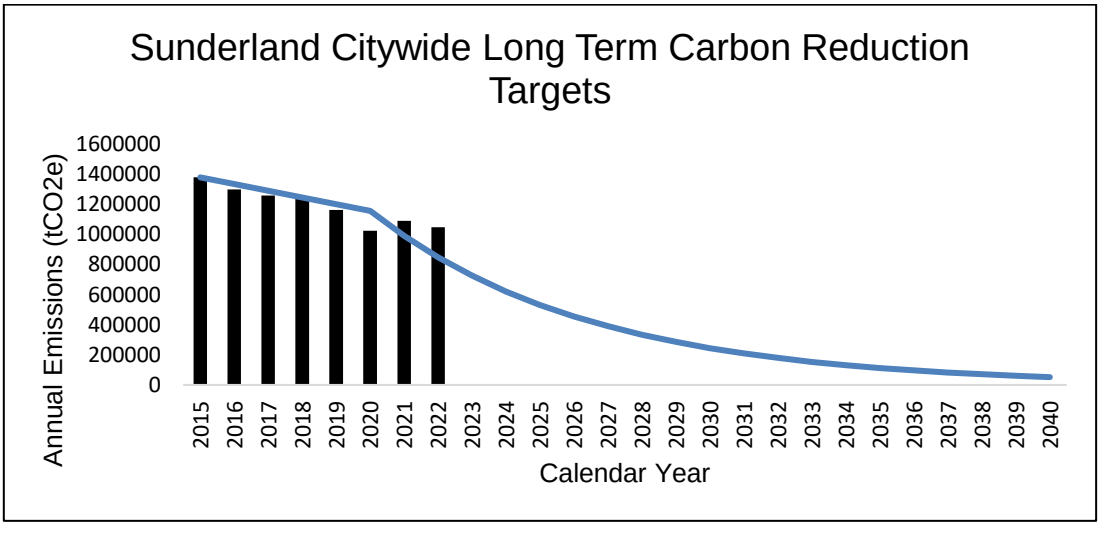


Figure 4 - Long term carbon reduction targets aligned with the carbon budget recommended by the Tyndall Centre (Tyndall Centre, 2023)

2.1.4. The Tyndall Centre report recommends that Sunderland stays within a recommended carbon budget of 8.2 million tonnes for the period 2020-2100

and, due to the data available at the time the report was published, 10.9 million tonnes for the period 2018-2100. The report informed the 2040 carbon neutrality target for the city. The Tyndall Centre also provides indicative recommended shorter-term carbon budgets and associated emissions reduction targets by a series of set dates to guide progress towards meeting the goals of Sunderland's long term carbon budget. These recommendations are displayed in figure 5 and 6. It is important to note that this carbon budget for the city does not include aviation and shipping, as they remain a part of the national carbon budget. The Land Use, Land Use Change and Forestry (LULUCF) sector, and wider greenhouse gas emissions are also excluded from this budget which focuses exclusively on carbon.

Figure 5 - Interim carbon budget recommendations for Sunderland (Tyndall Centre, 2024)

Carbon Budget Period	**Recommended Carbon Budget (Mt CO_2)**
2018 – 2022	5.8
2023 – 2027	2.8
2028 – 2032	1.3
2033 – 2037	0.6
2038 – 2042	0.3
2043 – 2047	0.1
2048 – 2100	0.1

Figure 6 - Interim 5-yearly annual emission reduction targets from a 2015 baseline recommended for Sunderland (Tyndall Centre, 2024)

Year	**Cumulative Reduction in Annual Emissions from 2015 baseline**
2020	16.1%
2025	61.5%
2030	82.4%
2035	91.9%
2040	96.3%
2045	98.3%
2050	99.2%

2.1.5. Progress in relation to the targets outlined in Figures 5 & 6 is set out more fully in section 5 of this report.

2.2. Low Carbon Framework – a city-wide strategic approach

2.2.1. In 2020/21 Sunderland's 2030 Shadow Board prepared the Low Carbon Framework which sets out the city-wide strategic approach for Sunderland to achieve citywide carbon neutrality by 2040. This was adopted by the Sunderland Partnership in December 2020. The Council endorsed the Low Carbon Framework in January 2021 and at the same time adopted its initial Low Carbon Action Plan, which set out the target for the Council to become

carbon neutral by 2030. The Council subsequently reviewed and updated its Low Carbon Action Plan, which was approved by Cabinet in July 2022, drawing on the increased knowledge and understanding of the Council's emissions which continues to be developed.

2.2.2. Sunderland's Low Carbon Framework sets out 7 strategic priorities, which are reflected in the City Council's Low Carbon Action Plan. These strategic priorities are: Our Behaviour; Our Policies and Operational Practices; An Energy Efficient Built Environment; Renewable Energy Generation and Storage; Low Carbon and Active Transport; A Green Economy; and Reducing Consumption and Waste.

2.2.3. In addition to the above, Sunderland City Council reaffirmed its commitments to UK100 by signing the renewed Net Zero pledge in January 2022 with the support of partners across the 2030 Shadow Board. Signatories of this pledge are working collaboratively to ensure net-zero targets are reached as soon as possible and signing the pledge further raises the ambition of Sunderland City Council's low carbon ambitions for its own operations to achieve net-zero greenhouse gas emissions by 2030 and for the wider city to achieve net-zero greenhouse gas emissions by 2045 or as soon as possible.

2.2.4. This report is the fourth annual report since the citywide Low Carbon Framework was endorsed and the Council's Low Carbon Action Plan was adopted. The report builds on the 2022/23 Annual Carbon Data Report which is published on the MySunderland website.

3. Additional Reporting

3.1. Quarterly Reporting

3.1.1. In addition to producing an annual report, partners of the 2030 Shadow Board are committed to establishing quarterly reporting for scope 1 and 2 emissions. The Council's most recent quarterly reports can be found on the MySunderland website.

3.2. CDP

3.2.1. In addition to this annual report, Sunderland City Council submitted its annual disclosure to CDP (formerly Carbon Disclosure Project) in September 2024. CDP is now widely viewed as the gold standard for environmental reporting, and disclosure allowed the city to report the same information as over 1,100 other cities around the world.

3.2.2. CDP provides in-depth feedback to cities on the quality of their disclosure, their low carbon ambitions and targets, and the actions they are taking both to mitigate and adapt to climate change providing useful insight into city-wide strengths and challenges. CDP also provide cities with an overall grade from D-A, with D being 'disclosure', C being 'awareness', B being 'management' and A being 'leadership'.

3.2.3. Feedback from the city's annual submissions to CDP will continue to inform future activity by the Council and its partners as appropriate and help to ensure continued focus on reducing emissions as quickly as possible.

3.2.4. The 2024 CDP disclosure builds upon three previous disclosures in 2021 - 2023. For all previous disclosures Sunderland received a grade 'A' and, in 2023, was recognised as a global leader in climate change action and reporting. Sunderland is currently 1 of 23 cities in the UK, and 1 of 120 globally, to hold CDP leadership status.

3.3 WWF One Planet City Challenge – National Winner

3.3.1 As a result of Sunderland's CDP submission the city is then automatically eligible to enter the WWF One Planet City Challenge. In 2023, Sunderland was a national finalist of the competition, and therefore also invited to participate in the 'We Love Cities' campaign in October 2024.

3.3.2 'We Love Cities' is a public engagement campaign that allows people across the world to express support for sustainable urban development by voting for their favourite finalist from WWFs One Planet City Challenge and posting improvement suggestions for these cities.

3.3.3 The central aim of the campaign is to:

- inspire and raise awareness for the sustainability progress being made in cities;
- give the general public an opportunity to celebrate, vote and upgrade their city through making suggestions to decision makers;
- reward communities and strengthen the bond between the public and decision makers.

3.3.4 Sunderland developed a communications plan to ensure the campaign was widely shared in a range of formats and promoted other activities to sit alongside it (such as school posted competitions with finalists displayed around the city). Sunderland also worked with a diverse range of partners to ensure maximum engagement in the campaign, including the Environmental, Green and Sustainable (EGS) group. The campaign was also presented at the 2030 Shadow Board with partners from all sectors committed to its rollout.

3.3.5 Leading environmental charity World Wild Fund for Nature (WWF) has also named Sunderland as one of the cities leading the global effort to combat climate change. The OPCC is one of the largest and longest-running climate challenges for local governments in the world. Since its inception in 2011, it has been highlighting leading examples of climate mitigation and adaptation from cities around the world.

3.3.8 Over 350 local governments from nearly 50 countries participated in this year's competition, with the jury ranking cities based upon:

- Alignment of cities' targets with the Paris Agreement
- Inclusion of a well-balanced climate action plan to support achieving stated goals
- Coherence in climate action strategies
- Mainstreaming of climate action in the city administration, as well as reinforcement through stakeholder dialogue
- Leadership in terms of being open and innovative, and aiming to influence climate action beyond the city's own borders.

3.3.9 The WWF jury found Sunderland's approach to climate action to be ambitious, multi-dimensional and well-balanced, scoring positively across all sectors.

4. Sunderland City Council - Carbon footprint

4.1. Background

4.1.1. Sunderland City Council is working to measure and report greenhouse gas emissions in-line with the Greenhouse Gas Protocol Corporate Standard. The Council's emissions are therefore categorised into three scopes:

- Scope 1 emissions refer to direct emissions from owned or controlled sources, for example the combustion of fuel;
- Scope 2 emissions include emissions from the generation of purchased energy, for example electricity purchased from the National Grid; and
- Scope 3 emissions refer to all indirect emissions which occur in the value chain of a reporting company, for example employee commuting and emissions from purchased goods.

4.1.2. The Council keeps under review its organisational boundary for carbon accounting and reporting, including assets within scope for the 2030 operational (Council scope 1 and 2), value chain (Council scope 3), and 2040 citywide carbon-neutral targets.

4.1.3. Prior to the 2023/24 financial year, the Council accounted for carbon emissions in a different way for Together for Children (TfC) and Sunderland Care and Support (SCAS) as property / facilities budgets were set up differently for the two Council-owned companies. Originally, the Council categorised its own assets as well as Together for Children (TfC) as scope 1 and 2 as the budget for property / facilities management was held centrally by the Council. The Council's value chain / scope 3 boundary at that stage included Sunderland Care and Support (SCAS), alongside fire stations, schools and vacant assets, reflecting that SCAS held its own property / facilities budgets and the Council does not control the budget spend in these cases, and therefore has less direct influence on reducing these emissions.

4.1.4. For the 2023/24 financial year onwards, SCAS has been moved to be included in the Council's operations (scope 1 and 2 emissions), on the basis that SCAS is a trading body of the Council, and the decision has been made that SCAS and TfC should be treated the same with both now aiming to achieve carbon neutrality by 2030, in line with the Council's target.

4.1.5. With regards to the Port of Sunderland, all portfolio assets were originally classed as being part of the Council. More detailed analysis of energy supplies and consumption at the Port has become possible over time as the Council has continued to build its knowledge of emissions sources. From 2023/24 onwards, therefore, the Council will consider Capstan House / the Gatehouse / and Port Control as Council scope 1 and 2 emissions with these facilities being within the scope of the Council's 2030 carbon-neutral target. This decision is based

on the Council's ownership of these facilities and their energy consumption, irrespective of emissions from businesses operating within the Port. All other energy consumption within the Port will be classified as scope 3 emissions from downstream leased assets, falling outside the Council's carbon-neutral 2030 target but within the 2040 citywide carbon neutral target. This is because these assets are leased to other companies, and emissions from them are considered operational emissions for the lessee companies.

4.1.6. The Council's scope 1 and 2 emissions from 2023/24 will therefore consist of Council, TFC, SCAS and defined Port assets (core operations) including:

- Gas consumption in buildings
- Liquid fuels for the vehicle fleet
- Generation of purchased electricity for streetlighting in the city
- Generation of purchased electricity in buildings

4.1.7. The Council reports on the following sources of scope 3 emissions:

- Purchased goods and services
- Water supply and treatment
- Energy- and fuel-related activities (including electricity transmission & distribution in addition to well-to-tank emissions)
- Business travel (including air, rail, grey fleet and hotels)
- Leased assets (including energy and fuel consumption for schools, fire stations, some vacant assets and the Port outside of the Council's direct influence).
- Employee commuting and working from home emissions

4.1.8. In line with the changes to the organisational boundary for the 2023/24 financial year, the baseline has been reevaluated for the purpose of consistency.

4.1.9. There are several likely sources of emissions currently excluded from the Council's emissions inventory. Fugitive emissions (for example, from refrigerant gases, air conditioning and heat pumps) are currently excluded from scope 1 due to data not currently being available. This may be considered in the future, although it is anticipated that emissions from this source will have a minimal impact on the Council's overall footprint. The Council is aiming to continually develop its emissions inventory, to be able to provide a more complete picture of our performance each year. Where this results in amendments to figures reported in previous years (increases or decreases), these will be captured and records updated for accuracy and transparency.

4.2 City Council - Greenhouse Gas Emissions Inventory

4.2.1 Figure 7 sets out Sunderland City Council's greenhouse gas emissions across each of the areas on which data is currently reported. Historically, it shows that

scope 1 emissions have generally been declining at a slow rate (with 2023/24 levels finishing 16.1% below the 2017/18 baseline). Scope 2 emissions declined year-on-year from the 2017/18 baseline up to and including 2022/23. However, scope 2 emissions increased by 1.5% in 2023/24. Although less electricity was consumed in 2023/24 than 2022/23, this was due to a 7% increase in the average carbon intensity of UK electricity generation. This reflects the extent to which decarbonisation of the National Grid plays a key role in accelerating reduction of Scope 2 emissions as referenced in 4.3.2.

4.2.2 The Council is also continuing to develop its scope 3 datasets, in line with the Greenhouse Gas Protocol. Based on the current data available, scope 3 emissions for the Council are estimated to have accounted for 74,417 tCO_2e (89.94% of overall emissions, increasing from 50,400.28 which was equivalent to 85% in 2022/23). Focus on scope 3 emission sources (our indirect emissions) will continue to increase as we move forward, to bring our value chain with us on our Low Carbon journey and achieve an increasingly robust monitoring process.

Figure 7 – Sunderland City Council's Greenhouse Gas Emissions Inventory, 2023/24

		Annual Emissions (tCO_2e)								
Scope	**Source**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**Trend from previous year**	**Trend from base year**
Scope 1[2]	Gaseous fuels	3,004.73	3,152.08	3,241.08	3,241.93	2,851.78	2,584.09	2,079.73	↘19.5%	↘ 30.8%
	Liquid fuels (fleet)	2,556.84	2,972.05	2,569.91	2,554.71	2,616.39	2,569.84	2,589.06	↗0.8%	↗ 1.3%
	Total scope 1	**5,561.57**	**6,124.13**	**5,810.99**	**5,796.64**	**5,468.17**	**5,153.93**	**4,668.79**	**↘9.4%**	↘ 16.1%
Scope 2	Purchased electricity (buildings)	5,072.04	3,848.68	3,188.66	2,504.42	2,198.08	1,848.12	1,844.63	↘0.2%	↘ 63.6%
	Purchased electricity (streetlighting)	9,526.37	4,907.04	3,025.12	2,335.85	2,125.40	1,755.70	1,814.25	↗ 3.3%	↘ 81.0%
	Total scope 2	**14,598.41**	**8,755.72**	**6,213.78**	**4,840.27**	**4,323.48**	**3,603.82**	**3,658.88**	↘ 1.5%	↘ 74.9%
Scope 3	Purchased goods and services	NA	NA	33,712.22	51,886.21	73,018.29	36,941.25	62,323.65	↗ 68.7%	NA
	Water supply and treatment	47.61	79.10	81.03	61.78	28.81	25.66	22.57	↘ 12.0%	↘ 52.6%
	Fuel- and energy-related activities	4,976.24	3,296.55	2,502.83	2,177.85	2,734.44	2,326.91	2180.85	↘ 6.3%	↘ 56.2%
	Business travel	236.64	282.36	280.86	151.70	218.82	235.20	326.80	↗ 38.9%	↗38.1%
	Employee commuting	NA	2,849.35	3,288.32	2,803.98	2,967.50	2,865.80	1918.88	↘33.0%	NA
	Leased assets	13,993.03	11,400.43	10,776.90	9,164.23	9,076.84	8,004.95	7,644.68	↘ 4.5%	↘ 45.4%
	Total scope 3[3]	**NA**	**NA**	**50,642.16**	**66,245.75**	**88,044.74**	**50,400.28**	**74,417.48**	↗ 47.7%	NA
Totals	**Total scope 1 & 2**	**20,159.98**	**14,879.85**	**12,024.77**	**10,636.91**	**9,791.65**	**8,757.75**	**8,327.67**	↘ 4.9%	↘ 58.7%
	Total scope 1, 2 & 3[1]	**NA**	**NA**	**62,666.93**	**76,882.66**	**97,836.39**	**59,158.03**	**82,745.15**	↗39.9%	NA

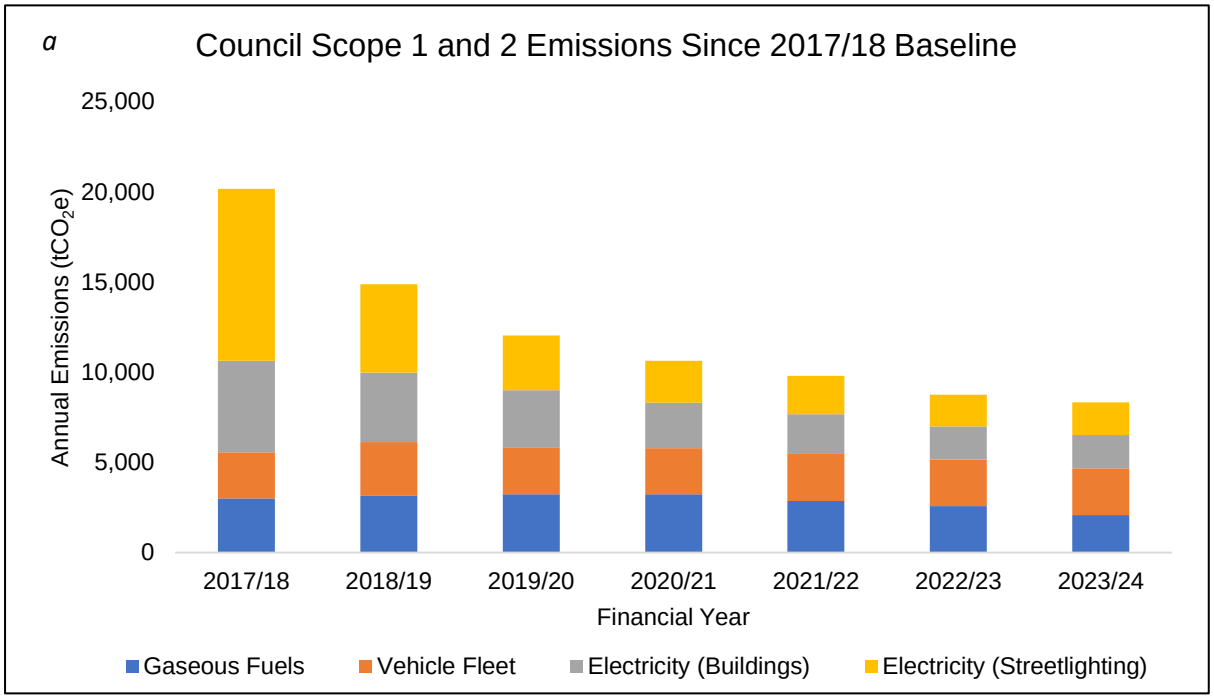
[1] Calculations for emissions from the vehicle fleet have been amended since the 2021/22 annual carbon report and the calculation is now based on direct fuel consumption instead of mileage. This is more accurate although has led to emissions from the fleet appearing higher than in previous reports.

[2] For the 2023/24 financial year, SCAS has been moved to the Council's operations (scope 1 and 2 emissions), on the basis that SCAS is a trading body of the Council, along with the Port's Capstan House / the Gatehouse / and Port Control.

[3] Some scope 3 emissions show to have increased over time, due to some datasets not being fully available for previous years (purchased goods and services, employee commuting and business travel). The Council is continuing to build and refine systems for data collection.

4.3 Scope 1 and 2 Emissions

4.3.1 Figure 7 shows the trend for the Council's scope 1 and 2 emissions since the 2017/18 baseline. Figure 8 over the page shows each source of the Council's scope 1 and 2 emissions as a percentage of overall scope 1 and 2 emissions.



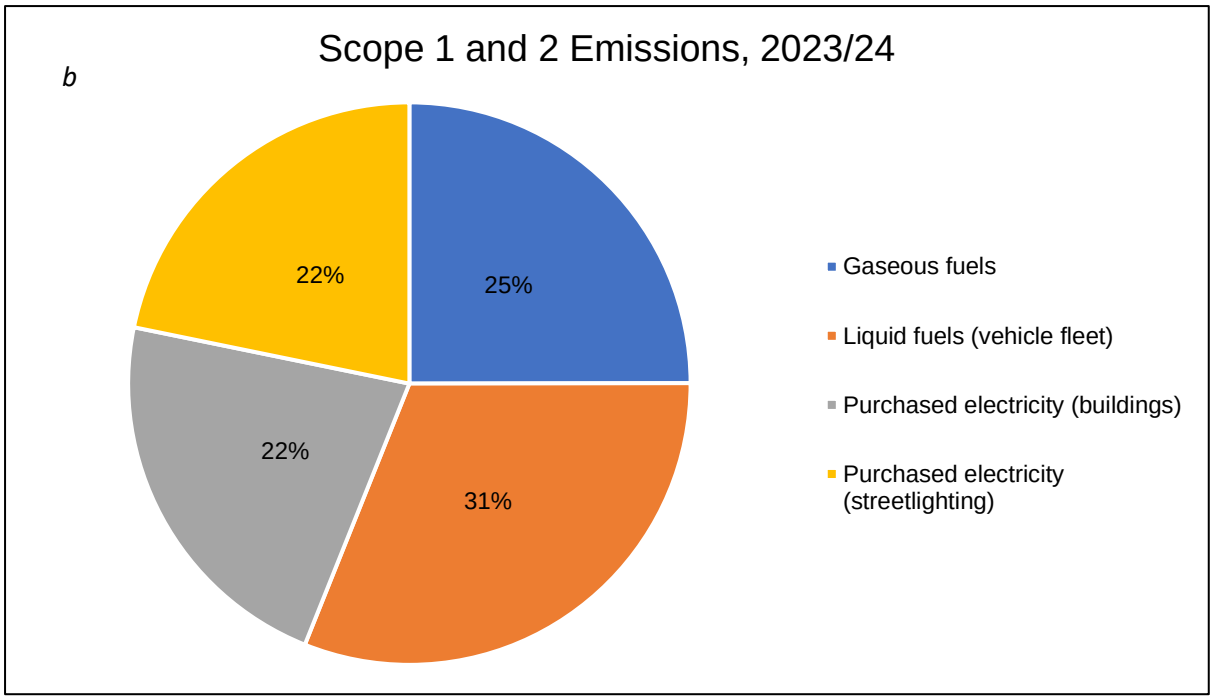


Figure 8 – Scope 1 and 2 emissions by category since the 2017/18 baseline *(a)* and each category as a percentage of the overall Scope 1 and 2 emissions for 2023/24 *(b)*.

4.3.2 As set out in the overview within Section 1, annual scope 1 and 2 emissions reduced by 430.08 tCO_2e (4.9%) from 2022/23 to 2023/24. In recent years, roughly half of the carbon reduction achieved has been due to the decarbonisation of electricity from the National Grid. This year, there has been limited grid decarbonisation meaning all reductions have been due to reduced consumption and increased efficiency. It is expected that the National Grid will continue to decarbonise electricity in future years.

4.3.3 The main source of scope 1 and 2 emissions from Council operations in 2023/24 was liquid fuel for the vehicle fleet, emitting 2,589 tCO_2e. The vehicle fleet overtook gas consumption as the primary source of the Council's operational greenhouse gas emissions this year. Furthermore, it is also the source which is decarbonising at the slowest rate.

4.3.4 The largest reductions in emissions from Council operations were from gas consumption, partially due to a change in the heating strategy, post COVID-19. The COVID-19 strategy required that all buildings were ventilated to a greater extent, and therefore heating was lost.

4.3.5 Gas consumption accounted for 25% of Council scope 1 and 2 emissions in the 2023/24 financial year, reducing from 30% in 2022/23. Bishopwearmouth Crematorium remains the largest consumer of gas across the Council's estate as shown in Figure 9. A small proportion of the Council's buildings account for a significant proportion of its gas consumption, with the top 10 sites emitting 73% of the Council's gas emissions in 2023/24, decreasing from 74% in

2022/23, and 80% from the top 7 in 2020/21 prior to the relocation from Civic Centre to City Hall.

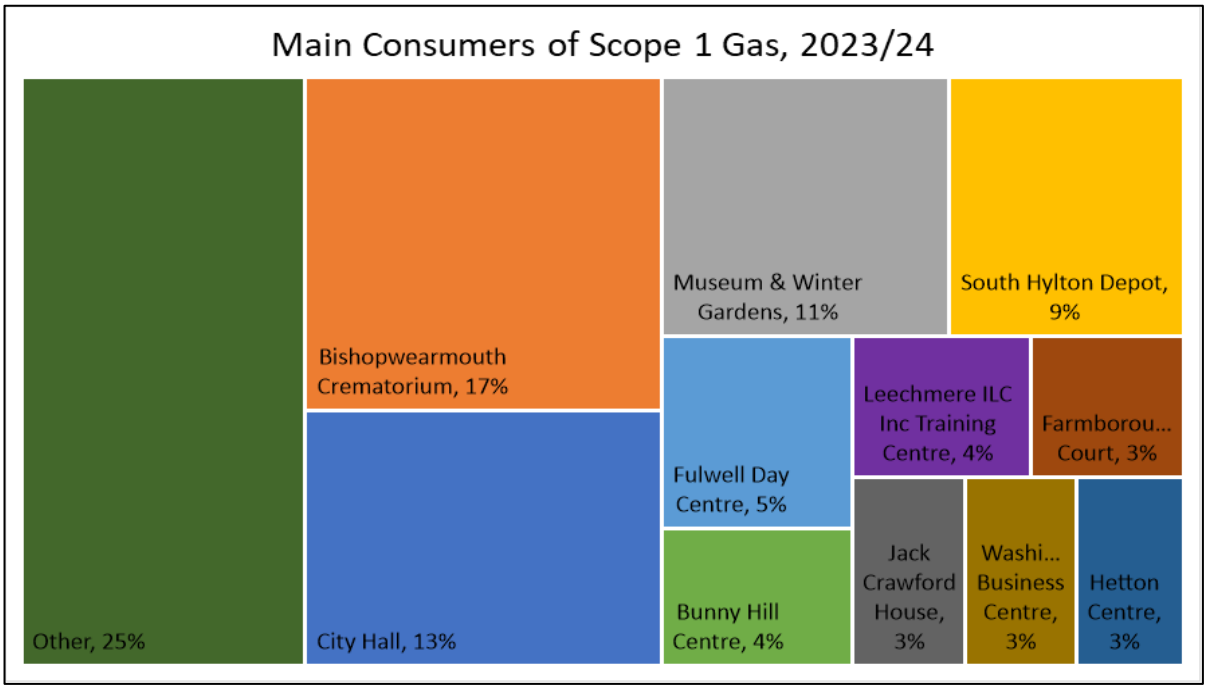


Figure 9 - Main consumers of scope 1 gas, 2023/24

4.3.6 Emissions levels from the vehicle fleet have been fluctuating in previous years and, in 2023/24, this was one of two sources of emissions to increase. Furthermore, due to greater reductions in overall emissions from gas and electricity since the 2017/18 baseline, the fleet has taken up a higher proportion of the Council's overall scope 1 and 2 emissions, accounting for 31% in 2023/24 compared to 13% in 2017/18. As evidenced in figure 10, most emissions come from diesel HGVs which is a hard-to-treat emissions source. The challenge of decarbonising fleet is recognised in the City Council's Action Plan and the Council is currently reviewing wider EV strategy work to ensure fleet is appropriately considered, and to embed electrification and decarbonisation into lifecycle replacement planning as much as possible within the context of current technology strengths and financial constraints. It should be noted that emissions from electric vehicles within the Council's fleet are currently recorded elsewhere within scope 2 purchased electricity emissions and therefore not reflected in Figure 10 below. As the Council continues to improve data monitoring processes and more electric vehicles are purchased, it is hoped that

a figure for electric vehicles can be measured and reported separately in future years.

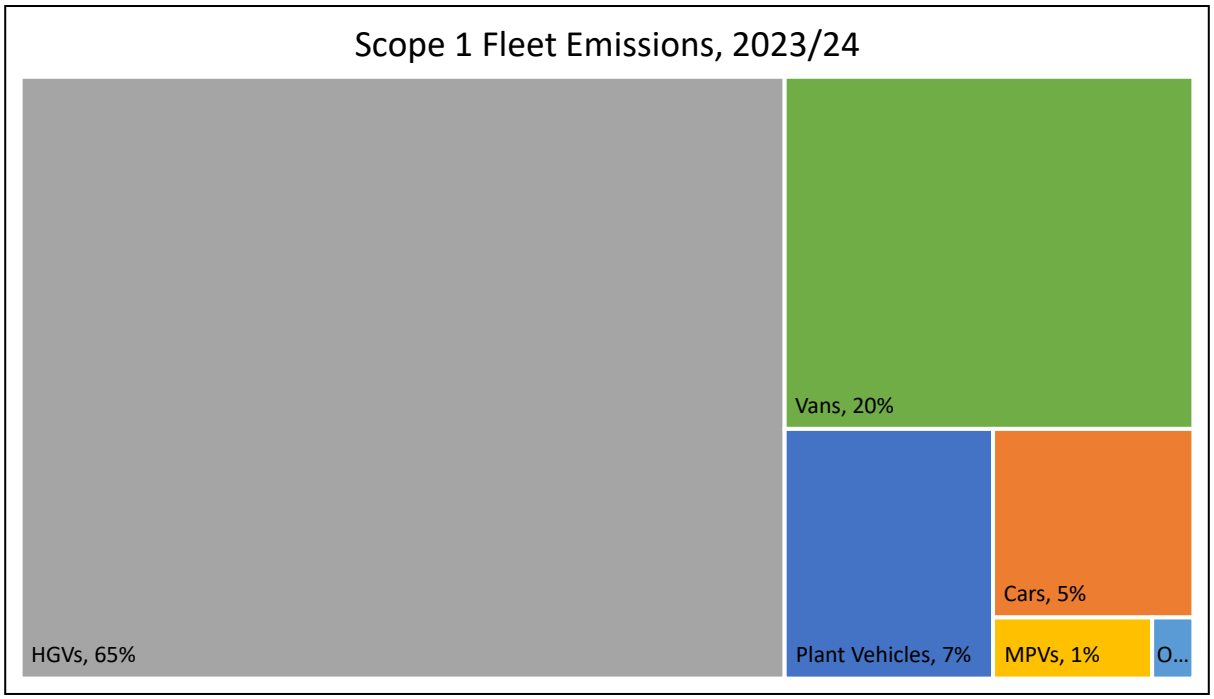


Figure 10 – Emissions from liquid fuels for the vehicle fleet by vehicle type, 2023/24

4.3.7 Before 2023/24, greenhouse gas emissions arising from the generation of purchased electricity had continuously reduced since 2017/18. This was partly due to the decarbonisation of the National Grid, and partly due to reduced energy consumption from both streetlighting and Council buildings. However, electricity became 7% more carbon intensive in the 2023/24 financial year, leading to a slight increase in greenhouse gas emissions electricity generation from streetlighting and a lower reduction in emissions from electricity generation for buildings. However, less energy was consumed in 2023/24 for both buildings and streetlights, and it is expected that reductions will continue in the future.

4.3.8 Electricity from streetlighting currently accounts for 22% of Council scope 1 and 2 emissions. Following the successful rollout of citywide LED streetlighting between 2016/17 - 2021/22, saving 21,000 MWh, and 4724 tCO_2e annually based on 2023 carbon intensity factors for electricity and transmission and distribution, the Council has progressed LED lighting to street lit signs. Further LED lighting upgrades to parks, associated buildings and traffic signals are ongoing and will deliver additional carbon and energy savings. Electricity from Council buildings also currently accounts for 22% of Council scope 1 and 2 emissions. As observed with gas, a small proportion of the Council's operational estate accounts for a large proportion of CO_2e emissions from electricity in buildings, with the top 10 sites accounting for 73% of CO_2e of the Council's

emissions from electricity. The main consumers of scope 2 electricity are shown in figure 11.

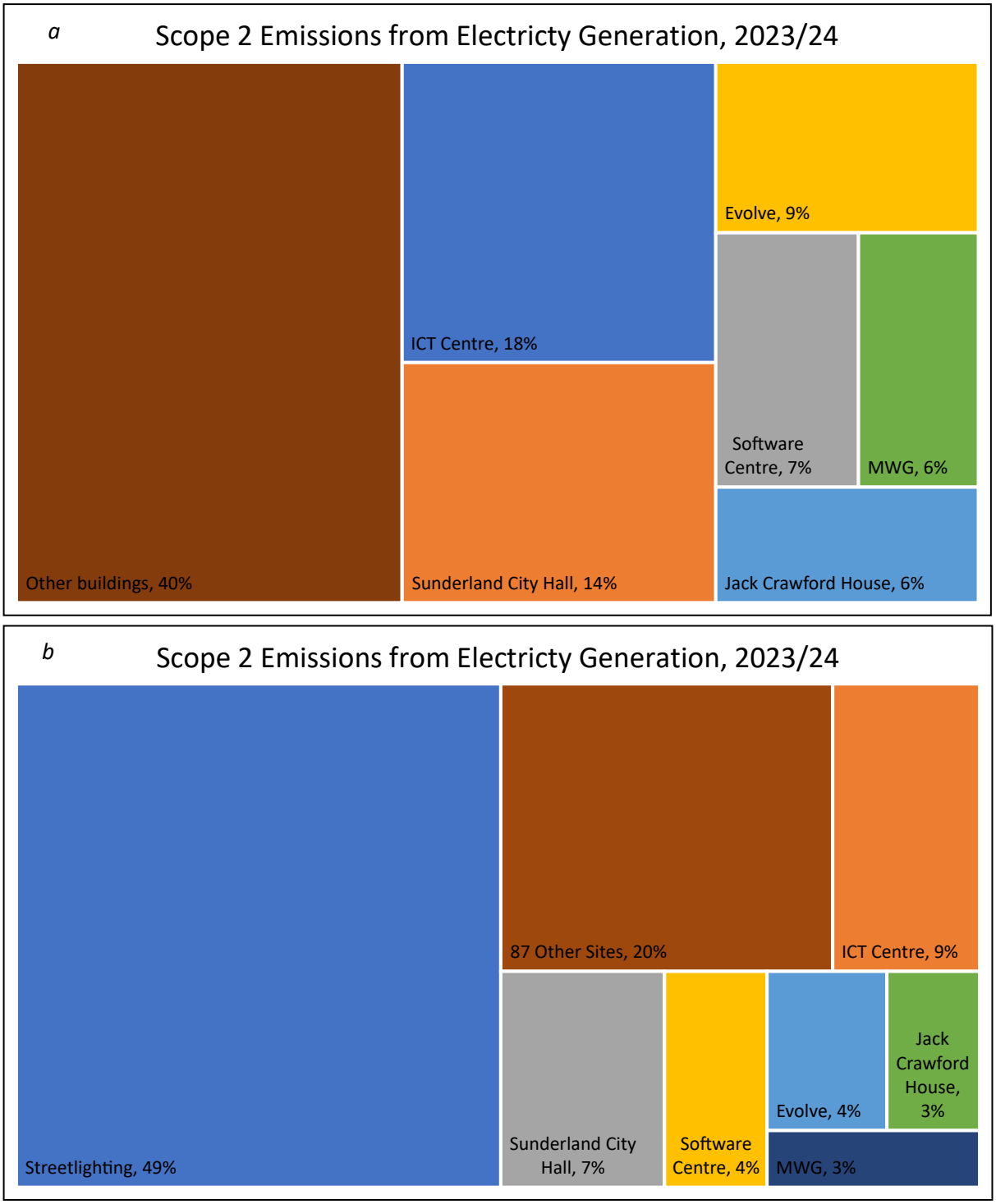


Figure 11 - Main consumers of scope 2 electricity, 2023/24, without streetlighting included (a) and with streetlighting (b).

4.4 Scope 3 Emissions

4.4.1 The Council is continuing work to develop its scope 3 inventory on an ongoing basis. For most companies and organisations, scope 3 emissions are much greater than the sum of their scope 1 and 2 emissions, however it is more challenging to collect accurate data and organisations generally have less control over them.

4.4.2 It is not currently mandatory to report on scope 3 emissions, however as the climate emergency becomes more urgent, it is likely that scope 3 legislation will become stricter in future years. It is also important to note that the majority of scope 3 emissions for the Council can also be classed as another organisation's scope 1 and 2 emissions, although this does not detract from the Council seeking to report them as good practice or its ambitions to address these emissions to reduce them to a minimum. The Council is continuing to develop its scope 3 inventory to ensure it can be as transparent as possible about the full picture of its carbon footprint, as we continue to develop and increase our access to data in relation to these emissions. This should increase our ability to drive change within our value chain. In addition to the Council having set a goal for carbon neutrality by 2030 across scope 1 and 2 emissions, the Council will work towards setting a reduction target for scope 3 emissions in the future.

4.4.3 The Council's scope 3 emissions are estimated to form 89.94% of overall emissions, as shown in figure 12. It is important to note that as work progresses to continue to reduce Scope 1 and 2 emissions, the relative percentage of emissions for which Scope 3 accounts is expected to continue to increase. Purchased goods and services make up most of the Council's estimated scope 3 emissions, accounting for over two-thirds of emissions. This is reflected in delivery of the Council's Action Plan through work underway with regional colleagues in relation to procurement.

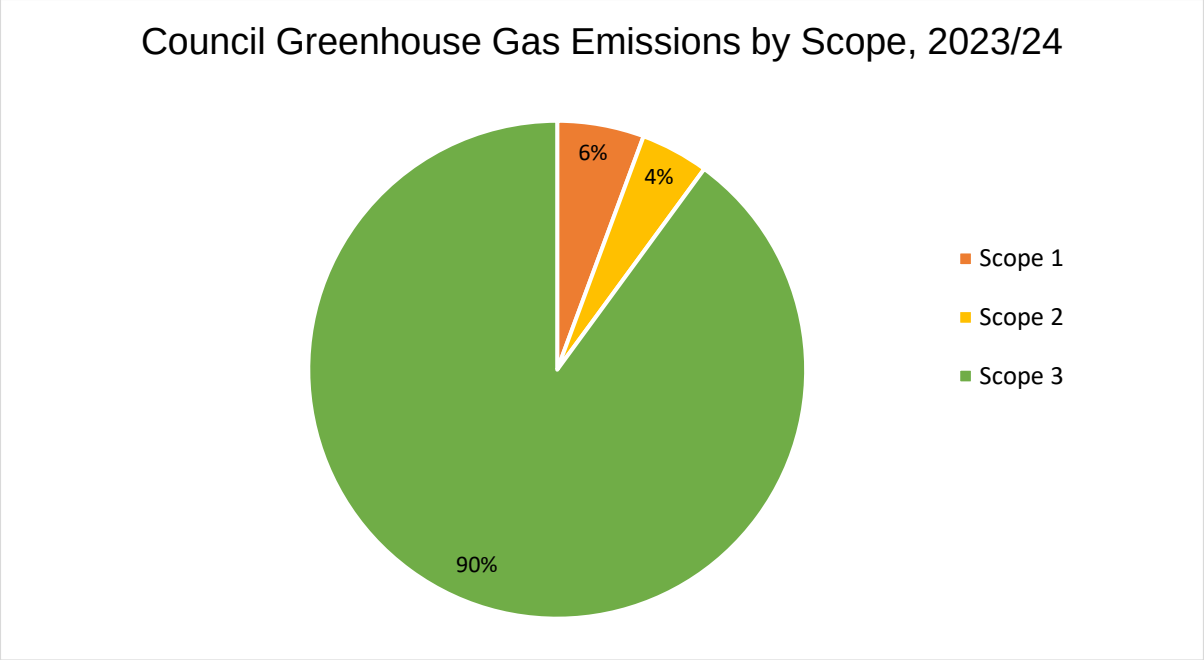


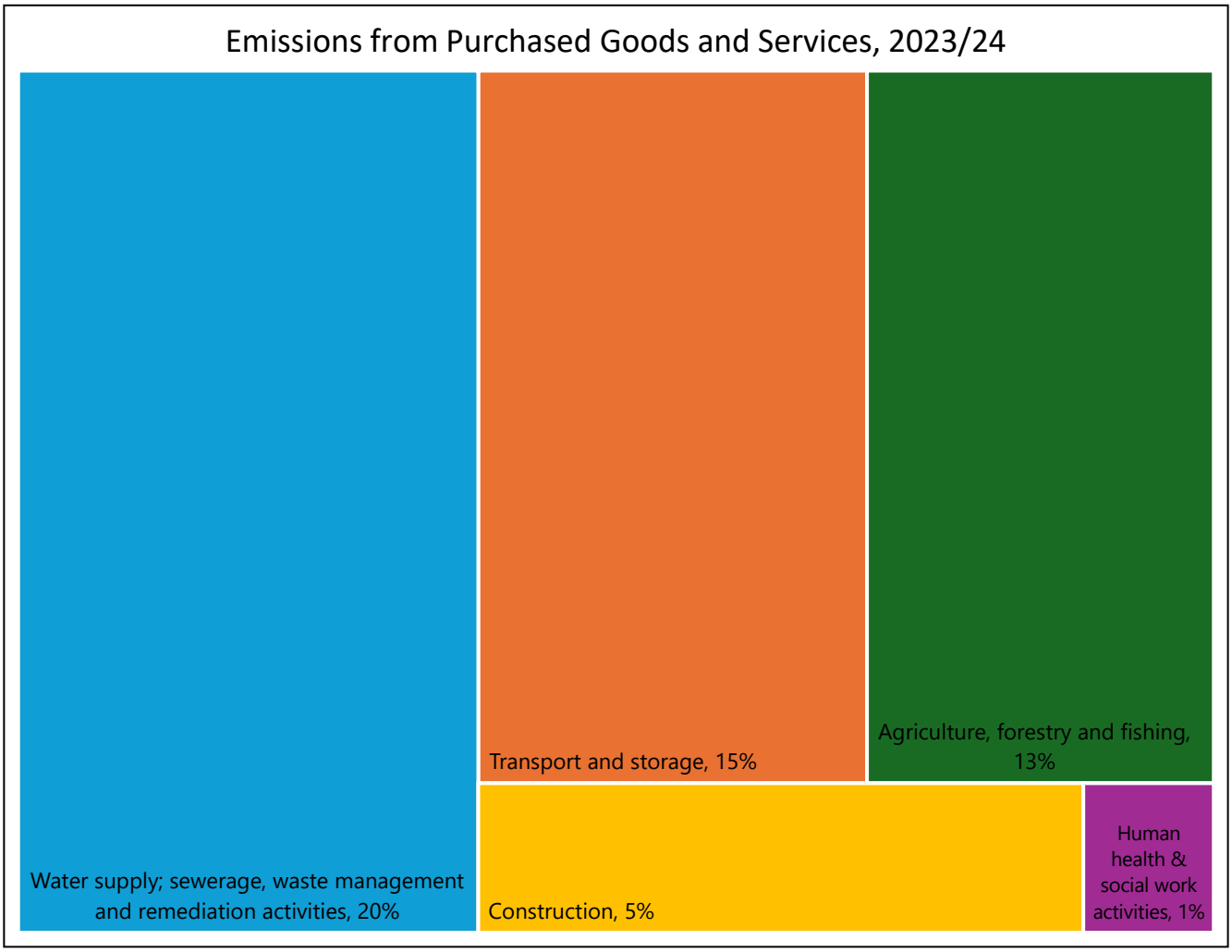
Figure 12 - Council greenhouse gas emissions by scope, 2023/24

4.4.4 The remainder of this section covers emissions for each of the Council's scope 3 categories in turn, setting out the key trends from 2017/18 to 2023/24.

4.4.5 Leased assets also contribute significantly to the Council's scope 3 emissions, due to purchased electricity generation and gas consumption in schools, fire stations and some vacant assets. Commuting and home working make up 2.5% of the Council's estimated scope 3 emissions, primarily due to the reliance on the private car for commuting. Fuel and energy-related activities make up 2.9% of the Council's scope 3 emissions, primarily due to well-to-tank emissions. Water supply and treatment and employee business travel make up the remaining 1% of scope 3 emissions. These emission sources are evaluated in more depth throughout this report.

4.4.6 Purchased goods and services are a significant source of indirect greenhouse gas emissions for the Council, accounting for 84% of the Council's estimated scope 3 emissions, and 75% of overall emissions (Scopes 1, 2 and 3 combined). Within that context, as shown in figure 13, a handful of carbon-intensive categories form a significant proportion of estimated emissions from purchased goods and services. These are shown separately in Figure 13 below, excluding energy related emissions (well to tank emissions, and emissions from leased assets which are shown in figures 14 and 15.

Figure 13 - Emissions from Purchased Goods and Services, 2023/24[2]



4.4.7 For many organisations, emissions from purchased goods are one of the main sources of scope 3 emissions. The Council estimated a baseline figure for purchased goods and services for the first time in 2020/21 using Environmentally Extended Input-Output data (EEIO). This method involves using spend data for the previous financial year and applying carbon intensity factors based on industry averages across different sectors. Although there are limitations to the EEIO data method, it has allowed us to provide an approximate estimation of the most carbon intensive areas, which is an important first step. One limitation of this method is that it produces figures which are highly influenced by spend and, consequently, this method may not therefore be as accurate as direct data from suppliers of purchased goods. Since 2020/21, the Council has procured specialist software, which allows the organisation to undertake this baseline process with more confidence and accuracy. As a result, the 2020/21 baseline figure for purchased goods and services has been disregarded due to uncertainties

[2] Emissions from purchased goods and services have been calculated by mapping the Council's annual spend against the 16 Standard Industrial Classification (SIC) codes from Companies House (Standard industrial classification of economic activities (SIC) - GOV.UK (www.gov.uk)).

over its reliability and the ability to accurately monitor progress against this as a baseline using comparable data.

4.4.8 Using the specialist software procured, the Council aims in the future to move towards a 'hybrid' approach, where spend data is gradually phased out by direct data from suppliers, beginning with the most carbon intensive sectors from the spend-based estimations. This will also provide a platform for the Council to liaise with these suppliers to seek to reduce their own carbon footprint. The Council's Low Carbon Team and Procurement Team will continue to work together closely, to seek to reduce carbon emissions within the purchased goods and services sector.

4.4.9 The leased assets category includes buildings identified as scope 3, classed as those which are in the Council's portfolio but not in its direct financial control. This includes schools and academies, nurseries, fire stations, assets leased at the Port of Sunderland and some vacant assets. SCAS was previously reported within this category but as of 2023/24 it is now classed as under the Council's financial control. Therefore, its fuel and electricity usage is counted within scope 1 and 2 rather than under leased assets. Emissions from leased assets continued to fall in the 2023/24 financial year, as shown in figures 14 and 15. Leased assets emissions from electricity generation decreased by 14% since the previous year, emissions from gas decreased by 12% although emissions from liquid fuels increased by 2%. Emissions related to related to schools decreased by 11%, emissions from fire stations decreased by 11%.

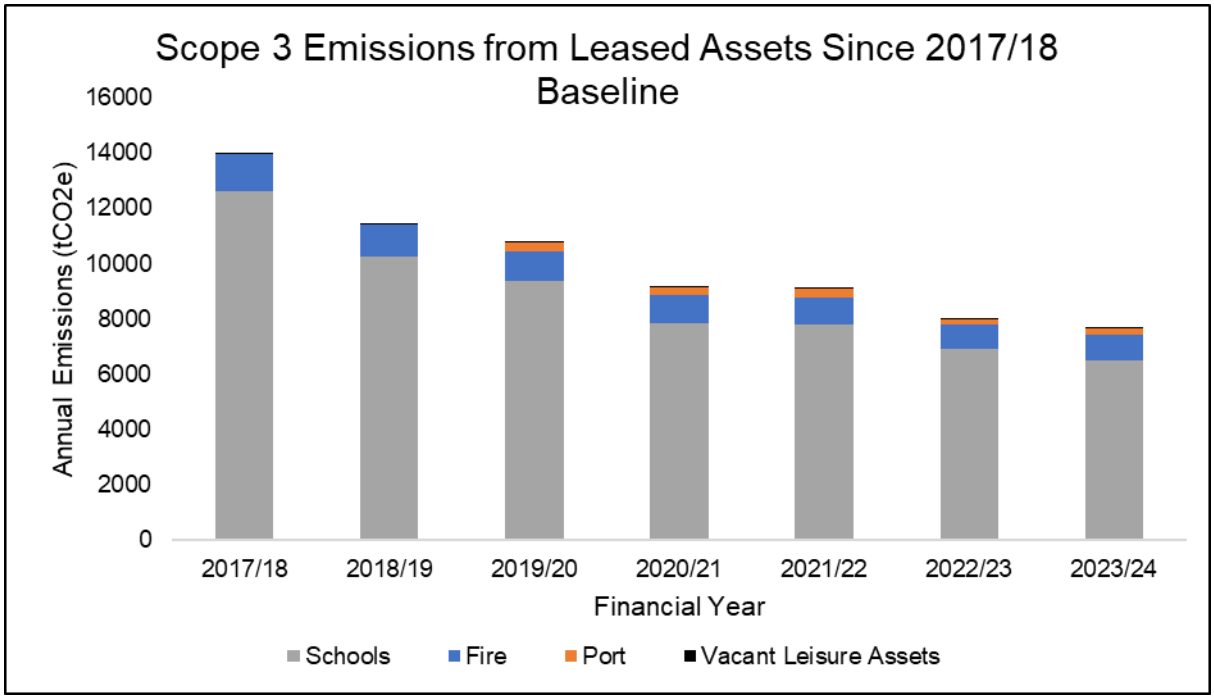


Figure 14 - Scope 3 emissions from leased assets.

[1]Data for the Port is not available before 2019/20.

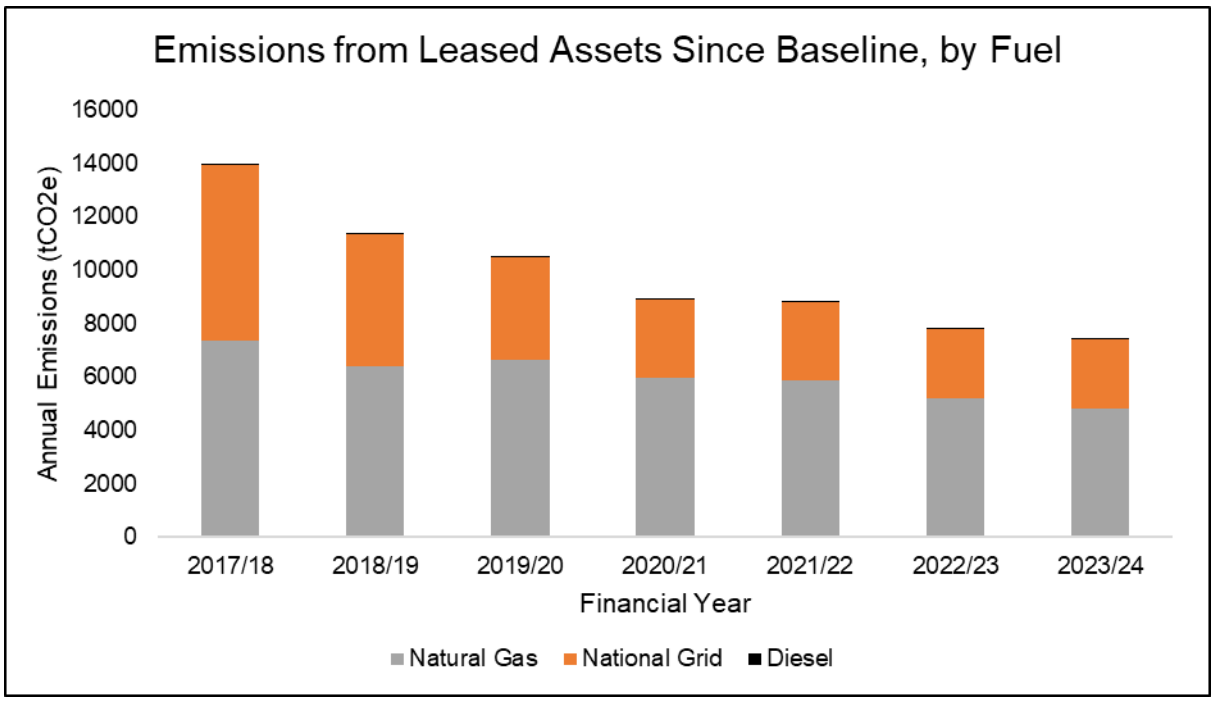


Figure 15 - Annual scope 3 emissions from leased assets, by fuel

4.4.10 Annual business travel emissions are shown in figure 16. Emissions from business travel have been increasing since 2020/21, which was the lowest point for emissions from this source across the previous 6 years and heavily linked to the COVID-19 pandemic, with people required to work from home. Once restrictions were lifted, more meetings have increasingly taken place in person and staff have had more freedom to travel between workplaces, events,

stakeholder and partner premises among other locations for work leading to increased distance travelled. The Council is continuing to build systems for collection of data on business travel and this increased data collection is reflected in the trends shown to date. We will continue to refine the data moving forward. Emissions from the Council's electric vehicle mobility hub is accounted for in scope 2 'purchased electricity' and use of these electric vehicles has the potential to replace some business travel mileage in grey fleet vehicles moving forward, replacing them with a less carbon intensive mode of travel.

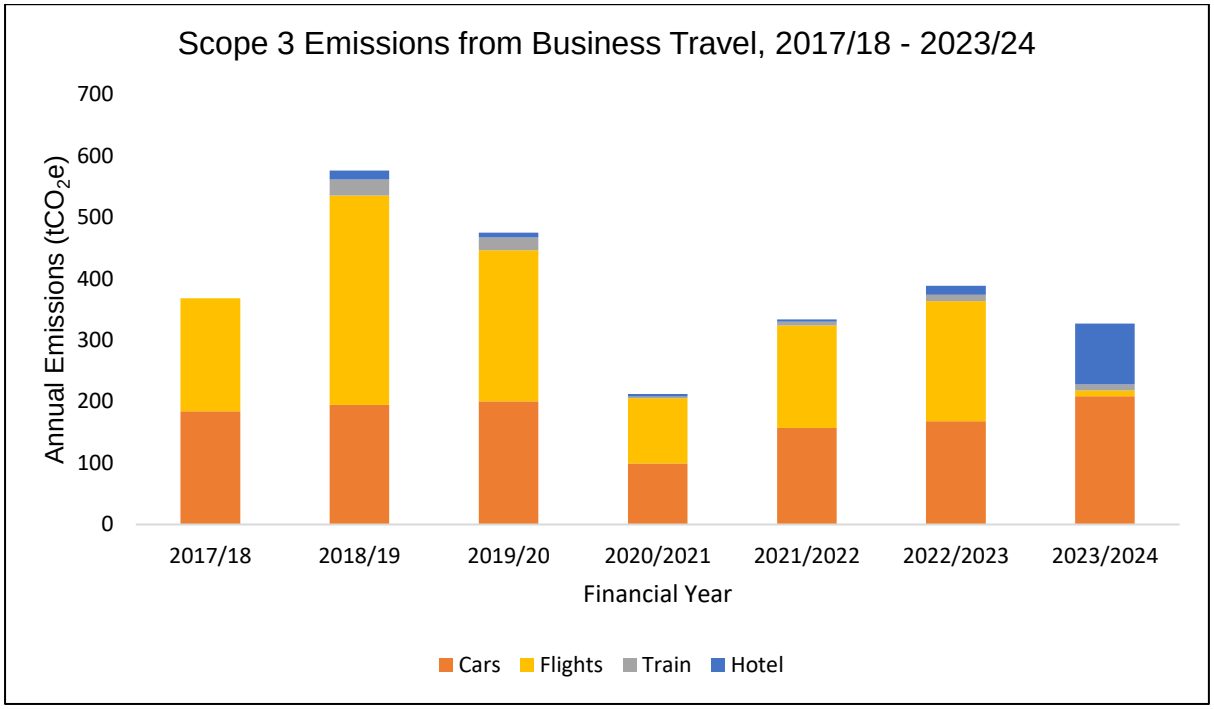


Figure 16 - Scope 3 emissions from business travel, 2017/18 - 2023/24

4.4.11 Emissions from fuel and energy-related activities include electricity transmission and distribution as well as well-to-tank emissions (all greenhouse gas emissions from the production, transportation, transformation and distribution of a particular fuel). Figure 17 shows that emissions from energy- and fuel-related activities steadily declined between 2017/18 and 2020/21, with a low peak during the COVID-19 pandemic. Emissions then increased in 2021/22 before beginning to reduce again in 2022/23. In 2023/24, emissions from energy- and fuel-related activities were 6.3% lower than in 2022/23, and 56.2% lower than the 2017/18 baseline. Each source of well-to-tank emissions has witnessed fluctuations in emissions. Emissions from electricity transmission and distribution have been continually declining, linked to the decarbonisation of the national grid.

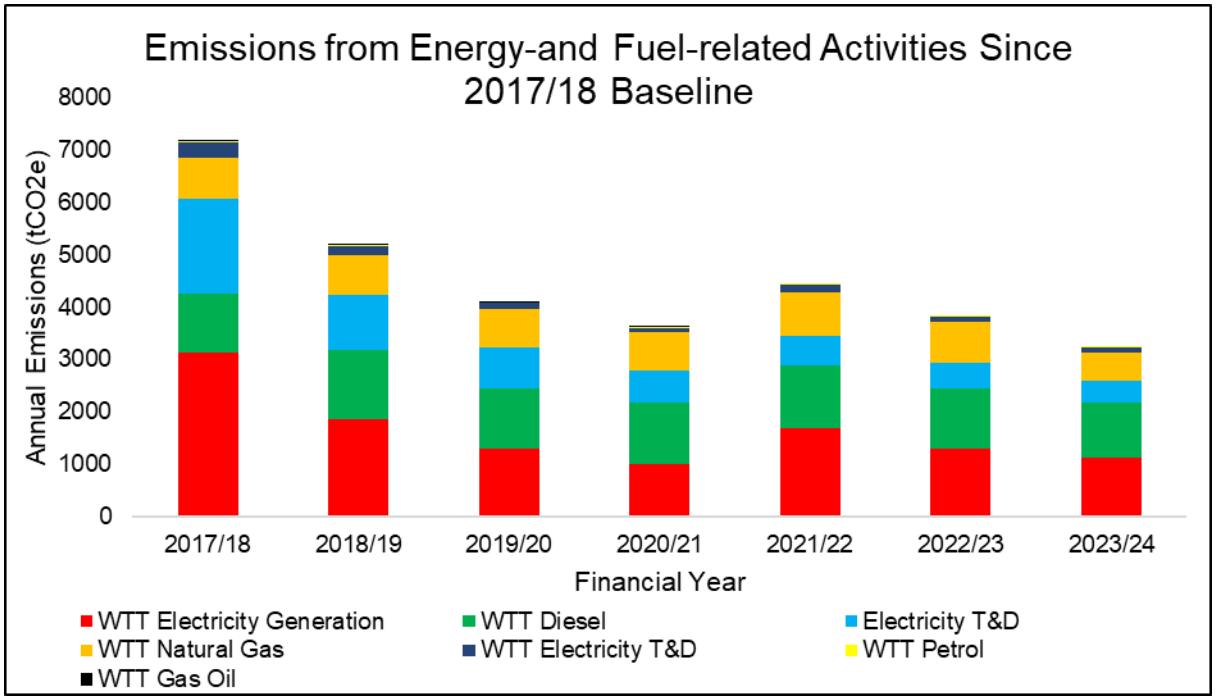


Figure 17 - Scope 3 emissions from energy- and fuel-related activities, 2017/18 - 2023/24

4.4.12 Emissions from employee commuting covers both the emissions from staff travel to and from work via various modes of transport as well as the emissions from home working as an alternative to commuting. In 2018/19, the Council did not estimate emissions from home working, as this would have reflected the working patterns of a very small number of colleagues. However, during the 2020/21 and 2021/22 financial years, most staff worked at home full time due to the COVID-19 pandemic, meaning it was therefore more appropriate to measure emissions from home working. The Council now analyses both home working and employee commuting emissions, in line with the hybrid working approach the Council has adopted since the pandemic. Figure 18 shows that emissions from employee commuting have been fluctuating since data was first recorded in 2018/19. However, since home working became a significant modal share within employee commuting (2020/21), annual emissions have been lower than years prior. This indicates home working will remain beneficial to the Council's carbon footprint unless the modal share of petrol and diesel cars for commuting is significantly reduced and replaced by active and low carbon transport including EVs and public transport.

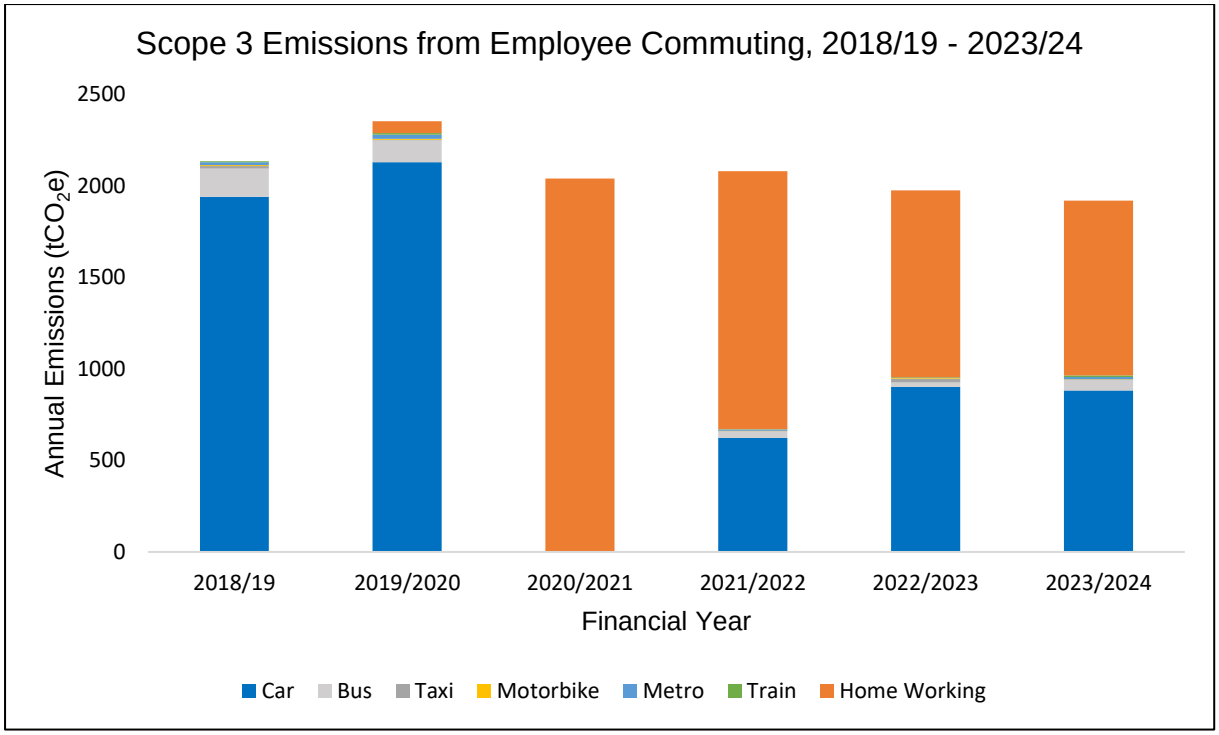


Figure 18 - Scope 3 emissions from employee commuting, 2018/19 - 2023/24

4.4.13 Figure 19 shows the annual emissions from water supply and treatment in Council buildings. Water-related emissions have been fluctuating in recent years, which is directly related to consumption. Since the COVID-19 pandemic, water consumption has decreased by from a high peak in 2019/20. This is largely influenced by the Council's move towards flexible and agile working, with many staff spending part of the week working from home.

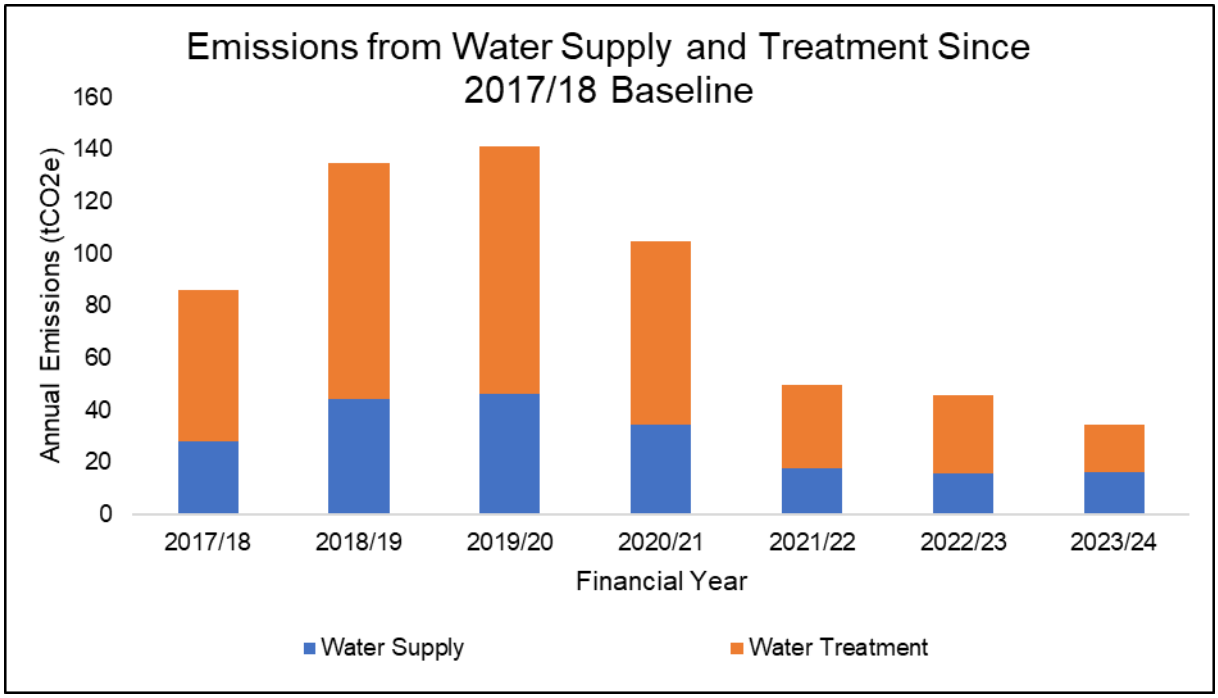


Figure 19- Scope 3 emissions from water supply and treatment, 2017/18 - 2023/24

4.4.14 Data relating to emissions from waste generated from within the Council's estate is currently not available. Pursuing the evolution of the Council's commercial waste & recycling service into a charge-by-weight collection model through its recent investment in new technology and digital functionality is a key priority. This initiative aims to provide improved value, and information, to the council and its trade customers, based on the weight and type of waste removed, and significantly incentivise improvements in recycling.

5 Sunderland Citywide Carbon Footprint

5.1. Overview

5.1.1 The 2022 Department for Energy Security and Net Zero (DESNZ) update for citywide emissions estimates was released in June 2024 and represents the most recent carbon emission data available at city level. The data shows that 1,046,145 tCO_2 were emitted within the scope of influence of the local authority in Sunderland in 2022. This consists of emissions from the industrial, commercial, public, domestic, agriculture, transport and waste sectors. Sunderland's citywide emissions since the 2015 baseline are shown on figure 20.

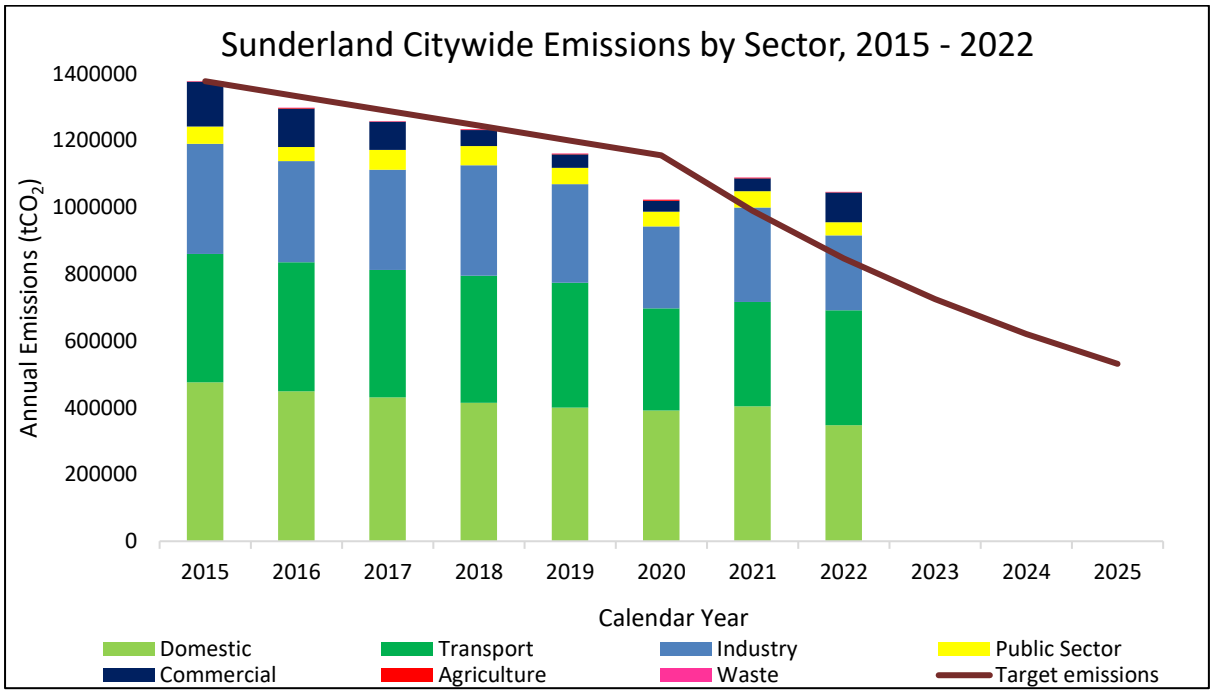


Figure 20 - Sunderland citywide emissions and targets, 2015 - 2022

5.1.2 In 2022, Sunderland emitted a net 1,046,145 tCO_2 (within the scope of influence for the local authority), representing a 4.9% decrease from 2021 levels. This was heavily influenced by the COVID-19 pandemic in 2020, which caused a significant temporary reduction in citywide emissions during the calendar year (2020). Emissions in 2022 were 11.7% lower than 2019 levels (the most recent year data is available where emissions were not impacted by the COVID-19 pandemic). Against the 2015 citywide baseline, annual citywide emissions have reduced by 27%.

5.1.3 Although Sunderland exceeded its interim recommended science-based target of a 16.1% reduction between 2015 – 2020, Sunderland is not currently on track to meet the second recommended interim citywide decarbonisation target of 61.5% by 2025, based on a 2015 baseline. The city must therefore reduce annual emissions rapidly over the forthcoming years. However, due to targets

being exceeded in previous years, Sunderland has met its first interim recommended 5-year carbon budget period of 5.8 $MtCO_2$ between 2018 – 2022 (aligned with the carbon budget of 8.2 $MtCO_2$ between 2020 – 2100). The full range of interim targets set by the Tyndall Centre are set out in section 2.

5.1.4 Figure 21 shows how citywide emissions per sector have changed since the previous year and the 2015 baseline. Emissions from all sectors decreased in 2022 compared with the 2021 calendar year, except for transport which increased, and waste management which remained the same. Emissions from all sectors have decreased since the 2015 city baseline, except for agriculture (although the scale of the city's agricultural emissions is very small). Some sectors are undergoing emissions reduction at much higher rates than other sectors in the city. Domestic energy and transport have historically been the two major emitters of CO2 in Sunderland (a pattern which continued this year) and accounted for over two thirds of annual citywide CO2 emissions in 2022. During 2020 and 2021, domestic energy overtook transport as the main source of CO2 emissions in Sunderland due to COVID-19 restrictions creating lower travel rates and people spending more time at home. While domestic energy has remained the highest emitter in 2022, transport emissions have increased post COVID-19. This was expected to a certain extent as people increasingly returned to their normal lives and / or established new travel patterns.

Figure 21 - Citywide emissions for 2022 (tCO_2e) and trends per sector since 2021 and the 2015 baseline.

Sector	2022 Emissions	Trend since 2021 (previous year)	Trend since 2015 (baseline)
Industry	224,336	↘2.27%	↘32.03%
Commercial	88,869	↘2.72%	↘41.78%
Public	39,496	↘3.25%	↘34.35%
Domestic	347,606	↘13.75%	↘27.40%
Transport	344,340	↗3.11%	↘16.52%
Agriculture	1,226	↘9.12%	↗28.38%
Waste management	269	0.00%	↘0.37%

5.1.5 The remainder of this section covers emissions from each of the individual sectors in turn, setting out the position from 2015 to 2022 and considering current performance in relation to the city's overall carbon budget reduction target.

5.2. Industrial emissions

5.2.1. Figure 22 shows how the industrial sector is performing against its target, when apportioned against an equal share of the carbon budget reduction target (against the 2015 baseline). Emissions from the industrial sector in 2022 decreased by 2.27% compared to 2021 (when the sector's activity was influenced by COVID-19) but is behind its apportioned 2022 target for

decarbonisation. Reductions have been driven by electricity, with a 46% reduction since the 2015 baseline. Emissions from gas were 11% lower in 2022 than the 2015 baseline. Other industrial emissions have witnessed a similar trend, being 35% lower than the 2015 baseline.

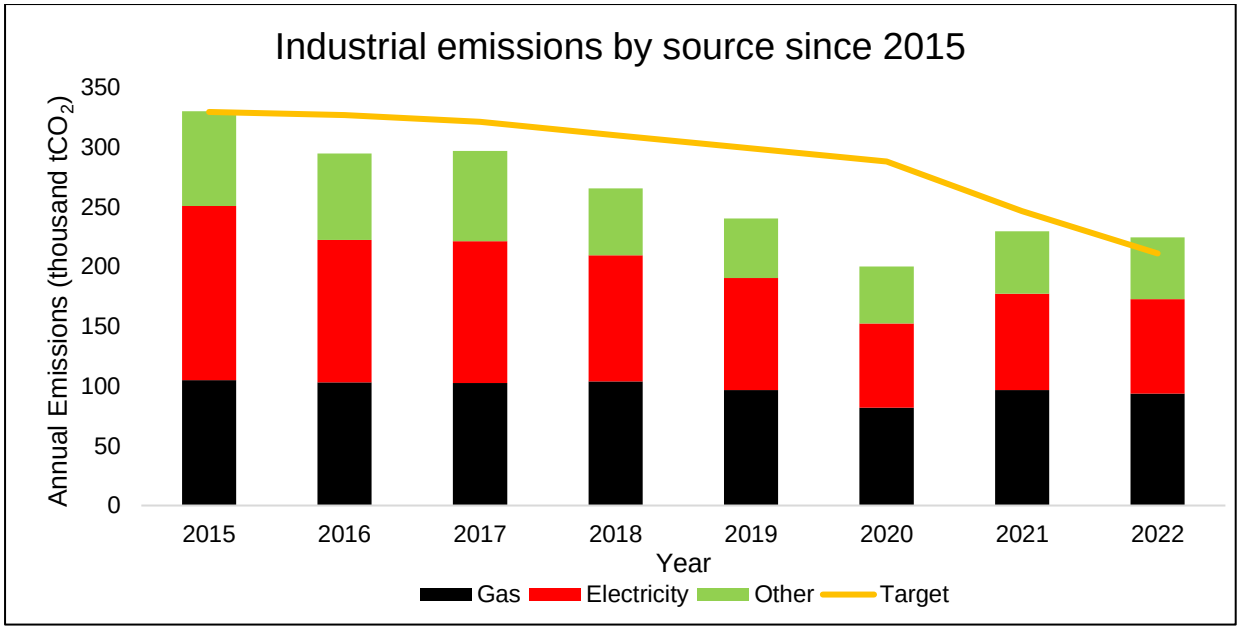


Figure 22 - Industrial emissions by source and progress comparison against an equal share of the carbon budget

5.2.2. In relation to comparison data, as can be seen in figure 23, Sunderland's industrial emissions have experienced less of a percentage decrease than the North East and UK between 2021 to 2022. Previously, Sunderland's industrial sector had decarbonised at a faster rate, however after the increase in 2021, which followed both the regional and national trend, Sunderland did not see as big of a decrease in 2022.

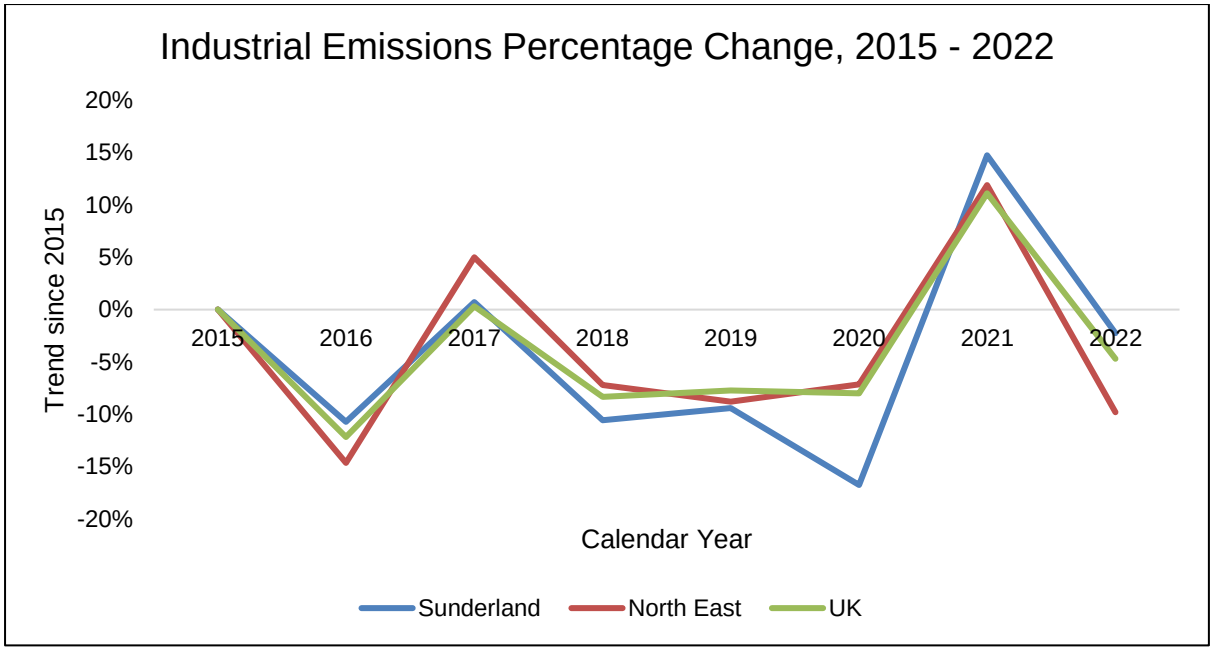


Figure 23 – Annual decarbonisation trend for industrial emissions since 2015 for Sunderland, the North-East and the UK

5.3. Commercial emissions

5.3.1. Figure 24 shows how the commercial sector is performing against its target, when apportioned against an equal share of the carbon budget reduction target (against the 2015 baseline). Emissions from the commercial sector in 2022 decreased by 2.7% compared to 2021 (when the sector's activity was still impacted by COVID-19) and while the commercial sector was ahead of its apportioned target for decarbonisation, decarbonising more successfully than all other sectors, in 2022 emissions are slightly over target. Reductions have been driven by electricity, with a 57% reduction since the 2015 baseline. Other commercial emissions have also decarbonised since the 2015 baseline, with

emissions reductions of 5.6%, however gas emissions have increased by 27% since 2015.

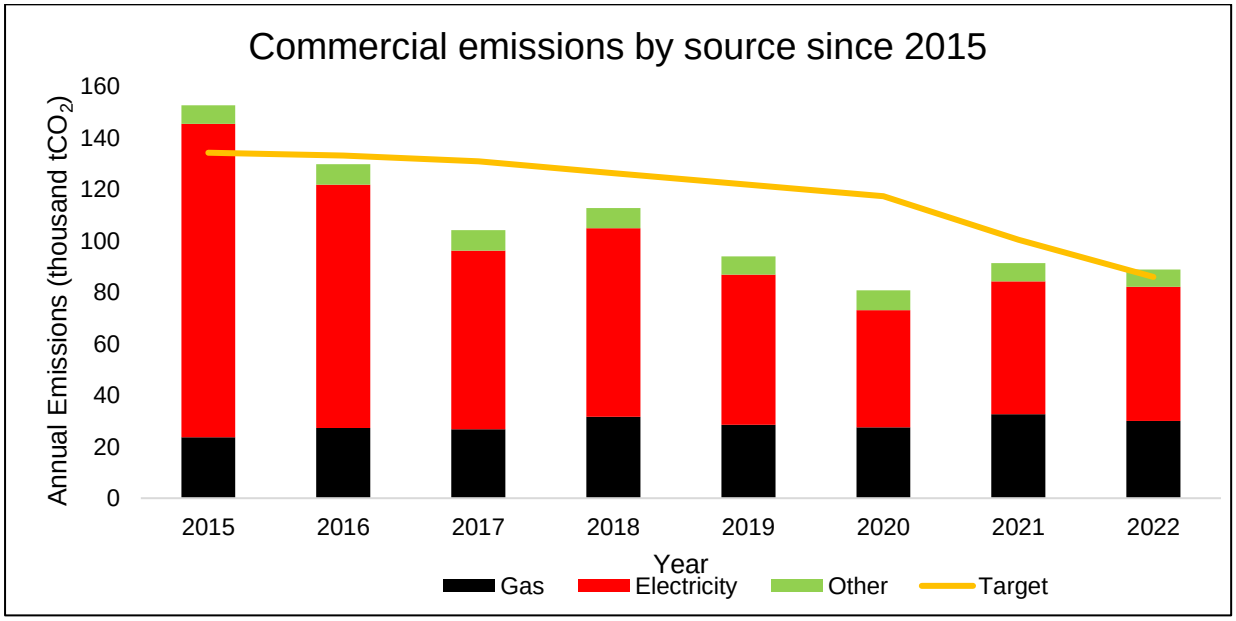


Figure 24 - Commercial emissions by source and progress comparison against an equal share of the carbon budget

5.3.2. In relation to comparison data, as can be seen in figure 25, commercial emission reductions in Sunderland have closely followed both the regional and national trend. The city's reduction in emissions from 2021 to 2022 is however slightly behind that of the North East and the UK, with Sunderland having a 3% reduction compared to 5%.

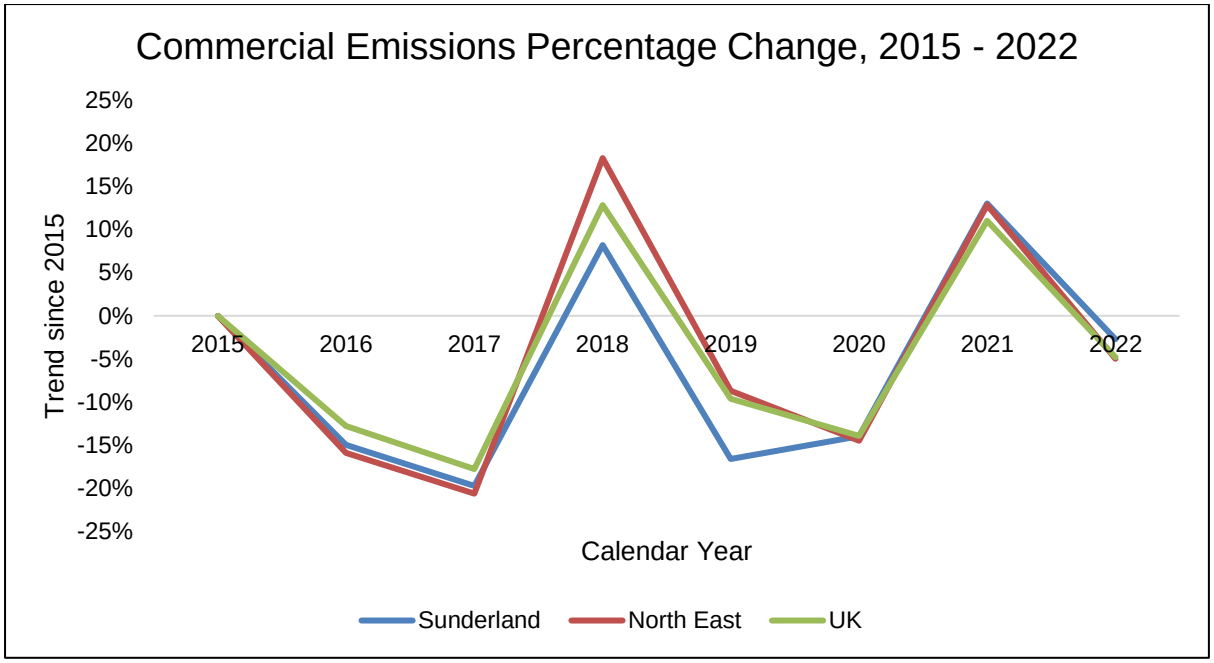


Figure 25 - Annual decarbonisation trend for commercial emissions since 2015 for Sunderland, the North East and the UK

5.4. Public sector emissions

5.4.1. Figure 26 shows how the public sector is performing against its target, when apportioned against an equal share of the carbon budget reduction target (against the 2015 baseline). Emissions from the public sector in 2022 decreased by 3% compared to 2021 (when activity was still impacted by COVID-19) yet the public sector is behind its apportioned 2022 target for decarbonisation. Reduced electricity consumption combined with the decarbonisation of National Grid electricity has led to a 34% reduction since the 2015 baseline. However, decarbonisation progress in the public sector has been counteracted by increases in emissions from gas, which have increased by 3.5% since the 2015 baseline. Other emissions in the public sector have decreased by 12% since the 2015 baseline, however these emissions make up only a small proportion of the overall total.

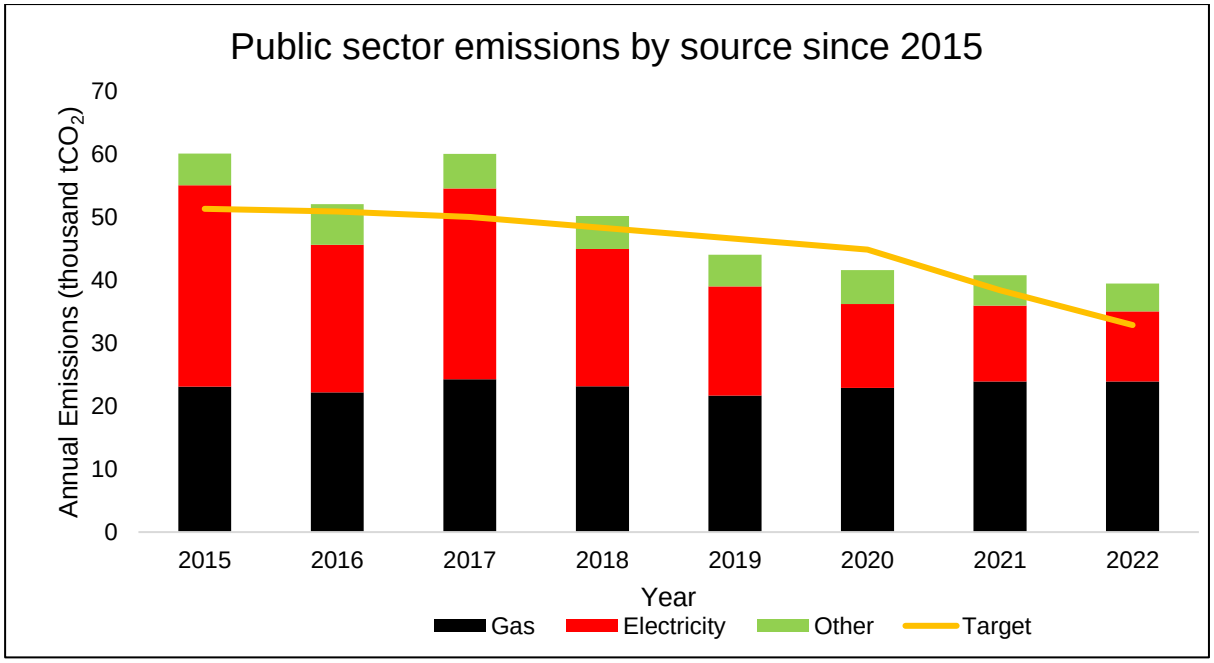


Figure 26 - Public sector emissions by source and progress comparison against an equal share of the carbon budget

5.4.2. As can be seen below in figure 27, the current rate of decarbonisation within the public sector is slightly higher than the average for the North East and the UK, after they both saw a sharp decline from 2021 to 2022, surpassing the reductions previously made by Sunderland alone.

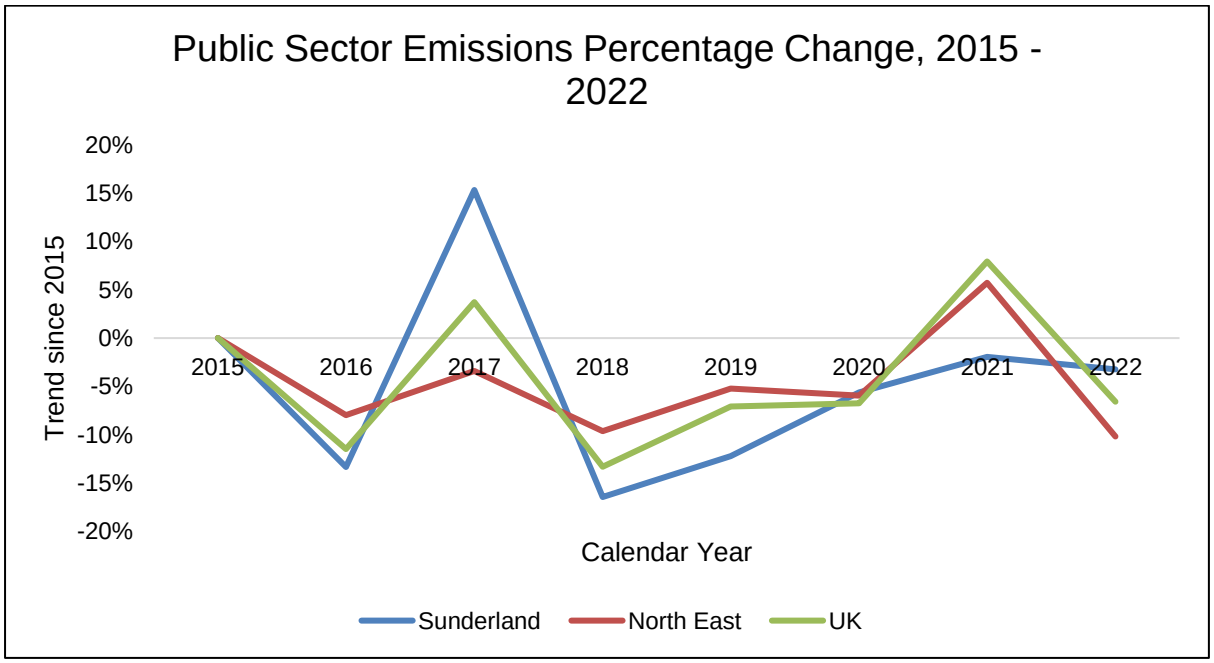


Figure 27 - Annual decarbonisation trend for public sector emissions since 2015 for Sunderland, the North East and the UK

5.5. Domestic emissions

5.5.1. Figure 28 shows how the domestic sector (the city's highest emitter) is performing against its target, when apportioned against an equal share of the carbon budget reduction target (against the 2015 baseline). Emissions from the domestic sector in 2022 decreased by 14% compared to 2021. Reductions have been driven by electricity, with a 52% reduction since the 2015 baseline. Emissions from domestic gas were 16% lower than the 2015 baseline and other domestic emissions have reduced by 12%. Other domestic emissions however increased by 5% compared to 2021, and emissions for the domestic sector are, like 2021, below target.

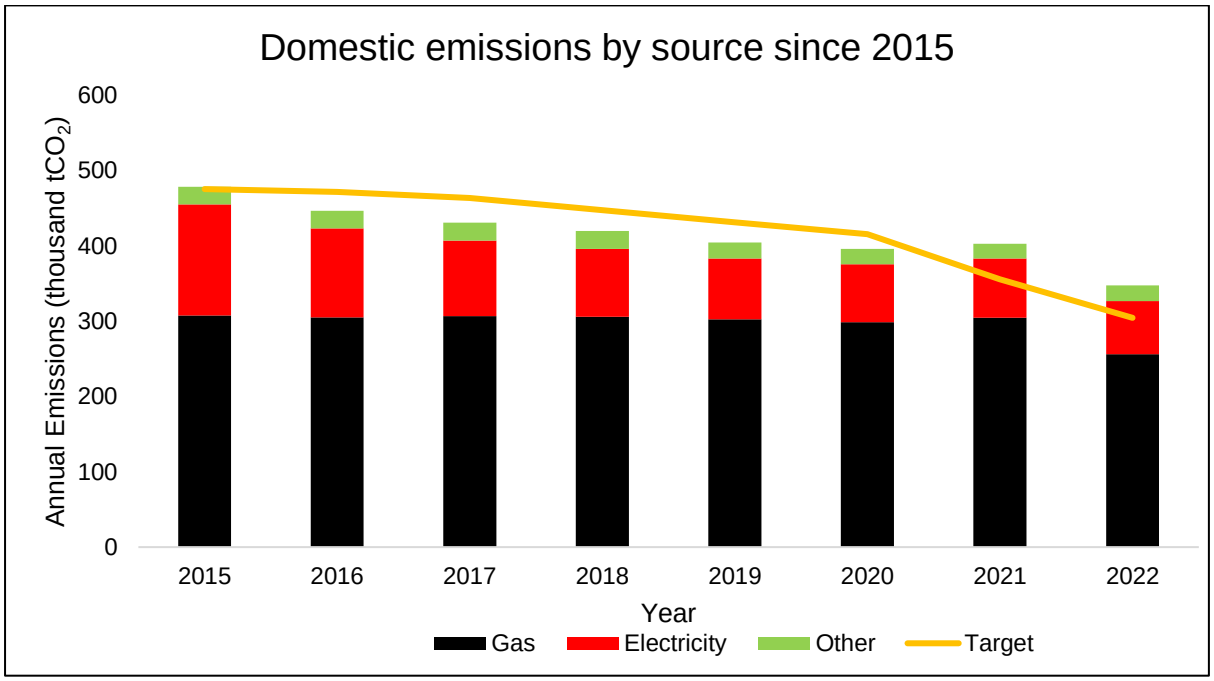


Figure 28 - Domestic emissions by source and progress comparison against an equal share of the carbon budget

5.5.2. In relation to comparison data, as can be seen in figure 29, the domestic sector has decarbonised at a faster rate than both the North-East and national average. The sharp decrease in emissions from this sector from 2021 to 2022 follows both the regional and national trend.

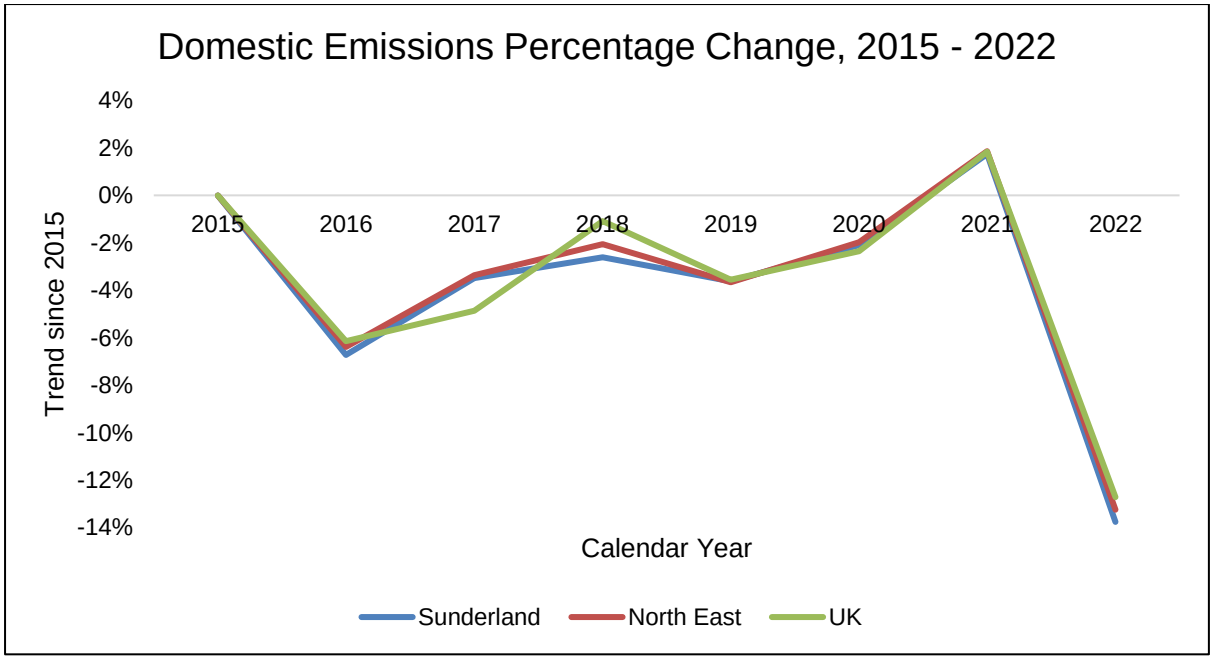


Figure 29 - Annual decarbonisation trend for domestic emissions since 2015 for Sunderland, the North East and the UK

5.6. Transport emissions

5.6.1 Figure 30 shows how the transport sector is performing against its target, when apportioned against an equal share of the carbon budget reduction target (against the 2015 baseline). Emissions from the transport sector in 2022 increased by 3% compared to 2021 and the transport sector is behind its apportioned 2022 target for decarbonisation. Emissions have decreased since the 2015 baseline, ranging between 13% (other transport) and 17% (road transport), however this has not been at the pace required to meet the carbon budget apportioned target for the transport sector.

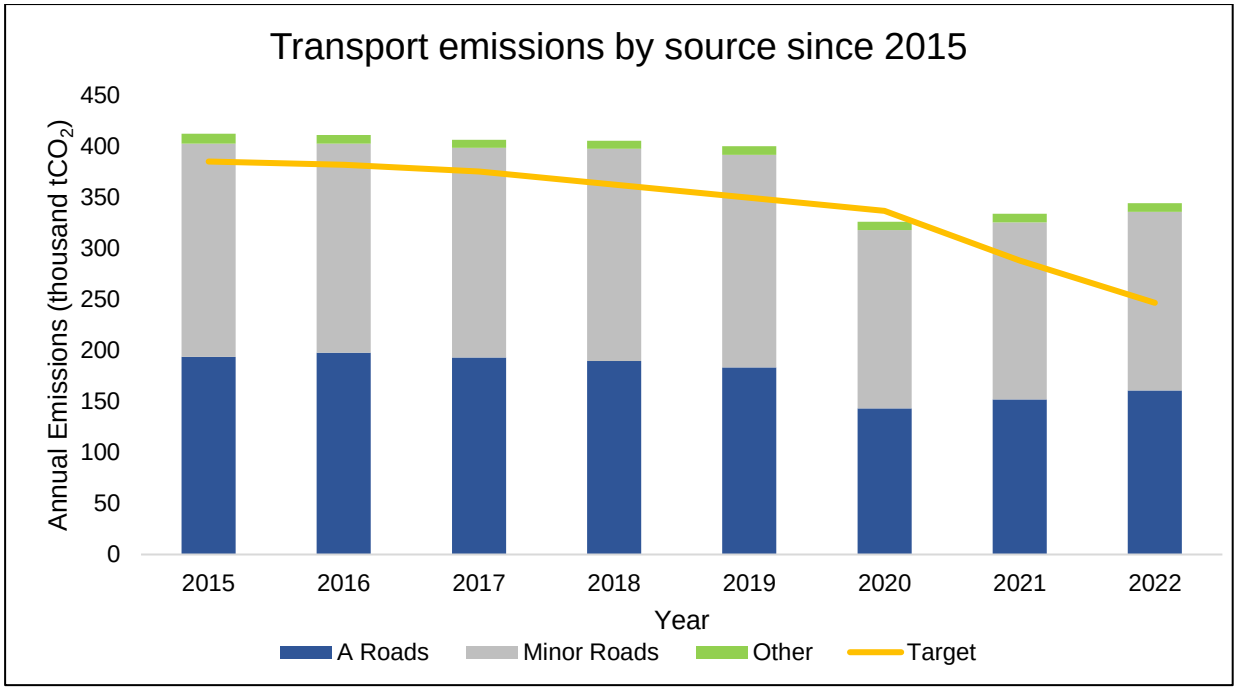


Figure 30 - Transport emissions by source and progress comparison against an equal share of the carbon budget

5.6.2 In relation to comparison data, as can be seen in figure 31, the increase in emissions from 2021 to 2022 follows the reginal and national trend. However, the North East and UK saw a lower increase in emissions in 2022 compared to 2021, whereas Sunderland saw a slightly larger increase in transport emissions. This means although Sunderland had the lowest transport emissions in 2021, it now sees higher emissions compared to the North East and UK.

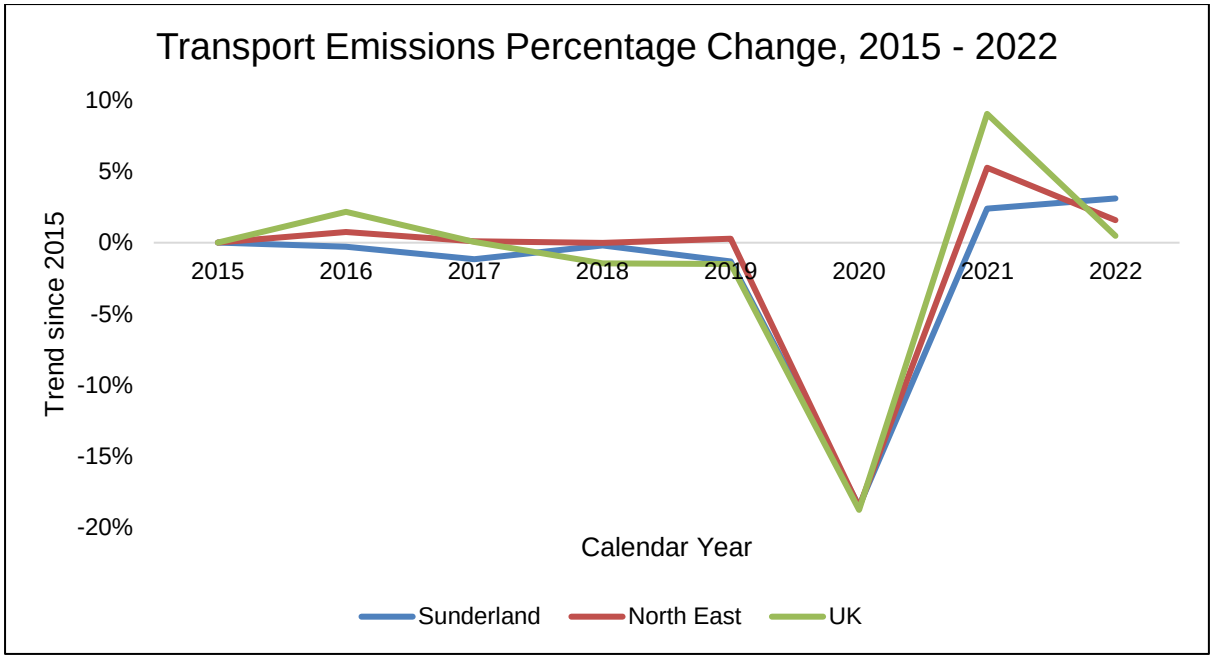


Figure 31- Annual decarbonisation trend for transport emissions since 2015 for Sunderland, the North East and the UK

5.7. Agriculture emissions

5.7.1 Figure 32 shows how the agriculture sector is performing against its target, when apportioned against an equal share of the carbon budget reduction target (against the 2015 baseline). It should be noted that emissions from this sector within the city (at less than 1% as shown in Figure 16 – section 5.1.1) are very low compared to all other sectors. Emissions from the agriculture sector in 2022 decreased by 9% compared to 2021. Gas emissions have been increasing in previous years, and in 2022 emissions have increased by 290% since the 2015 baseline. Other emissions have also increased by 24% since 2015, but electricity has decreased by 20%. Therefore, emissions from the agriculture sector are behind the reduction target.

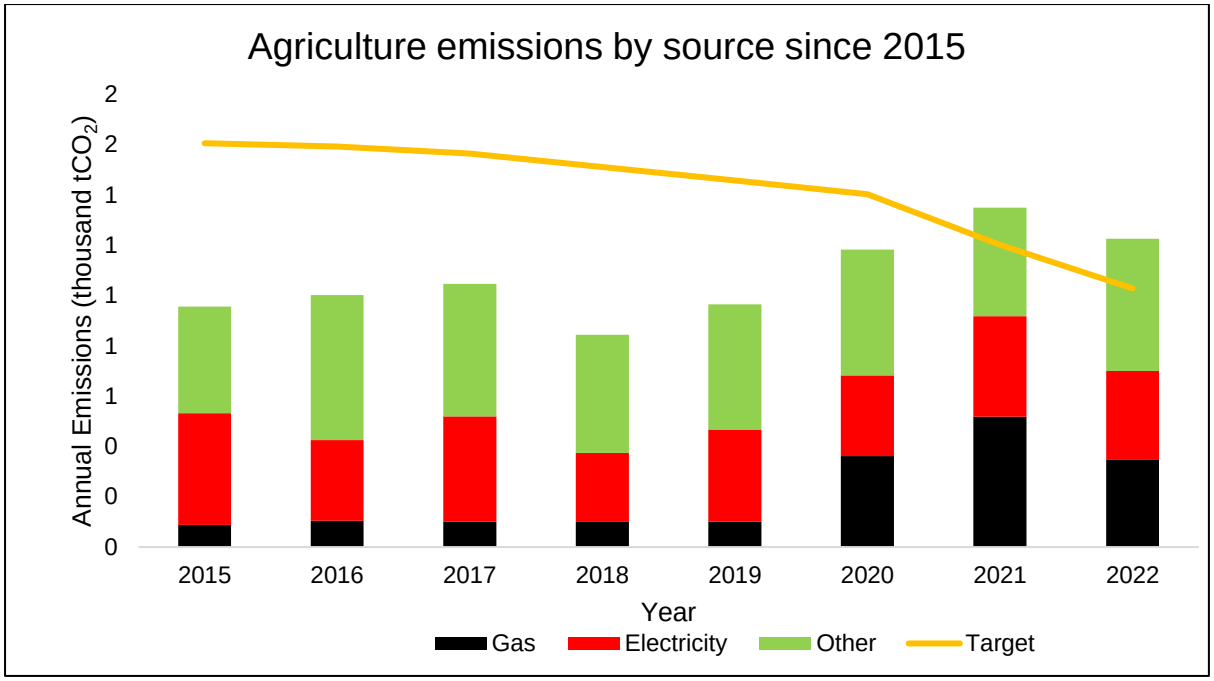


Figure 32 - Agriculture emissions by source and progress comparison against an equal share of the carbon budget

5.7.2 In relation to comparison data, as can be seen in figure 33, while the agriculture sector had previously become more carbon intensive, during 2022 a significant reduction in emissions occurred. Now, emissions from this sector in Sunderland are below the North East and national averages.

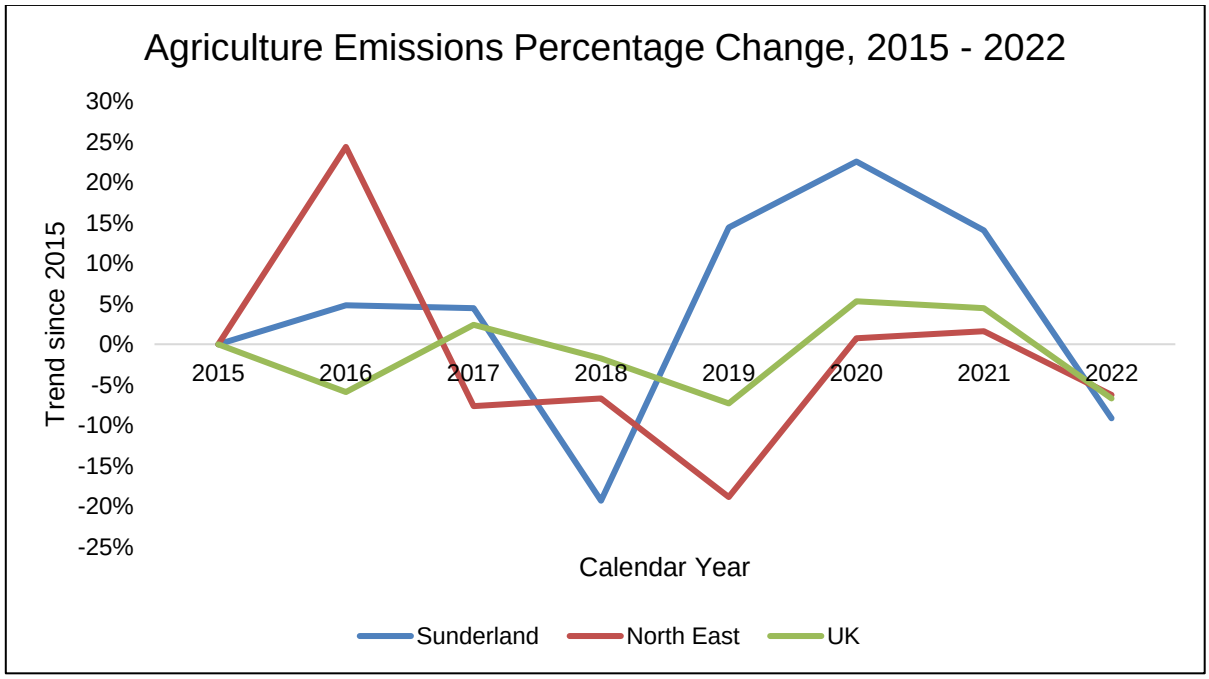


Figure 33 - Annual decarbonisation trend for agriculture emissions since 2015 for Sunderland, the North East and the UK

5.8 Waste management emissions

5.8.1 DESNZ produce emissions from waste management data which covers landfill and 'other' waste management as separate categories, however, excludes landfill as 'in scope' for the local authorities' emissions. Therefore, only data for 'other' sources is included within the citywide carbon inventory. Like with the agriculture sector, it should be noted that emissions from this sector within the city (at less than 1% as shown in Figure 34) are very low compared to all other sectors. Figure 29 shows how the waste management sector is performing against its target, when apportioned against an equal share of the carbon budget reduction target (against the 2015 baseline). Emissions from the waste management sector in 2022 increased by 0.2% compared to 2021 and the waste management sector remains behind its apportioned 2022 target for decarbonisation.

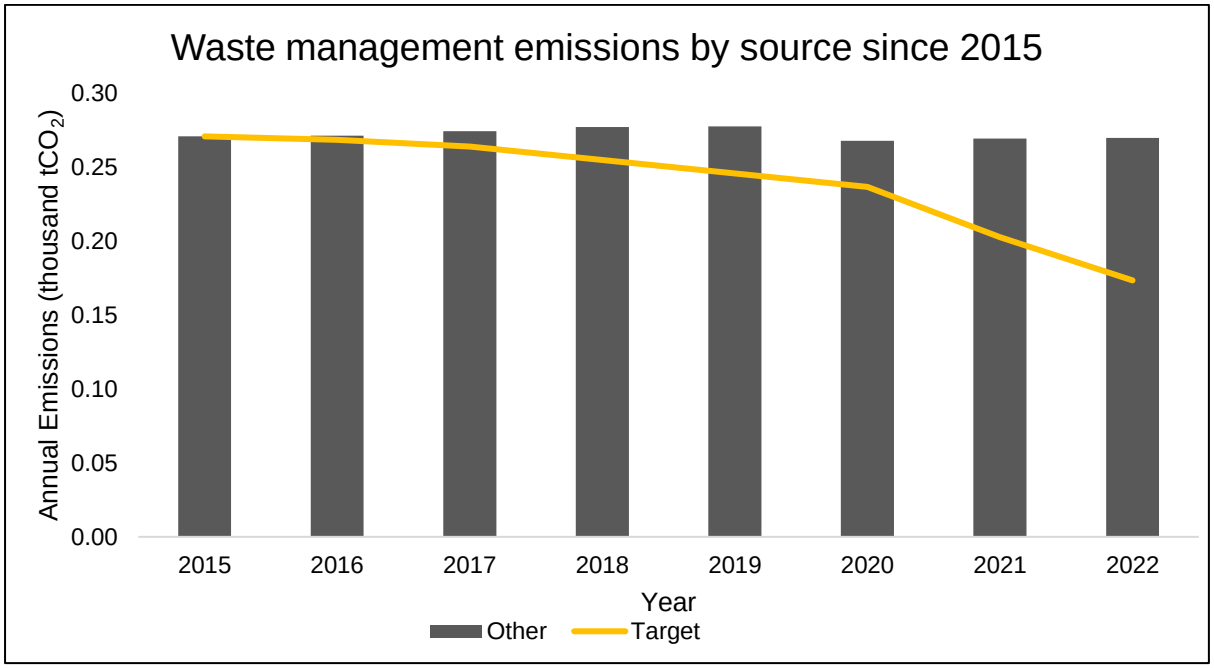


Figure 34 - Waste management emissions by source and progress comparison against an equal share of the carbon budget

5.8.2 In relation to comparison data, as can be seen in figure 35, the waste management sector is performing better than the national average, though since 2021, emissions have not declined as significantly as they have within the North-East region. Emissions increased slightly (0.2%) in this sector between 2021 and 2022, differing from the national and regional trends which both saw a percentage decrease. In light of collective approaches to waste management within parts of the North-East we will continue to seek insight into the extent of the differential shown above between Sunderland and the region in 2022.

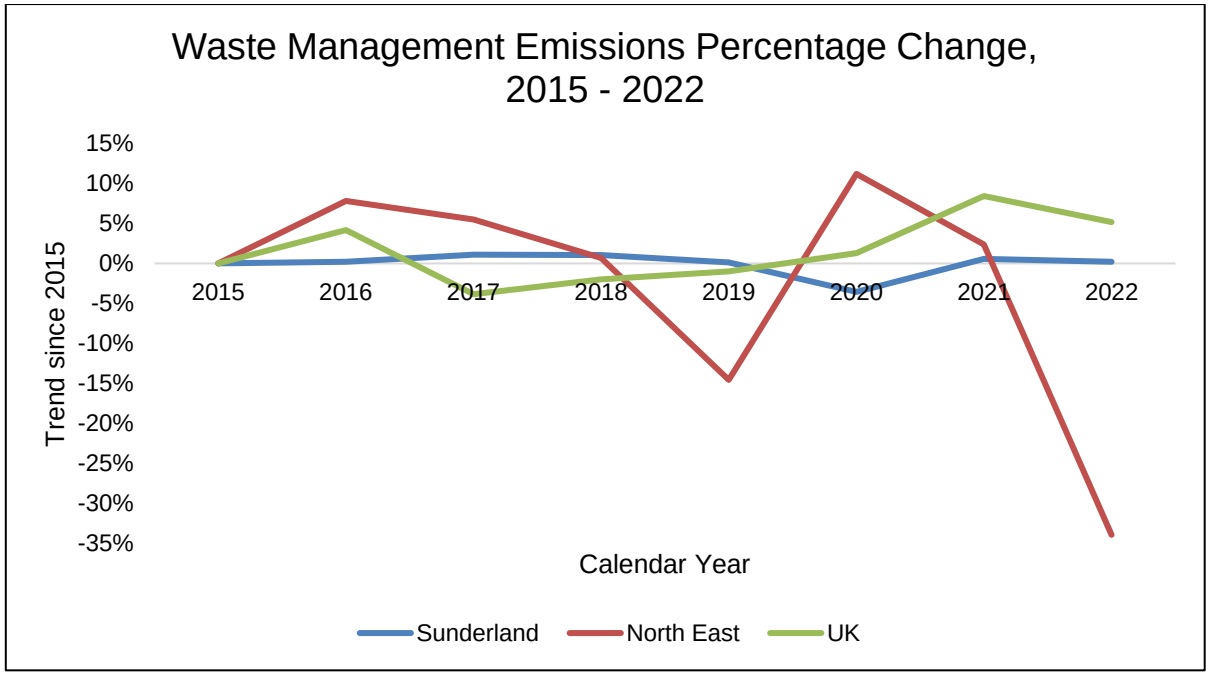


Figure 35 - Annual decarbonisation trend for waste management emissions since 2015 for Sunderland, the North East and the UK

5.9 Emissions from Land Use, Land Use Change and Forestry (LULUCF)

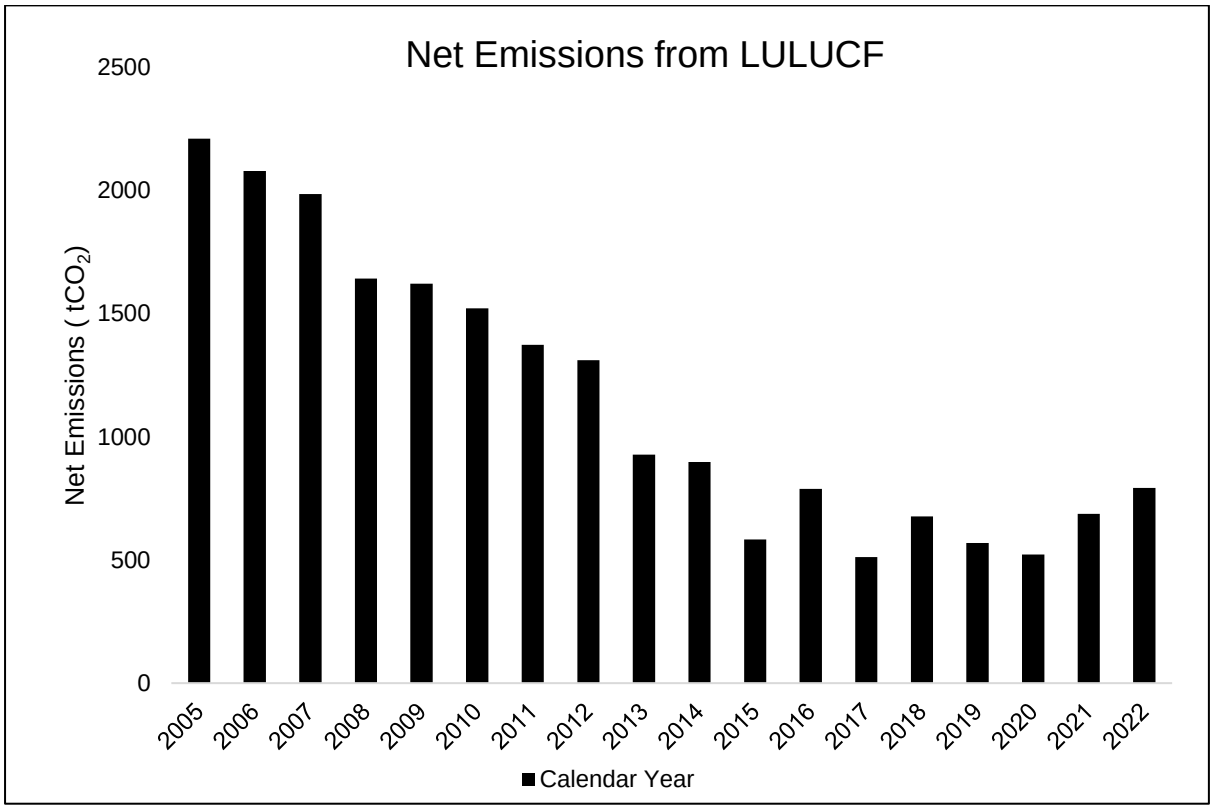


Figure 36 - Net emissions from LULUCF in Sunderland, 2005 – 2022

5.9.1 In recent years there has been a significant reduction in the amount of carbon emissions within the city as a result of Land Use, Land Use Change and Forestry

(LULUCF), falling from over 1400 tCO2 emitted in 2015 to less than 800 tCO2 emitted in 2022. This has primarily been driven by reductions in the emissions from settlements and increases in the amount of carbon sequestration associated with land used as grasslands.

5.9.2 It is noted however that emissions from LULUCF did increase slightly from the previous year. It is hoped however that positive change through tree planting associated with the North East Community Forest (NECF) and other ecological enhancement schemes being delivered throughout the city will continue to improve the levels of carbon sequestration and reduce the net emissions through LULUCF in the future. Net emissions from each source are shown on figure 37.

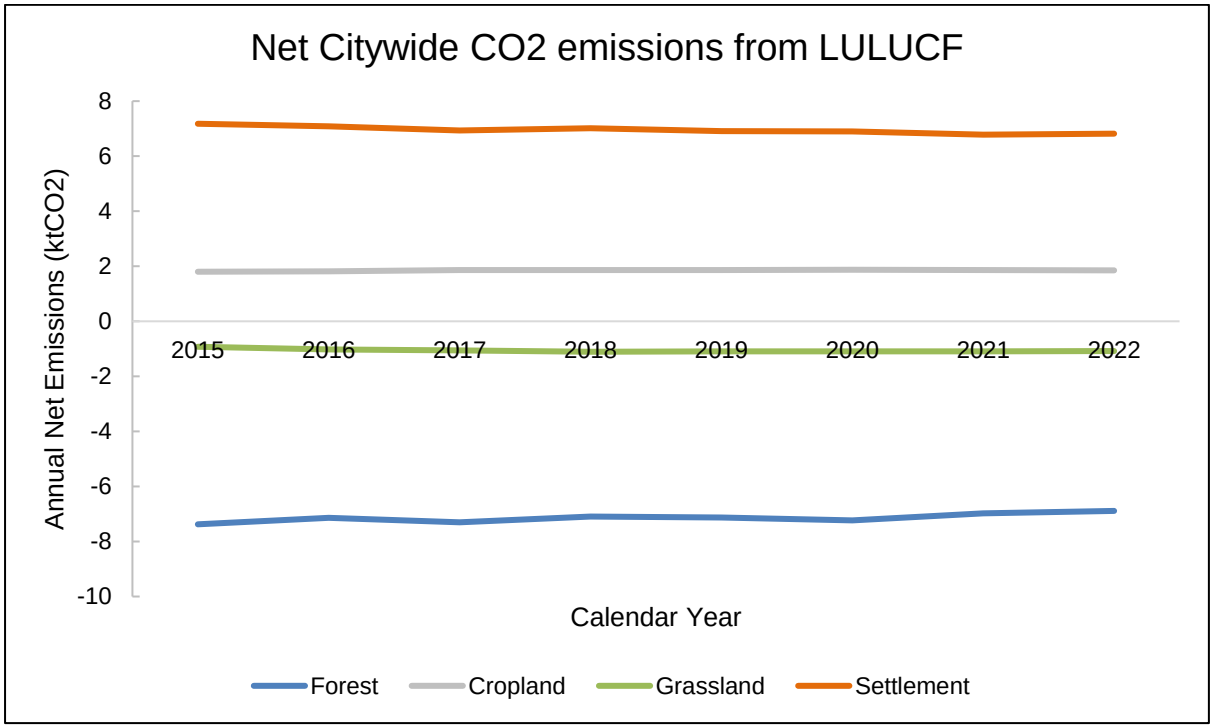


Figure 37 - Net emissions in the LULUCF sector by source.

6. Key Areas of Activity and Progress

6.1. Our Behaviour

6.1.1. Activity in this area includes engagement work across 6 target groups set out in 6.1.2 below, with a strong focus on children and young people, together with opportunities to learn from and share good practice and communications activity.

6.1.2. The Low Carbon Engagement Plan is a dynamic working document to shape engagement activity. It identifies a series of key target groups: residents; children and young people; Voluntary Community Sector; Sunderland City Council employees; partners locally, regionally, nationally and internationally; and businesses. The plan outlines the proposed ways to engage with each group to involve them in decision making and support them in taking action to limit climate change and to reduce carbon emissions. All strands aim to:

a) understand the awareness of climate change among the target group and their feelings about Sunderland's response to it;
b) actively listen to and engage target groups in co-creating solutions and participating in decision-making processes on climate action;
c) share reliable information through diverse and accessible formats on the climate crisis and its likely future impacts, and on the local context and response;
d) support individuals and organisations to make informed decisions and understand the carbon impact of these, including through sharing best practice and case studies;
e) signpost target groups to support from the Council and other local, regional, national and international organisations on how to live and work more sustainably; and
f) facilitate connections between target groups and others in the city working on these topics.

Residents

6.1.3. Communications has a key role to play within the 'Our Behaviour' strand. An annual communications plan has been designed which includes opportunities for engagement to ensure regular content is created and shared to a variety of audiences and using a range of media and channels. From this plan flows a monthly social media programme using the citywide #Wearsustainable hashtag and focused on international/national/local initiatives in relation to climate change, and sustainability in addition to internal communications activity to engage with employees.

6.1.4. MySunderland website provides a citywide platform to enable partners to share information, promote activities, and publish Low Carbon data in one place. The website was revised and updated to be more engaging during 2024 with designed sections for specific audiences. The website is interactive and provides access to partner information, regular reports produced in relation to Low Carbon including a wide range of news and case studies, information on how to get involved, information regarding the science of climate change, an events calendar to support awareness raising and engagement activity, as well as access to data (including quarterly emissions reports, annual data reports, and the city's annual CDP submission). During the last quarter of 2023/24 the website was receiving 50% more individual visitors compared to the previous quarter and its bounce rate had decreased by 0.39% to sit at 36.3%, telling us that more visitors are spending meaningful time on the Low Carbon pages.

6.1.5. Having been shortlisted as a national finalist in the WWF One Planet City Challenge (following our 2023 CDP submission), during 2023/24, Sunderland was subsequently invited to participate in the 'We Love Cities' campaign in October 2024. 'We Love Cities' is a public engagement campaign that allows people across the world to express support for sustainable urban development by voting for their favourite finalist from WWF's One Planet City Challenge and posting improvement suggestions for these cities. The central aim of the campaign is to:

- inspire and raise awareness for the sustainability progress being made in cities;
- give the general public an opportunity to celebrate, vote and upgrade their city through making suggestions to decision makers;
- reward communities and strengthen the bond between the public and decision makers.

6.1.6 Sunderland developed and delivered a communications plan to ensure the One Planet City Challenge campaign was widely shared in a range of formats and promoted other activities to sit alongside it (such as a school sculpture competition with finalists displayed in the city). Sunderland also worked with a diverse range of partners to ensure maximum engagement in the campaign, including the EGS group (children and young people) and attending events such as EcoFest, Sunderland Business Festival and EXPO Sunderland, working with voluntary sector partners, specialist groups such as the Ageing Well Ambassadors and visiting local libraries. The campaign was also presented at the 2030 Shadow Board with partners from all sectors committed to its rollout. In previous campaigns in 2023, Sunderland received support from thousands of individual voters and received over 100 written responses in the 'We Love Cities' campaign; the key topics of importance from the campaign this year (2024), are currently being collated but, in summary, residents are concerned about transport emissions, and keen to increase active travel and

connectivity, alongside planting more trees, plants and shrubs, as well as tackling litter and increasing recycling.

6.1.7 Ecofest Sunderland was held for the first time in October 2022 and is now an annual event. A range of partners come together to raise awareness of low carbon and wider sustainability programmes and initiatives across the city at Sunderland Museum & Winter Gardens - ranging from community growing to active travel, and energy efficiency with the opportunity for residents to make pledges and get involved with the 'We Love Cities campaign'. There is also a wide range of activities for children to take part in at the Museum on the day including making posters, planting seeds, and taking part in an Ecofest trail. The third Ecofest was held on the 5th October 2024, aimed at residents, families and children, in partnership with local community groups to raise awareness of low carbon and sustainable topics.

6.1.8 Over the course of 2023/24, as well as EcoFest, the Low Carbon team have taken part in a wide range of engagement events to raise awareness in communities across the city around low carbon, sustainable behaviours, Sunderland's Refill scheme, promoting funding support for retrofitting and active travel. Most recently during the summer, events were supported at Mowbray Park, Silksworth Sports Complex, Lambton Street Community Centre, Princess Anne Park, the Bridges and Galleries shopping centres. Further examples include Freshers' Fair at the University (September 2024) and events at Backhouse Park, Ageing Well Ambassadors and Healthy Workplace Alliance.

6.1.9 The Sunderland Ageing Well Ambassadors have also been involved in low carbon discussions and supporting the team to share important information with residents in Sunderland, working with their Wear Shining a Light news and media team (in Sept 2024). Older people can be more vulnerable to the effects of climate change, particularly effects which increase heat stress and flooding and increased airborne diseases and therefore it is important that residents are able to discuss their concerns and support how Sunderland as a city works with and supports their older residents.

Children and young people

6.1.10 The Environmental, Green and Sustainable (EGS) young people's group (launched in October 2021) continues to grow and meet quarterly. EGS brings together children and young people from primary, special, and secondary schools alongside representatives from Sunderland Youth Council, youth work settings, Sunderland College, and the University of Sunderland to provide a forum where young people's opinions regarding climate change can be heard. The group was developed by the young people, with 20 members attending the

group sessions in the last 12 months. Members are supported to meet and discuss climate action, participate in Low Carbon volunteering opportunities, and discuss/feed into the city's plans. During 2023/24 EGS members have continued to send representation to every 2030 Shadow Board meeting and to contribute to group discussions.

6.1.11 During the last academic year (2023/24) the EGS Group decided to focus on Sustainable Travel and Transport. The group took part in a range of discussions with invited speakers such as Sunderland City Council's Active Travel Team, Teach the Teacher and Councillors. They have also taken part in a wide range of activities, including making a 'Healthy Home Hacks' video, undergoing Teach the Teacher training as well as launching and judging the 'Walk to Win' Walk to School Week competition in May 2024. This October (2024) the EGS Group have had their first meeting of the new academic year (2024/25). The group took part in discussions to shape the development of the Low Carbon School Charter, contributed to the WWF's We Love Cities Campaign and made junk models which were displayed at this year's Ecofest Sunderland.

6.1.12 During COP27 Sunderland City Council launched a new initiative called Sunderland Climate Friendly (CF) Schools to support Sunderland's schools, children and young people to have the knowledge, confidence and skills required to drive the city's low carbon ambitions forward. This is a two-year programme which has been delivered by Outdoor and Sustainability Education Specialists (OASES) to improve environmental literacy and support schools to take action in tackling climate change, with 10 schools being selected to take part in the project. The two-year project is now coming to an end with all 10 schools receiving Climate Friendly School Status in year 1 and 2.

6.1.13 All 10 CF schools (including some from each of the five areas across the city and a mix of primary, special and secondary schools) have worked closely with OASES staff and the Low Carbon Team to: complete a school audit; set up a climate action team; develop actions; complete a whole-school assembly; and undergo training for teaching staff and governors. Schools receive Climate Friendly Schools status when the 10 actions they have identified have been completed. School actions are based around 7 climate friendly themes: energy, transport, building, water, food, consumption, and grounds. Examples of the carbon-cutting actions the schools have delivered include growing vegetables, introducing children to possible future careers in the green economy, promoting a uniform swap shop, installing a water butt to harvest rainwater, creating an energy saving campaign in school, investigating renewable technologies to install and planting trees.

6.1.14 In 2022 a Sunderland Climate Friendly Schools network was also formed, which meets termly and is open to all schools. The network cascades information and signposts support, where good practice is shared amongst peers. The most

recent meetings being in March 2024, which focused on sustainable transport, and more recently in June, which focused on waste. The network initially started with attendance from the Climate Friendly Schools and has grown to 17 schools regularly attending. Other Sunderland schools are interested in taking part during 2024/25, after attending the Sunderland Climate Friendly Schools summer conference.

6.1.15 Alongside the Sunderland Climate Friendly project, Sunderland City Council launched an initiative to develop the 'Wear Sustainable' resources toolkit. The development was led by OASES, with 5 Sunderland Schools (primary, secondary and special) selected to co-develop and trial the Wear Sustainable Low Carbon resources. In February 2024, the resources were made available for all key stages to learn about Sunderland's Low Carbon journey, including lessons that focus on: the Science of climate change; Global challenges and responses to the crisis; Sunderland's carbon journey; Local Challenges and Responses; and Hopes for a climate friendly future. The resources are curriculum linked and enable young people across Sunderland to understand the city's history and heritage and transformation over time to the modern and increasingly sustainable cityscape.

6.1.16 As well as lesson plans, presentations and handouts, schools will have access to linked physical loan boxes, as well as a guided 'Wear Sustainable' trail around the city that illustrates and expands upon the lesson content.

6.1.17 In June 2024 Sunderland held its first Sunderland Climate Friendly Schools Summer Conference. The event was held at City Hall, attracting over 100 attendees who were mostly pupils from primary and secondary schools across the city. Schools took part in a number of climate activities across the day, with the schools working to achieve Climate Friendly School Status showcasing their projects including food growing, uniform swaps, energy saving and supporting walking and cycling.

6.1.18 Sunderland City Council and Together for Children have recruited the city's first Associate School Improvement Advisors (ASIAs), now named the Low Carbon Lead Teachers, who specialise in sustainable education and will be available to support all schools with their curriculum activities. As part of the work commissioned from OASES (autumn 2022 – summer 2024) to establish Sunderland Climate Friendly Schools, the teachers have received initial training to develop their ability to support schools long-term and have been participating alongside other schools in network meetings and development of the WearSustainable resources toolkit, lesson plans, loans box and trails. The role of the teachers will be key to the long-term sustainability of school engagement of this nature once the work commissioned from OASES concludes.

6.1.19 Free opportunities available to schools in the city continue to be circulated regularly. This includes activities organised through the regional Waste and Recycling Visitor Education Centre, which saw 18 Sunderland schools take part in waste education activities from April 2023-April 2024. During this time period, approximately 1,736 students took part in activities such as bird feeder

workshops, whole school waste assemblies, waste workshops, whole school waste events, zero waste lunch and cooking workshops, and food growing workshops. Other carbon-cutting initiatives that have been shared with schools include school funding opportunities such as the National Education Nature Park Grant, where 18 of the 22 eligible Sunderland schools applied for, and received, a grant of up to £10,000 during the academic year 2023/24 to enhance biodiversity. The 4 schools who did not apply for the grant are eligible to apply for £10,000 during 2024/25 as well as a number of the schools who received a grant in 2023/24 being eligible for a top up grant of £2000 during 2024/25. School training opportunities via Eco-Schools, local initiatives such as Park That Bike, the OMEGA project (which promotes local growing, eating and healthy food through gardening and cooking in schools, run together by the Council, Together for Children and OASES), and tree planting opportunities as well as National initiatives such as Walk to School Week and Recycle Week have also been shared with all Sunderland Schools.

6.1.20 A new category was introduced into the city's longstanding Young Achievers Programme during 2022, with the first awards made in 2023. For the second awards in 2024, the Young Environmental Champion Award category received a wide range of nominations for young people, both individually and collectively, who are making a real contribution to tackling climate change and engaging in wider sustainability activity. The awards ceremony was held in March 2024, where the environment category was sponsored by Nissan, celebrating the achievements of young people of all ages in this area alongside a wide range of other award categories. The 2024 winner of the category was Anya from Seaburn Dene Academy. Anya won for her ongoing dedication and involvement in many environmental initiatives with the EGS group and embodying what it means to be an environmental champion. The highly commended winners of the category were the Ryhope Rangers from Ryhope Junior school, winning the award for their commitment and care for the environment, improving the use of sustainable resources both in school and the wider community.

6.1.21 The Sunderland 60 Legacy programme was delivered again by the Council in collaboration with Common Purpose, a non-profit organisation which delivers leadership programmes in over 200 cities globally. Sunderland Legacy brings together 18-25 year olds from a range of employers and education providers across the city as part of an international leadership programme to work on how to make Sunderland a cleaner, greener city for generations to come.

6.1.22 The most recent Sunderland 60 event in 2024 was the third edition of the Sunderland Legacy programme and saw 50 young people invited to participate in sustainable regeneration and cultural regeneration discussions and activities from organisations including sponsors Sunderland City Council, NWG Living Water, NHS South Tyneside & Sunderland Foundation Trust and the University of Sunderland. In addition, young people also attended from Nissan, Gentoo, SCAS, Together for Children, Just Eat and Esh Construction. Participants

received training and sessions from Common Purpose as well as experts in related fields (sustainability & culture) locally and a keynote from the City Council's Chief Executive. They also participated in immersion visits to a range of sites with city partners, where sustainability & culture was a golden thread. The young participants were then given the opportunity to pitch their own ideas for the city's future to senior officials and received feedback on their proposals.

Voluntary & Community Sector

6.1.23 Regular information and updates on local Low Carbon plans and activities, as well as regional and national events and opportunities, continue to be regularly shared with VCS partners. Opportunities shared have included: toolkits to support organisations to develop their environmental and sustainability plans, promotion of available funding streams; opportunities to be involved in waste and recycling initiatives; and promotion of the Betterpoints App.

6.1.24 There has also been significant support offered to enable the voluntary sector to benefit from retrofitting their facilities, to decarbonise and reduce utility costs, accessing the UKSPF funded BREEZ2 grant. The Low Carbon team has also worked alongside VCS organisations and partners on a range of activities including participating in EcoFest 2024, supporting public tree planting events, facilitating gardening sessions for the EGS group, and recruiting Refill stations and promoting the Refill App's use.

6.1.25 The Sunderland Voluntary Sector Alliance has worked with businesses across the city to recruit corporate volunteers and coordinated the participation of hundreds of corporate volunteers committing thousands of hours to environmental projects locally including gardening, tree planting, litter picking and beach cleaning.

Employees

6.1.26 In March 2023 Sunderland City Council launched a Green Champions programme for employees. Activities have included volunteering at low carbon events and supporting the development of staff induction sessions. Other staff have been recruited through participation in the Sunderland 60 Common Purpose Legacy projects (2023 and 2024), where young Council employees were invited to become Green Champions for their work areas.

6.1.27 In November 2023 the Council introduced Low Carbon content as part of the induction for all new staff – this has been delivered in an in-person interactive session monthly with all new staff. New resources are currently being finalised to be rolled out via online learning for all Council staff on Low Carbon and the Council has finalised the content of Carbon Literacy training to be introduced for Staff and Elected Members over the coming months

6.1.28 This year the Council's Green Champions network has grown. Meetings have included new participants from across the Council taking the total number of Green Champions to 36. Green Champions have been consulted on areas where their input is really valued including, for example, the staff induction process for all new starters in which a face-to-face interactive session on Low Carbon is now included monthly. They have also provided feedback and supported development of a new iLearn online training module which will be mandatory for all Council staff, and which includes information on both climate science and actions in the workplace/locally. The Green Champions are also continuing to identify areas where sustainable improvements can be made within their own diverse service areas – these have included postal system reviews, allotment provision and support, uniform swaps, and equipment recycling. Meetings are held on at least a quarterly basis (Jan, Apr, July, Oct), and key speakers are invited to discuss an area of interest. Topics discussed this year have included the BREEZ 2 retrofit project, Active Travel & Transport, and Coast projects.

6.1.29 A Network has been created to run concurrently for tenants of the City Hall building, including the City Council, and is led by Knight Frank. The Green Champions Tenants meetings are a vehicle to share best practice and lead on all things sustainable as well as to drive change. This year they have seen the improvement of cycle and shower facilities to encourage sustainable travel to City Hall, as well as the introduction of food waste collections and disposable cup recycling. They have enabled sustainability events such as clothes swaps, insect house building and green roof planting, which has supported achievement of The Investors in the Environment Silver award (May 2024).

Partners

6.1.30 Sunderland Council continues to work very closely with City partners to collaborate and share ideas and resources to enable the city to work together to maximise progress against its 2040 Low Carbon target.

Businesses

6.1.31 The Low Carbon team is working closely with the Business Investment Team to take forward activities to support and engage local businesses. During this reporting year, work included development and distribution of a range of Low

Carbon business fact sheets as well as dedicated pages on the MySunderland low carbon website, including toolkits and links to potential funding sources.

6.1.32 Local businesses continue to be updated regularly with information and opportunities within the city including installation of cycle racks, sustainable travel planning for workplaces, EV Charging point installation, funding for retrofitting and energy efficiency through the BREEZ2 programme, sustainability awards, initiatives such as Refill, and events including EcoFest. During 2023/24 Council teams have put in place routes to cascade information via a range of organisations, networks and partnerships working with businesses, including the Sunderland Business Improvement District.

6.2 Our Policies and Operational Practices

6.2.1 Activity in this area seeks to ensure carbon reduction is increasingly built into all Council policies and operational practices. Work set out more fully below has focused on: ensuring the Council's targets remain ambitious; building datasets to enable accurate reporting through this annual report and more broadly, as well as to help prioritise areas for delivery, and enable evidence-based external funding applications together with the associated monitoring and reporting; early development work in relation to procurement and mechanisms to help embed low carbon across the organisation. Significant work has also been undertaken in relation to adapting the natural environment and green infrastructure, not only in terms of seeking more carbon storage and sequestration but also ensuring that the city is more resilient to the impacts of climate change.

Reporting

6.2.2 As set out in section 3 of this report, the Council discloses to CDP (formerly Carbon Disclosure Project) on an annual basis. CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impact. The world's economy looks to CDP as the gold standard for environmental reporting with the richest and most comprehensive dataset on corporate and city action. The Council committed to submitting annual citywide environmental data to CDP in 2021 and has previously disclosed data three times, with the fourth disclosure for 2024 submitted in September. In 2023, Sunderland received its third 'A' Grade (Leadership Status) for the submission. The city is currently 1 of 23 in the UK and 1 of 120 globally to receive this recognition, out of over 1,100 that disclose.

Plans and Policies

6.2.3 The Council's Business Continuity and Strategic Framework plan was reviewed in May 2023 with input from the Low Carbon Team. The plan now clearly recognises the growing threats of climate change to business continuity and states as an action that the Council needs to build up its resilience to severe weather impacts and prepare for climate change to minimise disruption or costs associated with damage to properties, declining productivity, illness and accidents, changes to prices or availability of raw materials, changes in the availability and cost of insurance, and impact on global supply chains.

6.2.4 The Council's Community Wealth Delivery Plan has been refreshed and agreed, and all Area Plans have also been updated to support the citywide Low Carbon Framework and the Council's Low Carbon Action Plan. The Low Carbon team continue to regularly engage with the five Neighbourhood and Community Boards.

6.2.5 Sunderland City Council is currently working on a joint Biodiversity SPD. A scoping report for the biodiversity SPD was consulted on in February 2020. The SPD will use locally relevant information on the distribution and abundance of species and habitats together with knowledge regarding the importance of biodiversity conservation to inform expected standards for the protection, enhancement and restoration of biodiversity. Where possible this will include building in resilience to climate change within measures taken to further these aims. The aim will also be to increase certainty on the standards of information used to demonstrate compliance with biodiversity related planning polices, where this is most appropriately included within the SPD rather than separate planning documents.

6.2.6 The SPD will also be written to complement the Local Nature Recovery Strategy (LNRS) being developed jointly by the local authorities for Gateshead, South Tyneside and Sunderland. The document will aim to provide clarity and guidance on discharging the mandatory biodiversity net gain requirement, which came into effect from February 2024. Linked with the development of the LNRS, the Council has undertaken a review of Local Wildlife Sites across the city which has included a number of amendments to existing site boundaries as well as the identification of new LWS sites for designation.

Green Infrastructure

6.2.7 Together with partners (including the Woodland Trust, the Forestry Commission, 6 Local Authorities and the North East Community Forest Team), the Council continues to progress delivery of the North East Community Forest. The NECF partnership continues to pursue its target to plant a minimum of 500 hectares by 2025 and will assist with tackling three global challenges: climate change, biodiversity, and improving both physical and mental health. In addition

to protecting and enhancing the city's existing canopy cover, the NECF helps to reduce the risk of flooding, create new habitat for wildlife, improve air quality, provide positive impacts on human health and wellbeing, boost the economy, provide new jobs, provide timber for sustainable building and energy production, and store thousands of tonnes of carbon. Additionally, the project will engage, work with and be supported by the wider community, which will include, but not be limited to NGOs, professional bodies and local partnerships, national infrastructure providers, businesses, community groups, the education and environment sector, private and public landowners, local environmental charities, the health sector, communities and individuals.

6.2.8 Within the first 3 planting seasons for the NECF partnership, Sunderland was awarded £869,000 funding, and with this has planted: 17,887 whips; 848 street trees / public realm standard trees; 311 orchard trees; 14,523 hedge plants across 2.6km of new hedgerow; 10.58ha of wildflower meadow seeding, and 30,600 bulbs. Within this total, Sunderland delivered 17.5ha of new tree planting in 2023/24. For the 2024-25 planting season, more trees are in the pipeline to be planted in a first tranche of works, with an additional tranche of planting proposed for delivery by March 2025.

6.2.9 The City Council is also working with the NECF and Earthwatch in delivering 'Tiny Forests'. These are intensely planted small copses that are community focused to help to encourage environmental education and community participation. The first Tiny Forest was delivered at Hudson Road Primary School in 2024, with a further school site to be developed in 2024-25. In addition, the Council's Environmental Services Team continues to make improvements to existing woodland plantations across the city, replacing dead and diseased trees, as well as pollarding and thinning of plantations to improve ground flora.

6.2.10 In March 2024 a community tree planting event took place at Silksworth Sports Ski Slope and Sports Centre. Around 25 volunteers (comprising of local residents and local business employees) helped to plant 1,100 trees across the site.

6.2.11 The Links with Nature (LwN) project (formerly known as Link Together) is a £2.1 million area-wide green infrastructure project to tackle 13 major greenspaces within the Coalfield area of Sunderland (including areas of Shiney Row, Houghton-le-Spring and Hetton-le-Hole). To deliver this project, Sunderland Council has partnered with the Durham Wildlife Trust, Wear Rivers Trust and Sunderland GP Alliance. This project draws on Section 106 funding (over £800,000) that has been received to date, through planning obligations, from local housing developments in the area. The project has been awarded £915,000 National Heritage Lottery Funding, together with £190,576 funding from Trees for Climate, £20,000 from Northumbrian Water Bluespaces funding and £200,000 from the Council's Coalfield Area Committee. LwN commenced in April 2024 and will run until July 2026. Key outputs include tree planting, enhanced natural greenspaces, woodland management and wetland creation

and enhancement - all of which will help to improve storage and sequestering of carbon across the 13 sites.

6.2.12 The Council is installing living roofs on bus shelters across Sunderland, as it continues to drive green infrastructure development to enhance local biodiversity. There are now 91 ‘bee bus stops/ living roofs’ and 72 also have solar panels. The work is being led Sunderland City Council and Clear Channel UK. Nicknamed 'Bee Bus Stops', living roofs have been specially designed by Clear Channel and expert ecologists to support native biodiversity, help create healthier local communities, and bring greenery back into urban areas. Each is planted with a mix of native wildflower species selected to aid and support bees and other pollinators, whose numbers are in decline.

6.2.13 The living roofs also help provide natural cooling to reduce heat stress, help absorb rainwater to help alleviate flooding, and filter fine dust particles from the air. They sit atop of brand-new shelters, finished to be in keeping with the city's existing shelters, and are built using a range of recycled materials. The Royal Society of Wildlife Trusts' independent third-party ecologists have classed the living roof product as being of 'high strategic significance', saying they can make a significant contribution to delivering Biodiversity Net Gain. These 91 shelters will be among the 137 bus shelters to have green roofs installed by Clear Channel in Sunderland.

6.2.14 In addition to living bus shelters, Sunderland is also constructing living walls. Two living walls made with over 50,000 plants and spanning 6,000ft^2 have recently been unveiled in the city centre at Farringdon Row multi-storey carpark in Riverside Sunderland.

Assessments

6.2.15 The Council’s Integrated Impact Assessment (IIA) has been reviewed and updated to further incorporate Low Carbon. The IIA allows the Council to assess the predicted impacts of policies, strategies, services, projects or functions, including commissioning and decommissioning decisions.

6.2.16 The Council’s Joint Strategic Needs Assessment (JSNA) was revised in September 2022 and is one of the statutory functions of the Health and Wellbeing Board (HWB), working in collaboration with partners and the wider community, to identify the health and wellbeing needs of the local population. It provides an insight into current and future health, wellbeing and daily living needs of local people and informs the commissioning of services and interventions to improve health and wellbeing outcomes and reduce inequalities.

6.2.17 The current JSNA report recognises how the quality of the built and natural environment, together with factors that relate to the need for reducing carbon

emissions, affect health in Sunderland. Evidence suggests, for example, that access to green spaces is beneficial to physical and mental wellbeing. Living within areas with low greenspace may also expose residents to impacts from extreme weather events. In terms of the built environment, our housing and neighbourhoods need to continue to be adapted to better cope with more extreme weather events, ensuring effective insulation and fuel efficiency for the winter months which will also help to tackle fuel poverty, and increasingly considering cooling and shading measures needed for extreme heat. The Council is currently in the process of reviewing and updating the JSNA.

6.2.18 Following feedback from the 2023 CDP disclosure, the Low Carbon Team has developed an initial science-based Climate Change Risk Assessment for Sunderland, aligned with the UK Climate Risk Independent Assessment (CCRA3). The Risk Assessment will form the basis of our Adaptation Plan for Sunderland. The risk assessment identifies climate risks across infrastructure; health, communities, and the built environment; business and industry; natural environments and assets. Existing levels of deprivation and inequalities including health inequalities, and the associated implications for net zero and overall interdependencies are factored into the risk assessment in addition to consideration being given to the potential for these to increase as a result of climate change.

6.2.19 The Climate Change Risk Assessment will be a working document, updated regularly with input from service area experts across the Council as well as from partners on the 2030 Shadow Board and beyond as appropriate. It will enable us, for example, to highlight particular areas of vulnerability specific to Sunderland. The risk assessment will then inform our Climate Change Adaptation Plan to mitigate these risks. Priority actions to reduce the risks identified and their impact will be taken forward as part of a strategic and co-ordinated approach to adaptation, working both locally and regionally as appropriate.

External Funding

6.2.20 The Council has a clear understanding of the most pressing areas for attention under its Low Carbon Action Plan and is active both in pursuing external funding and working to secure private sector investment aligned to these wherever possible. The Council's lead officer for external funding attends meetings of the internal Low Carbon Task Group as well as sharing funding opportunities on a regular basis. Throughout this report, external funding secured to support delivery of our strategic priorities is clearly referenced.

6.2.21 As one example, the Public Sector Decarbonisation Scheme (PSDS) funds capital energy efficiency and heat decarbonisation projects within public sector non-domestic buildings including central government departments and arm's length bodies in England. PSDS supports the aim of reducing emissions from public sector buildings by 75% by 2037, as set out in the 2021 Net Zero and Heat and Buildings strategies. Under PSDS Phase 3c, a successful bid was

made to support decarbonisation of 4 major operational buildings securing over £2 million of external funding. Measures to be installed will include air source heat pumps, solar panels, glazing improvements, wall and roof insulation, distribution upgrades, lighting and solar panels. The four buildings are Evolve business Centre, Bunnyhill Centre, Leechmere Independent Living Centre and the Museum and Winter Gardens. Work will commence at the sites from April 2025.

6.3 An Energy Efficient Built Environment

6.3.1 Activity in this area focuses on decarbonising the domestic and commercial built environment, including both existing and new properties. As set out in Sections 4 and 5 of this report, emissions within the Council's buildings and citywide domestic energy are key propriety areas where emissions reductions are required. The Council has both a direct delivery role as well as an enabling role, and securing resources through external funding programmes is currently key to enabling progress, as in several of the other priority areas below.

Domestic Energy (Existing Residential Buildings)

6.3.2 As part of the Department for Energy Security and Net Zero (DESNZ) Consumer Advice and Information Programme, the Council participates in the regional programme Local Authority Energy Demonstrator (LEAD) which is being delivered during 2024/25, following developmental work undertaken during 2023/24. Working directly with Energy Saving Trust and Groundworks North East & Cumbria the Council-led project offers local residents free, independent and impartial Retrofit advice and assessments. The project is piloting the use of QR codes, to enable residents to quickly and easily access retrofit recommendation plans. The project is also providing retrofit awareness training to local community leaders/charities/service providers to support engagement with harder-to-reach residents.

6.3.3 The LEAD project uses a data-led and community engagement approach to effectively identify, reach and engage residents in 9 priority groups outlined below:

Hard-to-Reach

- Vulnerable residents
- Fuel poverty
- Rural residents
- Mistrust or unwillingness to engage
- Private landlords (small/single property) (and their tenants)

Hard-to-Treat

- Blocks of flats and terraced properties
- Older and poorly performing properties
- Other hard-to-treat characteristics
- Single glazing or pre 2002 double glazing

6.3.4 In Sunderland, the LEAD project is in addition to existing energy advice services such as Citizens Advice & Green Doctors supported through the national ECO4 programme. The Council is currently delivering ECO4 within Sunderland, which runs until March 2026, working with energy obligated suppliers. ECO4 is aiming to support private sector low-income households with EPC ratings of D-G with retrofit measures, providing funding for energy-saving improvements such as insulation, heating upgrades, and renewable energy installations. The ECO4 scheme aims to take a 'whole house / fabric-first approach', initially focussing on improving insulation and reducing the need for heating within eligible properties / households.

6.3.5 Through the Green Homes Grant Local Authority Delivery Phase 2 project (LAD2), Sunderland City Council previously completed 455 retrofit measures across 225 properties to improve energy efficiency and reduce carbon emissions, through the project which completed in October 2022. The Council is now reviewing opportunities to secure further funding to support domestic retrofitting through the Warm Homes: Local Grant, which was launched in late September 2024.

6.3.6 Sunderland partners are working together to maximise and secure external funding to retrofit domestic properties. Gentoo, who manage properties for over 60,000 people in Sunderland have committed to all its properties having an Energy Performance Certificate rating of at least C by 2030. Between April 2020 and April 2024, £51 million has been invested by Gentoo in energy efficiency measures. By the end of March 2024, 20,830 Gentoo homes had an EPC rating of C or above, representing 72.9% of total properties which was a 10.75% increase compared to March 2023.

Domestic Energy (New Build)

6.3.7 The Council's current residential development programme will see the delivery of thousands of new homes across the city over the next 10 years. The Council is working with investors, developers and registered providers to promote the delivery of low carbon housing solutions and address the increased cost of living challenges. Vaux Housing is the Council's flagship residential development that promotes low carbon and renewable energy solutions and supports a new way of city centre living. The 135 homes at Vaux will be constructed using modern methods of construction (MMC) and will be built to 2025 Future Homes standard (75% carbon reduction against 2013 Building Regulations). All townhouses and maisonettes will be bult to EPC A and all apartments to EPC B. Key carbon reduction features include passive and fabric first design principles, high levels of insulation, air source heat pumps, photovoltaics, battery storage, EV charging points, and provision for future connection to a city centre heat network. Vaux housing will also be connected to a smart energy network to effectively manage consumption, reduce waste and mitigate impact of rising energy costs. Materials and components will be locally sourced and selected based on their carbon performance in

manufacture, construction and operation, and the ability for future recycling and re-use. The scheme is supported by £6m of Levelling Up Fund investment and a further £2m of ERDF funding has provided initial support facilitating the delivery of the Vaux Smart Energy Network. Aside from the Future Homes Standard the development is also targeting a number of accreditations including RIBA 2025 Embodied Carbon target, Home Quality Mark 4 Star rating and Building Nature 'Excellent' standard.

Council Assets

6.3.8 Over the last 6 years, the Council has replaced over 48,000 streetlights across the city with LED lighting. Since the start of the project in November 2016, this has reduced annual energy consumption from streetlighting by over 21,000MWh, and delivered annual carbon savings of 4,724 tonnes based on 2023 carbon intensity factors for electricity and transmission and distribution. This means the increase in emissions shown in Section 4.3.7 for streetlighting (due to a 7% increase in carbon intensity of the National Grid) would have been greater if this investment had not been made. In addition to the street lighting replacement scheme, the Council has also delivered LED lighting to street lit signs in 2023/24 and further LED lighting upgrades to parks, associated buildings and traffic signals are ongoing and will deliver additional carbon and energy savings.

6.3.9 As part of our Planned Property Capital Maintenance programme the Council is also replacing inefficient heating systems, upgrading building fabric and installing LED lighting and sophisticated heating control systems on a phased basis.

<u>Public Sector Decarbonisation Scheme Phase 3C</u>

6.3.10 The Public Sector Decarbonisation Scheme (PSDS) funds capital energy efficiency and heat decarbonisation projects within public sector non-domestic buildings including central government departments and arm's length bodies in England. PSDS supports the aim of reducing emissions from public sector buildings by 75% by 2037, as set out in the 2021 Net Zero and Heat and Buildings strategies. Under PSDS Phase 3c, a successful bid was made in 2023/24, to support decarbonisation of 4 major operational buildings securing over £2 million of external funding. Measures to be installed will include air source heat pumps, solar panels, glazing improvements, wall and roof insulation, distribution upgrades, lighting and solar panels. The four buildings are Evolve business Centre, Bunnyhill Centre, Leechmere Independent Living Centre and the Museum and Winter Gardens. Work will commence at the sites from April 2025. The Museum and Winter Gardens bid will also support a Heritage Lottery Fund application and other external funding grant programmes. Energy savings are expected to be 2687 MWh equating to 243.16 tonnes of carbon.

Smart Buildings

6.3.11 Sunderland City Council are working with their Smart Cities partner Boldyn Networks to introduce IoT technology in our largest buildings to increase the granularity of energy use, reduce carbon emissions and energy costs and then transition to low carbon heating technologies and further energy efficiency investment.

6.3.12 Initially, the Council worked to provide Boldyn with key information such as half-hourly data, floorplans, technical drawings and BMS. Boldyn then conducted site visits to install CO_2 sensors to provide more detailed monitoring for several months. This also involved integrating the solution with Boldyn Communication's LORAWAN network as part of the Council's Smart City Joint Venture. Monitoring was undertaken throughout the project and early reports provided some quick solutions to improve energy efficiency. The Council implemented changes based on these recommendations and the final reports on the Evolve and Leechmere centres were provided to the Council in April 2022. These reports presented data which showed the impact of the early recommendations and provided the Council with a range of further short-medium and long-term recommendations to decarbonise each building.

6.3.13 After the successful pilot, the Council is continuing its partnership with Boldyn and is scaling the project up to help address emissions from further properties. This process will be undertaken in phases, with the next phase of the project focusing on a further 10 buildings. This includes a mixture of Council, Together for Children and Sunderland Care and Support properties and consists of a mixture of offices, business centres, depots, schools and museums. The carbon savings from short-term actions taken so far at Evolve and Leechmere equates to 111 tCO_2e, with the potential to achieve a further 76 tCO_2e from recommended longer-term measures. As part of the next phase of the project, it is expected that further emissions savings will be achieved as the Council continues to decarbonise a further 10 buildings it is projected that work on the further 10 buildings could lead to carbon savings of 839 tCO_2e, following the completion of all proposed capital works.

Non-Domestic Buildings (Citywide)

6.3.14 Sunderland City Council is currently delivering the second Business Renewables Energy Efficiency Sunderland (BREEZ2) project, which is helping Small and Medium-Sized Enterprises (SMEs), as well as local community organisations, to install energy efficiency measures. BREEZ2 is funded through UKSPF, with an overall objective to reduce energy consumption and enable carbon reduction in a cost-effective way. This is being achieved by upgrading old, inefficient systems with new, energy-efficiency upgrades that have been approved and agreed in line with the programme's eligibility criteria prior to their installation. Typically, BREEZ2 offers 50% grant funding towards

microgeneration (e.g., Photovoltaics), insulation, low-carbon heating upgrades and LED lighting. At the end of the project in March 2025, it is anticipated that over 120 businesses and community groups will have been contacted and advised, 67 SMEs fully engaged (including audits, advice and guidance). With all BREEZ2 grants committed across the project lifetime and, with 50% match funding attracted from SMEs and Community Groups.

6.3.15 Skills work to support retrofit, and Modern Methods of Construction (MMC) has been developed through HICSA and further details are included in the Green Economy section of this report.

6.4 Renewable Energy Generation and Storage

6.4.1 Activity in this area includes work in relation to the Council's operational estate, feasibility exercises in relation to mine-water heating, district heating systems, heat zone development, as well as energy generation to facilitate economic development.

6.4.2 Proposals have been developed for PV at 40 primary schools and several operational buildings on an Invest to save basis. Solar PV will be installed at Leechmere Independent Living Centre as part of the Public Sector Decarbonisation Scheme (PSDS) Phase 3C works and a bid is currently being prepared for PSDS Phase 4, which is likely to include further sites where Solar PV will be installed.

6.4.3 Since late 2022, until early 2024 Sunderland City Council has installed approximately 1.6 MW(p) of solar PV at 11 sites. This investment also includes in excess of 3MWh of associated battery storage. Based on 2023/24 carbon intensity factors and electricity prices these solar panels will generate approx. 1440 MWh per annum and save an anticipated 324 tonnes of carbon and reduce cost by £400,000 per annum. Proposals have been developed for PV at 40 primary schools and several operational buildings on an Invest to save basis.

6.4.4 The Council, with funding from the Department for Energy Security and Net Zero (DESNZ), is in the process of procuring a private sector funder/operator to commercialise and deliver district heating for 'Sunderland Central'. The Council has adopted a Joint Development Agreement (JDA) procurement approach which was launched in 23/24 and continues throughout 2024 with an outcome expected at end of 2024/25. If successful it's anticipated an initial phase could supply in the region of 39,000MWh of heat per year, saving upwards of 4,000 tCO2e when compared with gas, for a fully built Sunderland Central network these figures are likely to increase significantly.

6.4.5 In autumn 2021 DESNZ consulted on proposals for the implementation of Heat Network Zones in the England to support development of citywide district heating opportunities. The overall aim of this was to develop heat networks in zones where they can provide the lowest cost low carbon heat to the end-consumer in England through regulation, mandating powers, and market support. Sunderland remains 1 of 28 pilot cities which continues to inform DESNZ with developing and piloting their methodology for heat network zoning – previous engagement with major and large energy users among the city's business community and public sector, has helped to inform what Heat Network Zoning could look like in Sunderland. The indicative output of this work helped shape the prospectus for the JDA process, as well as DESNZ further consultation on Heat Network Zones.

6.4.6 Work continued during 2023/24 to support development of cost-effective green energy at the International Advanced Manufacturing Park (IAMP) including development work for an electricity 'Microgrid' with the Council working closely with industry partners aligned to energy requirements in the area.

6.5 Low Carbon and Active Transport

6.5.1 Activity in this area includes work to improve sustainable transport, enabling the transition to walking and cycling, public transport and electric vehicles.

Walking and Cycling

6.5.2 The Local Cycling and Walking Infrastructure Plan (LCWIP) document, which was adopted by Cabinet in October 2022, sets out a plan for walking and cycling infrastructure delivery in Sunderland. It provides a comprehensive framework to guide Sunderland City Council and its partners regarding planned walking and cycling infrastructure over a ten-year period. The plan is used to support funding applications to enable delivery and in taking planning and design decisions regarding transport schemes more broadly, including active travel.

6.5.3 The geographical scope of this LCWIP is the area within Sunderland City Council's boundary. The Council continues to monitor and review how the Sunderland's network links to those of neighbouring authorities. The plan has to-date enabled 106 miles of cycle network, 1500 miles of path and 109 miles of public rights of way, increasingly segregated in line with current Government policy. Sunderland has ambitious plans for growth and regeneration. The council continues to look at the existing cycling network across the city, assess potential future routes and improve cross boundary links with the aim being to create a high-quality cycling network with signage across the city.

6.5.4 Funding from the City Regional Transport Settlement (CRSTS) and Active Travel England's Active Travel Fund (ATF) will allow the introduction of eight new, high quality, segregated cycle routes across the City. This will result in 16 kilometres of new cycling infrastructure by 2027 – an investment of £23.2m to encourage more active transport in Sunderland.

6.5.5 Construction is underway for a new pedestrian and cycle bridge at Riverside Sunderland, connecting the city centre to the northern side of the river, and is due to be completed in summer 2025.

6.5.6 All businesses and developers in the city are required to have a sustainable travel plan linked to planning applications and the Active Travel team also offer support to businesses and community organisations across the city to develop travel plans to support their employee wellbeing, as well as their organisational low carbon ambitions.

6.5.7 The Sustainable Transport Team continue to work annually in collaboration with Knight Frank to create annual staff surveys to enable updates to the Travel Plan for City Hall. The Travel Plan aims to reduce single occupancy car use and create a modal shift to walking, cycling and travelling by public transport to the building. Further Travel Plans during 2023/2024 were also progressed for other buildings across the Council's operational estate including Leechmere, Parsons Depot, Bunny Hill, Jack Crawford House, Museum & Winder Gardens, Washington Arts Centre, South Hylton House, Sandhill Centre, Stansfield Centre, Thorney Close Action & Enterprise, ICT Moorside.

6.5.8 The team have also been successful in bidding for work to generate income by creating Travel Plans and conducting Staff Travel Surveys for businesses. Following a 3-year project with IAMP partners this work was extended for an additional year into 2024/2025. Work involved creating Travel Plans for SNOP & FALTEC, conducting Staff Travel Surveys each year, producing reports from results and holding active travel events. Bi-monthly meetings are held with IAMP partners including Nissan, SNOP, FALTEC, AESC, Esh Construction, Wates, Naylors, Nexus, and representatives from the Council to share best practice and keep up to date with any road works or closures in the vicinity.

6.5.9 The Council continues to work closely with Better Points, an app that tracks travel movements via GPS using smartphones and rewards participants with points for using more sustainable modes of transport like walking, cycling and using public transport as a pilot project. Approximately 1,593 users have registered for the app as at the end of the 2023/24 financial year and engagement rates have been very high throughout the project. During 23/24 a total of 526,165 activities were recorded, 48,045 miles were cycled, over 28,096 trips recorded, and 163,524 miles were walked over 232,421 trips. Sunderland therefore avoided 105,680 Co2 (kg) and burned 23,820,761 calories travelling actively & sustainably. The Council recently extended its partnership with Better Points for a further year, until March 2025, and is also currently

investigating if the App can be incorporated into the Sunderland App to further increase reach across the city.

6.5.10 The Council continues to facilitate a Cycle to Work Scheme, which in 2023-24, received 35 completed orders to the value of £31,315 which will offset an estimated 1969 kgCO_2e from employees (estimate provided by the Cycle to Work provider).

6.5.11 The Capability Fund is allocated to support the development of the LCWIP, scheme design, engagements and consultations, cycle training, cycle maintenance, cycle security and active travel communications. It has been used for cycle training & Dr Bike Sessions at Thompson Park and Balance Bike Sessions in schools since 2021 as well as the development of an area focused LCWIP in Washington. During 23/24 1668 participants from across the city have benefited from the following activities, working in partnership with the voluntary and community sector.

- Guided bike rides
- Learn to ride sessions
- Cycling confidence sessions
- Dr bikes maintenance sessions
- Walking litter picks
- Led walks

6.5.13 The Council has been awarded an additional £30k from Public Health's Healthy City Grant to continue with the 'Park That Bike' scheme in Sunderland that supplies free cycle parking to business and organisations to encourage more residents to cycle, through until the end of March 2025. The 'Park That Bike' scheme since its launch up until the end of March 2024, has supported 83 organisations to receive 127 cycle stands. From these figures 38 Schools / University Buildings have applied for cycle parking.

6.5.14 The Council has 4 E-Bikes which are all located in the Cycle Store facility in City Hall. They are available for business trips to improve micro-mobility options for staff, and throughout 2023/2024 their availability has been promoted through staff induction.

6.5.15 The Council was also awarded £2.1 million Active Travel Funding during 2023/2024, to create the Ryhope Road Cycle route, leading from the City Centre to Grangetown, which will create 2km of segregated off-road cycleway. The work is currently underway and due to complete during 2024/2025.

Smart Transport

6.5.16 Self-driving vehicles will help deliver passengers and cargo in and around Sunderland during 2024/25, after two projects were awarded a share of £84 million in joint government and industry support for self-driving transport

technology. £42 million in government funding is being matched by a further £42 million from industry.

6.5.17 Project V-CAL, being led by the North East Automotive Alliance (NEAA), will run up to 4 zero-emission autonomous HGVs around the Nissan Sunderland site, on private roads where the vehicles will navigate traffic lights, roundabouts, and other road users. This is a major step towards deploying the technology on public roads. The partnership bringing together Vantec, Nissan Motor Manufacturing UK (NMUK), StreetDrone, Nokia, Newcastle University, ANGOKA, and Womble Bond Dickinson (UK) LLP, was awarded £4 million by government, matched by industry to a total £8 million. The HGVs will operate without any personnel on board but will be monitored by a remote safety driver as backup. This builds on the successful 5GCAL (5G Connected and Automated Logistics) project which piloted the UK's first automated 40 tonne truck, powered by 5G, at Vantec in Sunderland.

6.5.18 The Sunderland Advanced Mobility Shuttle project will trial self-driving zero emission technology, which will transport passengers on public roads between Sunderland Transport Interchange, the Sunderland Royal Hospital, and the University of Sunderland City Campus. Whilst safety drivers will always be onboard, the project will develop and demonstrate a cyber secure remote supervision protocol, an important step towards commercial deployment. The project was awarded £3m by the government, matched by industry to a total £6 million and is led by Sunderland City Council in partnership with Stagecoach, ANGOKA Ltd, Newcastle University, Swansea University, and Boldyn Networks.

Electric Vehicles

6.5.19 An Electric Vehicle Delivery Plan has been developed as one of the commitments within the Low Carbon Action Plan. This has been informed by a Sunderland EV Study conducted by Jacobs and sets out how the Council will take forward the parts of the LCAP focused on embedding electrification and de-carbonisation into the council's replacement plan for fleet as well as supporting the transition to zero emission vehicles across the city by residents, partner organisations and business. Specifically, the plan looks at council fleet replacement, grey fleet / business travel, transport policy, planning, infrastructure delivery, stakeholder engagement, public transport and the taxi sector. The intention is to continue to implement the plan overseen by the internal EV Delivery Group and keep actions under review. A feasibility study and an infrastructure road map was completed during 2023/24 to identify appropriate locations for community-based EV charging in phases. This is now in delivery phase.

6.5.20 The £9.1 million redevelopment of Parsons Vehicle Workshop and Depot in Washington was completed in 2023/24 and is now operational. The building acts as an electric vehicle charging hub for the council's fleet of vehicles, utilising a large 400kW array of roof mounted solar PVs and 2MWh battery storage units. The site also features 6 rapid 50kW electric vehicle chargers and approximately 25 fast chargers (comprising 22kW units). This will support the ongoing electrification / decarbonisation of the Council's fleet.

6.5.21 Local Electric Vehicle Infrastructure (LEVI) fund is intended to encourage large scale, ambitious and commercially sustainable projects that leverage significant private sector investment to support the rollout of electric vehicle charging infrastructure. In February 2023, the UK government launched £8m of funding for the LEVI Capability Fund for the financial year 2022/23, and local authorities subsequently submitted proformas on how they intended to utilise their allocation. On 30/03/23 government launched a further £37.8m of funding, covering 2023/24 and 2024/25. The Council submitted the required proforma, working in conjunction with the region, to ensure it continues to be eligible to receive 2023/24 and 2024/25 funding.

6.5.22 Sunderland secured £493,568 Pilot LEVI grant funding in 2023, to commence delivery in 2023/24, towards a £822,612.70 project supporting the delivery of 219 fast charging outlets for residents at Riverside Sunderland and on-street locations. This includes funding for 115 wall-mounted charge-point sockets at Riverside Sunderland Multi-Storey Car Park as well as residential on-street charging / an EV Community Hub supporting 104 outlets at 20 locations across the city. Sunderland has also secured revenue grant support of £54,000 for both 2023/24 and 2024/25 (£108,000 total) as part of an overall regional submission by the North East Combined Authority (NECA) which sought £1,133,348. The Council also secured revenue grant which has enabled additional staffing resources during 2023/24 and 2024/25 to map EV charging availability across the city, to ensure the city is making informed investment decisions, and ensuring EV is available across all communities. The Council has funded additional On-street and Destination charge points linked to the EV Delivery Plan.

6.5.23 On-street Residential Charge Point Scheme Round 1 (ORCS) works were completed in March 2023 (grant worth £69,300 initially secured in January 2021). This saw 10 EV charging points for use by residents where off-street parking was unavailable at Harbour View in Roker, Morgan Street in Southwick, Ocean Road in Grangetown, Aldenham Road in Lakeside Village and Market Street in Hetton. A further round of ORCS funding has been secured during 2023/24 to deliver 28 charge-points at 15 locations sited within residential areas. The work is underway and due to be completed during 2024/25. A pilot scheme is also underway to install gully channels at 30 locations to help facilitate charging on-street by residents not having access to driveways or off-street parking, this work has commenced during 2024/25.

6.5.24 The regional Levelling Up Fund Round 2 proposal, focused on EV infrastructure, has been successful. As well as supporting buses to be converted to electric. Sunderland secured £667,000 during 2023/24 to support the delivery of three rapid charging hubs. The planning and design work is currently underway, and the charge-point operator is now appointed, installation planned for 2024/25.

6.5.25 The Mobility Hub at City Hall continues to progress. Since 10 Nissan Leafs arrived in March 2022, the mobility hub is now operational for employees, with 416 employees being registered users as of March 2024. It is expected that in the future the hub will also be of particular benefit to the 10,000 people who will eventually work from Riverside Sunderland, as well as the 2,500 residents who will live in the area when the site is fully developed. Linking with the 216kW PV array with battery storage installed in October 2023 at St Mary's Multi Storey Car Park (where the vehicles are located) has created the opportunity during 2023/24 for the Electric Vehicle miles to be powered by renewable electricity.

6.5.26 Ten new state-of-the-art street sweepers commenced work across the city during 2023/24 and one of these is fully electric. The sweepers have a small turning circle so that they can access more areas and, as well as brushing up the highways, they can be adapted for use as winter maintenance gritters, snow ploughs, and as mini tractors for load carrying. The total number of Council fleet EV vehicles, as of September 2024 is 69, which equates to sixteen per cent of the total fleet.

6.5.27 In addition, 20 E-Vans have been ordered and will be delivered in October 2024, to help further decarbonise the Council's operational fleet. Charging infrastructure facilities were progressed during 2023/24 with installation completed and operational from in September 2024 at the Sandhill Centre for use by Together for Children, and at Leechmere for SCAS.

Other

6.5.28 A 'School Streets' trial scheme was launched in April 2022, with streets temporarily closed to tackle problem parking. A trial street closure was operated at St Bede's Catholic Primary School Washington to address road safety concerns and improve air quality, and during 2023/24 the measures were made permanent. The Council continues to explore opportunities to extend and expand the School Streets approach.

6.6 Green Economy

6.6.1 Activity in this area has focused on inward investment and supporting existing green economy businesses to grow, as well as supporting the wider business community to become more environmentally sustainable.

6.6.2 During 2023/24, 4 green sector projects have secured over 150 jobs and £550,000 capital investment. As a couple of examples, this has included investment from AR Power and Endiprev.

6.6.3 As at the end of 2023/24, there are a total of 10,057 jobs in 41 businesses engaged in the green sector in the city. [Note, this includes Nissan, on the basis that it is in the process of transitioning its business model to be 100% electrified by 2030].

6.6.4 Work is nearing completion on the construction of the AESC gigafactory at the International Advanced Manufacturing Park. The gigafactory is a key part of the EV36Zero project, a £1billion project announced in July 2021 to create an EV eco-system that will create green jobs and transition to the manufacturing of green cars powered by renewable energy. This will create an additional 1,000 jobs at the gigafactory at the International Advanced Manufacturing Park. The significance of Electric Vehicle and Battery manufacturing for the region's economy was reflected in development of the NE Investment Zone (announced in November 2023) focused on Advanced Manufacturing and Green Industries.

6.6.5 The Port of Sunderland is developing as a strategic Advanced Materials handling hub focused on circular economy activity. Norwegian company Wastefront is about to start construction of a £100 million, 11,175 sq. m. material recovery plant processing end-of-life tyres on a 2.8 ha site, creating 30 jobs. 'Trinity Rail, Road & Sea Enterprise Zone' at the Port has been prepared for development, with 4.5 ha of brownfield land capable of accommodating 20,000 sq.m. of floorspace. Leo Group, who first signed their lease in October 2022, operate a 20-silo terminal at the port which is used for the export of Tallo which directly goes into the sustainable aviation fuel market, Leo Group plans to expand during 2024/25. In addition to the above the Port supports the offshore renewables industry by acting as a mobilisation base for vessels supporting the construction of the Dogger Bank and the Sofia wind farms. The Port of Sunderland recently announced that it was collaborating with Northen Metal Recycling to offer offshore decommissioning services at the Port.

6.6.6 In addition to the above the Port supports the offshore renewables industry by acting as a mobilisation base for vessels supporting the construction of the Dogger Bank and the Sofia wind farms. The Port also recently announced that it was collaborating with Northen Metal Recycling to offer offshore decommissioning services.

6.6.7 Opportunities to raise awareness of good sustainability practice within businesses in the city are regularly sought and PR produced to highlight this. Similarly, new green businesses locating or growing in the city are promoted via PR.

6.6.8 Sustainable awards and events to recognise best practice are promoted to the business community in the city and application support provided to those who require it. Support has recently been provided to a key employer with their application for the King's Award for Sustainable Development.

6.6.9 Utilising UKSPF in Sunderland, BREEZ2, a decarbonisation grant scheme to support businesses and community organisations in the city, is currently being delivered as noted in section 6.2 of this report, through the lifetime of the scheme a reduction in 502 tCO_2, is anticipated.

6.6.10 To facilitate skills development with education and business partners to support green economy growth, Sunderland Council and Sunderland College (Education Partnership North East) are working closely with industry to develop the Housing Innovation Construction Skills Academy (HICSA) at Riverside Sunderland which will provide education and training opportunities, linking to Research & Development to ensure the skills of the region meet the future needs of industry linked to modern methods of construction (MMC). The partnership includes close cooperation with Sunderland-born architect George Clarke's Ministry of Building Innovation and Education (MOBIE). Sunderland has become an official training partner of The Retrofit Academy CIC and HICSA has been licensed to become an official Retrofit Academy Hub for the North East Mayoral Combined Authority area. HICSA is scheduled to open in Spring 2025.

6.6.11 To raise awareness and understanding of the climate agenda within businesses, a sustainable business toolkit, initially focussed primarily on sustainable travel, was developed during 2023/24. The Council has also commenced initial conversations to provide businesses with a platform to signpost to the most appropriate carbon footprinting tools based on their size and stage in their low carbon journey. Building on this, work is ongoing to support Sunderland Business Improvement District (BID) to deliver the Low Carbon commitments outlined in the BID business plan.

6.6.12 Working with North East Screen and partners, Sunderland based businesses are being supported to capitalise on the supply chain opportunities arising from the developing screen industry sector in the North East, which includes specialist support to help achieve the Albert standard, a sustainable accreditation for screen productions. Preparation work was carried out to enable a dedicated event to be held in October as part of the Sunderland Business Festival 2024 programme.

6.6.13 Representatives from the City Council have supported the region's presence at a key national event at Cenex Expo (electrification) in September 2023 and September 2024, promoting the city to potential investors in this key green economy sectors.

6.6.14 Businesses are regularly signposted towards access to finance opportunities specific to the green economy / decarbonisation. Grant/ finance opportunities were shared with relevant businesses across the city during 2023/24 (in addition to raising awareness of the Council delivered BREEZ2 scheme).

6.6.15 Volunteering opportunities linked to the environment and low carbon are regularly shared with key employers in the city. Employers such as VolkerStevin and TSB are two of the key businesses engaged in this activity.

6.6.16 Alongside all key employers in the city, businesses operating in the green economy receive the same dedicated account management service from the Business Investment Team aftercare programme, regardless of size or sector, demonstrating their importance to the city.

6.6.17 In response to interest from local schoolchildren in green careers, the Business Investment and Low Carbon team have worked together to produce a series of videos featuring some of Sunderland's leading green businesses. The videos, which were first recorded during the Autumn of 2023, showcase what each business does, how it relates to sustainability, the people who work there, the skills needed for different roles, and potential routes that pupils can follow to build a career there in the future. The videos show both younger and more senior staff and the diverse career paths they have taken, including vocational, apprenticeships and academic routes. The videos are being shared with pupils in Key Stage 2 to Key Stage 4 and are promoted to all schools in the city, as well as being featured in toolkits and shared more widely across social media. Work is ongoing to engage with further employers to continue video development.

6.7 Consumption and Waste

6.7.1 Activity in this area includes household recycling, waste collections, as well as initiatives to reduce consumption and improve access to local and sustainable food.

Reuse and Recycling

6.7.2 As part of the South Tyne and Wear Waste Management Partnership, Sunderland has a target to increase household recycling rates to 55% by 2025, 60% by 2030 and 65% by 2035. In 2023/24 (the most recent year data is available), the recycling rate was 29.8%. In 2024/25 significant work is being undertaken to help improve citywide recycling rates.

6.7.3 Following the state-of-the-art Household Waste and Recycling Facility and re-use shop at Pallion being opened in 2022. From opening in November 2022 until July 2024, 200 tonnes of waste had been diverted from EfW via the reuse shop, equating to an estimated 2,432 kgCO2e. The recycling facility is capable of handling more than 1 million visits annually as the Council seeks to encourage high levels of recycling across the city. The split-level design makes it easier for householders to use the waste containers, with no steps to climb, and operationally it is possible to change over the waste containers without having to temporarily close the site. The new facility is more efficient, with better facilities and opportunities to recycle and re-use more waste materials. This is designed to increase the amount of household waste recycled, reduce congestion and be more user friendly for residents. The site also includes a purpose-built recycling/re-use shop. Re-usable items such as furniture, working electrical items, clothing, bikes, toys, books, CDs, bric-a-brac and other household items can be donated directly to the re-use shop, where donations can then be sold on at low prices to be enjoyed by somebody else.

6.7.4 The Council is working to raise awareness of recycling opportunities within schools and other settings, both through visiting schools to deliver talks and workshops and by encouraging visits to the STWWMP Waste and Recycling Visitor Education Centre. In 2023/24, 43 sessions were offered (39 in school and 4 tours) involving 42 schools and 3269 children. Building on this, since opening, between 2014 – 2024, over 18,000 children and local residents have engaged with Campground Waste and Recycling Visitor and Education Centre. School events included zero waste lunch workshops, zero-waste cooking activities, site visits, assemblies and bird feeder workshops. In addition, community events have been run by the centre throughout Sunderland, with participation from International Community of Sunderland, Sunderland Students Union, Social Chef and Grundfos Sunderland during 2023/24. This included litter picks, reduce/reuse/recycling talks and food waste events.

6.7.5 The Council introduced a ‘No Side Waste’ Policy in November 2022 as a rolling system, with the no bag policy coming into effect on 1st April 2023. It is intended that this will help to help reduce waste generation and promote responsible consumption and waste habits in households.

6.7.6 Pursuing the development of the council’s commercial waste & recycling service into a charge-by-weight collection model continues to be a key priority. During 2023/24 the Council finalised plans to invest in technology and digital functionality. This initiative will provide improved value, and information, to customers (internal and external) by charging based on the weight and type of waste removed, and significantly incentivise improvements in recycling by customers.

Single-use plastics (SUPs)

6.7.7 Refill Sunderland was launched on 16th June 2022 (to mark World Refill Day) to reduce single use plastic waste in the city. Refill is an award-winning behaviour change campaign led by Not-for-Profit organisation 'City to Sea' to help people live with less waste by providing a platform to connect them and their communities to places they can eat, drink and shop without single-use plastic packaging. Refill Sunderland supports businesses and consumers locally to transition towards reuse systems and tackle of plastic pollution. Refill Sunderland provides a platform for new stations to register and provides help to promote them. As at the end of the 2023/24 financial year, the number of Refill stations had increased to 130 and work is ongoing to increase further uptake, linking the Refill App with the emerging Sunderland App as well as continuing to promote the campaign with businesses across the city.

6.7.8 Work is ongoing to encourage beach, river and greenspace clean ups to remove SUPs. For example, 'The Litter Free for Wildlife' project, funded by the Council's Coalfield Area Committee is a two-year project running from September 2024 to 2026 working with Durham Wildlife Trust to deliver lessons on the damage litter can cause in both local waterways and the ocean. Activities include litter picks and a trip to the Waste Education and Recycling Centre for every school in the Coalfield area.

6.7.9 To improve sustainable waste within school meals, SUPs have been completely removed from primary schools and commercial catering where this is provided by the Council. Furthermore, all disposables in the school meals provided by the Council's in house service and civic / commercial catering are recyclable, biodegradable or compostable.

Sustainable Food

6.7.10 Significant work has been undertaken by the Council's school meals service (a service focused on all Sunderland schools who buy their school meals service from the Council) continues to retain the Bronze Food for Life Served Here certification, which was most recently accredited in July 2024, and the Green Kitchen Standard across all primary schools. The Food for Life Served Here Bronze award provides assurance to schools that the food being services is healthy, fresh, tasty, seasonal, sustainably and ethically sourced and traceable in terms of its province. The Green Kitchen Standard, which is a national certification developed by the Soil Association and Carbon Trust recognises caterers that undertake best practice to sustainably manage energy, water and waste.

6.7.11 The Evolve pre-order system has been implemented in schools to minimise food waste. As at the end of the 2023/24 financial year, 6 primary schools were signed up to the system.

6.7.12 The Council is supporting schools to achieve the Bronze Food and Nutrition Charter Mark, which was initially rolled out in 2021 as an element of the Sunderland Healthy Schools Award. Any Sunderland education setting can apply to the bronze level. There is significant focus on environmental sustainability including plant-based and planet-friendly diets, waste minimisation and seasonal eating among other initiatives. As at the end of 23/24 there were 10 educational settings accredited at bronze level across early years, primary and secondary. The silver level is being developed for the 2024/25 academic year, with the gold level to follow.

6.7.13 The Sunderland Good Food Partnership has developed a 'Sustainable Food Vision' for the city. The vision was written following the 'Sustainable Food Summit' held with residents in April 2023 and has continued to be led by the public health Sunderland Food Partnership Coordinator. The vision is to "Work together to develop a local food system that delivers healthy, affordable, sustainable food for everyone in Sunderland'. Working with partners across the city, the Food Partnership then produced a Food Action Plan in January 2024. One of the visions and subsequent action points is focused on sustainable food, although actions which will reduce carbon are also incorporated through the rest of the plan. The Food Partnership coordinator manages the delivery of the Action Plan and is focused on enabling residents to access healthy food as well as further develop allotment sites in the city and community growing spaces.

6.7.14 Since December 2023, The Food Partnership also hosts Virtual Picnics. These online events, which are open to all during 23023/24, have focused on school food and growing. Sunderland also is currently working to bring together partners from all relevant sectors across the city to agree local priorities for improving the food system, implement the food strategy and action plan, and support a long-term approach for reducing food insecurity. These plans consider numerous priorities relating to health inequalities, poverty and hunger, and building a more prosperous, secure and diverse local food economy, as well as helping to tackle critical sustainability issues such as food waste.

6.7.15 Vegan options have been made available at the Brew and Bake café within Sunderland City Hall during 2023/24.

Allotments and Community Growing Spaces

6.7.16 There has been a significant increase in allotments in use, and the Council continues to bring empty plots back into use, moving from 350 voids in 2022 to only 145 voids in quarter 2 of 2024.

6.7.17 There have been several changes to the allotments policy, primarily to assist operations, and the Council has implemented a policy on small sites which back

onto terraced housing, where these sites are ringfenced to those terraces, to foster local community spirit and reduce travel to these urban gardens

6.7.18 Increasing allotment capacity through the development of new sites has proven difficult due to scarcity of available land in areas where there is highest demand. However, the Council is seeking to utilise council land in the East area, which will be a test bed for a new kind of urban allotment site, including small plots, with no livestock, small sheds only, and rainwater collection.

6.7.19 In addition, during 2023/24 9 new gardens have been created at the Tunstall Hill Extension and two council gardens have been allocated to community groups, one being the Back on the Map project in Hendon, where the Council supported the project to secure additional community growing space, utilising uncultivated plots at Corporation Rd. The Council were also able to support the project to secure lottery funding. The Council also supported a residents' group in Houghton to establish a community garden at the Gravel Walks site.

6.7.20 During 2023/24 it became clear that residents would value additional information, advice and support to help to manage their allotment effectively. Allotment packs are being developed, to launch in 2024/25, to support new allotment holders who may not have had any experience of allotment management or local growing in the past. The packs will contain information which includes soil management, maintenance, tips and myths, links to useful online resources, social media groups and apps, recommended reading, useful numbers and contacts, and pest prevention.

6.7.21 Sunderland is passionate about enabling residents to grow their own food sustainably. A community garden has been created during 2023/24, through funding secured from UKSPF, just outside the Museum & Winter Gardens, adjacent to Mowbray Park. The garden officially opened in October 2024. The community garden is enabling local people and community groups to learn how to grow food and support sustainable living practices. The Council is working closely across all departments to grow the community garden offer in Sunderland, recognising the importance of open green space and the space and support to enable residents to grow food and increase their knowledge.

Garden Waste

6.7.22 The Council continues to actively promote its garden waste collection scheme on an ongoing basis to improve uptake. The Council provides collections from April – November annually.

7 Appendix A – Summary of Changes to Methodology / Data Availability

Emission Source	Summary of Changes
Gas consumption	No change
Vehicle fleet	No change from 2023 - Consumption data is fuel consumption
Purchased electricity generation	No change
Purchased goods and services	No change
Leased assets	Brings together ‘scope 3 gas’, ‘scope 3 electricity’ and ‘scope 3 vehicle fleet’ from previous annual reports
Employee commuting	No change
Business travel	No change
Fuel and energy related activities	Along with transmission and distribution, now includes datasets for well-to-tank emissions

8 Appendix B – Glossary of Terms

Term	Definition
Capital Goods	All upstream (i.e., cradle-to-gate) emissions from the production of capital goods purchased or acquired by the reporting company in the reporting year.
Carbon Budget	An amount of carbon dioxide that a country, company, or organisation has agreed is the largest it will produce over a particular time period.
Carbon Footprint	The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community.
Carbon Intensity	The amount of carbon by weight emitted per unit of energy consumed.
Carbon Neutral	Making or resulting in no net release of carbon dioxide into the atmosphere.
Climate Emergency	A situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it.
DESNZ	The Government Department for Energy Security and Net Zero.
Environmentally Extended Input Output	Environmentally extended input output (EEIO) models estimate energy use and/or GHG emissions resulting from the production and upstream supply chain

	activities of different sectors and products within an economy. The resulting EEIO emissions factors can be used to estimate GHG emissions for a given industry or product category. EEIO data are particularly useful in screening emission sources when prioritising data collection efforts. For this report, EEIO data was used to calculate emissions from purchased goods and services in the 2022/23 financial year.
Fugitive Emissions	Fugitive emissions from refrigeration and air conditioning result from leakage and service over the operational life of the equipment and from disposal at the end of the useful life of the equipment. The leakage of refrigerant gas is a small but significant source of GHG emissions because of a high Global Warming Potential associated with these GHGs.
Greenhouse Gas Protocol	Greenhouse Gas Protocol provides standards, guidance, tools and training for business and government to measure and manage climate-warming emissions.
Grey Fleet	A grey fleet vehicle is one owned and driven by an employee for business purposes. The employee is reimbursed on a pence per mile basis for using their private vehicle on business journeys. Vehicles used by employees under cash allowance schemes are considered grey fleet too.
Low Carbon Framework	The citywide Low Carbon Framework focuses activity around seven strategic priorities, putting people at its heart - changing our behaviours, changing our organisational policies and practices, and setting out five thematic areas under which work will be taken forward. These focus on the built environment, green economy, low carbon energy generation and storage, consumption and waste, and low carbon and active transport.
Low Carbon Action Plan	The Council's Low Carbon Action Plan sets out how the Council will seek to deliver strategic priorities of the Low Carbon Framework as an organisation. The Action Plan is structured around the same seven strategic priorities as the Low Carbon Framework. Individual partner organisations are each developing an Action Plan if they have not already done so
LULUCF	Land Use, Land Use Change and Forestry sector.
Paris Agreement	The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.
Scope 1	GHG emissions directly from operations that are owned or controlled by the reporting company.

Scope 2	Indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company.
Scope 3	All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.
Tyndall Centre	The Tyndall Centre is a partnership of universities bringing together researchers from the social and natural sciences and engineering to develop sustainable responses to climate change. The Tyndall Centre work with leaders from the public and private sectors to promote informed decisions on mitigating and adapting to climate change.
Upstream Purchased Goods	All upstream (i.e., cradle-to-gate) emissions from the production of products purchased or acquired by the reporting company in the reporting year.