

Sunderland City Council (Final Draft)

Annual Carbon Data Report
2020/21

Executive Summary

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.

In 2020/21 Sunderland's 2030 Shadow Board prepared the Low Carbon Framework which set out the approach for Sunderland to achieve citywide carbon neutrality by 2040. This was adopted by the partnership in December 2020. The Council then endorsed the Low Carbon Framework in January 2021 and at the same time adopted its Low Carbon Action Plan which included a target for the Council to become carbon neutral by 2030.

This annual carbon emissions report is the Council's first carbon data monitoring report since the citywide Low Carbon Framework was endorsed and the Council's Low Carbon Action Plan was adopted. It is also the first carbon data monitoring report published since 2016/17 and covers the Council's emissions and Sunderland's citywide emissions in turn. It provides a baseline estimation for the annual greenhouse gas (GHG) emissions for Sunderland City Council in the 2020/21 financial year, as well as citywide carbon emissions for Sunderland in the 2019 calendar year (the latest year for which city-wide data is currently available).

The report sets out that the Council's scope 1 and 2 carbon footprint during 2020/21 was 8,546tCO₂e, representing a 13.2% reduction from the previous year and a 62.5% reduction since 2016/17. The main sources of emissions from Council operations in 2020/21 were gas consumption and purchased electricity for Council buildings. Streetlighting and electricity in Council buildings experienced the greatest reduction in the Council's scope 1 and 2 emissions since 2019/20, with annual reductions of 23% and 22% respectively. Gas consumption and the vehicle fleet remain the greatest decarbonisation challenges for the Council, with emissions from gas falling by 0.4% and emissions from the vehicle fleet increasing by 3.8%.

Although the Greenhouse Gas (GHG) Protocol advises organisations to prioritise making reductions in scope 1 and 2 emissions due to a higher degree of control, the Council is also currently going through the process of trying to better understand its scope 3 emissions. This is therefore the first year where the Council's scope 3 (value chain) emissions have been calculated as part of the carbon data monitoring report. Based on current data availability, scope 3 emissions for the Council are estimated to have accounted for 20,061tCO₂e in 2020/21 (70% of overall emissions). The main sources of scope 3 emissions for the Council are purchased goods as well as buildings (such as schools) which are part of the Council's property portfolio but where emissions are not within its direct financial control (e.g., schools).

On a citywide level in 2019 (the latest year for which data is available) 1.187m tonnes of CO₂ were emitted in Sunderland, representing a 5.8% decrease from 2018 levels and 15.2% from 2015 levels. The main causes of CO₂ emissions in Sunderland in 2019 were domestic energy (emitting 411,500 tonnes CO₂, mainly due to gas) and transport (emitting 403,500 tonnes CO₂, mainly due to roads). A net 8,700 tonnes were also offset by the Land Use, Land Use Change, and Forestry (LULUCF) sector. Given the 15.2% reduction identified above (from 2015 to 2019), Sunderland is on the way to meeting the recommended interim target suggested by the Tyndall Centre for 2015-2020 of a 16.1% reduction which is aligned with the city's overall carbon budget covering the period 2018 to 2100. Continued focus on reducing emissions across the city will however be essential each year if the interim targets recommended by the Tyndall Centre are to be achieved on an ongoing basis including the proposed reduction of 14.4% reduction annually from 2020 onwards.

Annual emissions from all sectors decreased across the city as a whole between 2018 and 2019. Emissions from the industrial and commercial sector experienced the greatest reduction, with 17% and 8% respectively. Domestic gas and road transport remain the greatest challenges to decarbonisation at a citywide level, experiencing annual reductions of 3% and 2% respectively between 2018 and 2019. These challenges are also a national challenge and Sunderland has performed slightly better than the UK average in decarbonising both sectors since the 2015 baseline for the city.

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1. Introduction

This report provides a baseline estimation for the annual greenhouse gas (GHG) emissions for Sunderland City Council in the 2020/21 financial year, as well as citywide carbon emissions for Sunderland in the 2019 calendar year (the latest for which city-wide data is available). This is the first annual carbon data report since the city-wide Low Carbon Framework was adopted by Sunderland Partnership, and then endorsed alongside the City Council's Low Carbon Action Plan by the Council's Cabinet in December 2020. The report also includes data not previously published between 2016/17 and 2020/21.

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. It should be noted that emissions for the 2020/21 year have been heavily influenced by COVID-19.

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 5 and 6 respectively. Section 2 briefly sets out the global context, through the Paris Agreement, for Sunderland's Low Carbon Framework and city-wide partnership approach to tackling climate change as well as the Council's Low Carbon Action Plan. In Section 3, the report covers Sunderland's first citywide carbon disclosure to CDP. The report then moves to focus in more detail on the City Council's annual carbon emissions. Section 4 defines the Council's current organisational boundary and sets out what is currently included within the scope of the Council's carbon emissions inventory (for scopes 1 and 2, and scope 3 respectively) as well as what is currently excluded. In Section 5, the report provides an overview of the Council's scope 1, 2 and 3 footprint for each financial year since 2016/17, before going into further depth for each source of emissions in turn. In Section 6 the report then focuses on Sunderland's citywide carbon footprint, providing a brief overview of city-wide emissions before breaking this down into the main sources of emissions within each sector and comparing this to the national average. It also includes illustrations of citywide emissions by Local Super Output Area (LSOA) for the first time. Finally, Section 7 provides a brief conclusion.

1.1. Sunderland City Council

The Council's scope 1 and 2 carbon footprint during 2020/21 was 8,546tCO₂e, representing a 13.2% reduction from 2019/20. Just over half of this reduction was due to the decarbonisation of the National Grid, with the rest due to lower energy consumption. The main sources of emissions from Council operations in 2020/21 were gas consumption and purchased electricity for Council buildings.

The Greenhouse Gas (GHG) Protocol advises organisations to prioritise making reductions in scope 1 and 2 emissions due to a higher degree of control. However, Sunderland City Council are also currently going through the process of trying to better understand our scope 3 emissions. Based on the current data available, scope 3 emissions for the Council are estimated to have accounted for 20,061tCO₂e in 2020/21 (70% of overall emissions). The Council hope to set a scope 3 emissions reduction target in the future, to bring our value chain with us on our Low Carbon journey and achieve a more robust monitoring process.

Sunderland City Council's inventory for the years 2019/20 and 2020/21 can be found on the next page.

| Scope | Source | Annual Emissions (tCO ₂ e) | | |
|---------------------------------|--|---------------------------------------|---------------------|----------------|
| | | 2019/20 | 2020/21 | Trend |
| Scope 1 | Gas Consumption (Council Buildings) | 2,408.74 | 2,399.79 | ↘ 0.4% |
| | Vehicle fleet (SCC / TfC) | 1,353.39 | 1,404.70 | ↗ 3.8% |
| | Total Scope 1 | 3,762.13 | 3,804.49 | ↗ 1.1% |
| Scope 2 | Electricity Generation (Council Buildings) | 3,060.19 | 2,399.54 | ↘ 21.6% |
| | Electricity Generation (Street lighting) | 3,025.12 | 2,341.90 | ↘ 22.6% |
| | Total Scope 2 | 6,085.31 | 4,741.44 | ↘ 22.1% |
| Scope 3 | Electricity Transmission & Distribution | 516.63 | 407.76 | ↘ 21.1% |
| | Water (Council Buildings) | 60.32 | 17.20 | ↘ 71.5% |
| | Vehicle Fleet (SCAS) | 174.44 | 177.38 | ↗ 1.7% |
| | Gas Consumption (Scope 3 Buildings) | 7,462.34 | 6,801.16 | ↘ 8.9% |
| | Electricity Generation (Scope 3 Buildings) | 4,175.27 | 3,235.31 | ↘ 22.5% |
| | Business Travel (inc. Hotel Stays) | 130.05 | 58.51 | ↘ 74.2% |
| | Employee Commuting | 2,453.83 | 598.62 ¹ | NA |
| | Upstream Purchased Goods | NA | 8,764.90 | NA |
| | Total Scope 3 | NA | 20,060.83 | NA |
| Total Scope 1 & 2 | | 9,847.44 | 8,545.93 | ↘ 13.2% |
| Total Scope 1, 2 & 3 | | NA | 28,606.76 | NA |

Table 1 - Sunderland City Councils Carbon Emissions, 2019/20 and 2020/21

1.2. Sunderland City

The Tyndall Centre has provided science-based recommendations for Sunderland to contribute a 'fair share' of 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, aligned with the goals from the Paris Agreement.

In 2019², 1.187m tonnes of CO₂ were emitted from the industrial, commercial, public, domestic and transport sectors in Sunderland, representing a 5.8% decrease from 2018 levels. A net 8,700 tonnes were also offset by the Land Use, Land Use Change, and Forestry (LULUCF) sector. Sunderland is therefore on the way to meeting the Tyndall Centre recommended interim 2015-2020 target, although a significant acceleration in carbon reduction will be required beyond then, as reflected by figure 1. The main causes of CO₂ emissions in Sunderland in 2019 were domestic energy and transport, as reflected in figure 2.

¹ In 2020/21 most staff were working from home for the duration of the year. Due to data availability, emissions have been calculated assuming all staff worked from home. In the next Annual Monitoring Report, emissions from both employee commuting and home working will be estimated for the first time.

² The 2019 figures represent the most up-to-date city-wide carbon emission figures and were published by BEIS in June 2021.

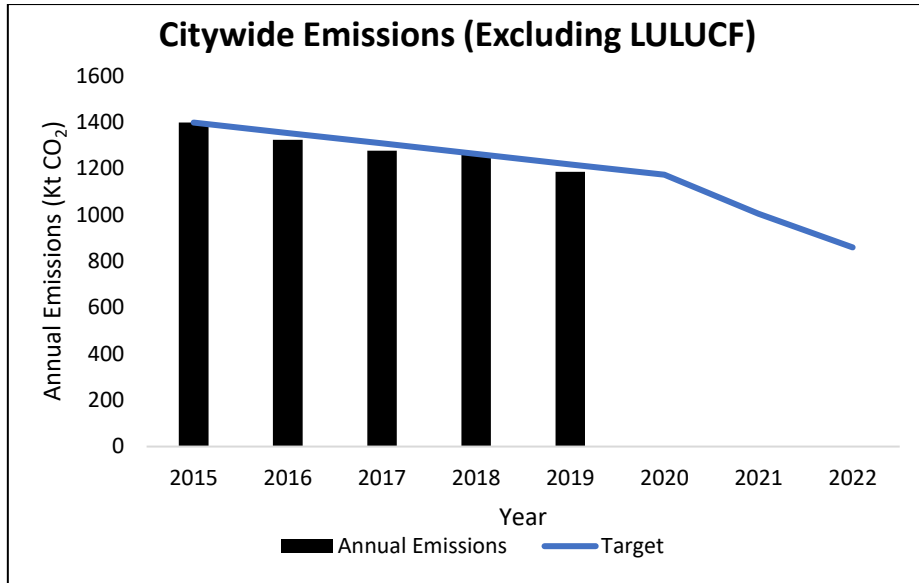


Figure 1 - Sunderland Citywide Emissions, 2015-2019 (BEIS, 2021)

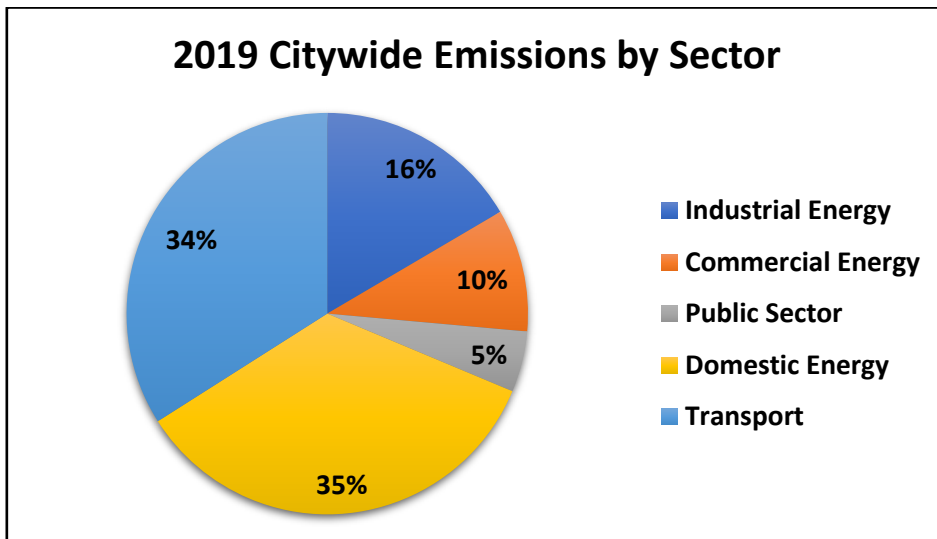


Figure 2 - 2019 Citywide Emissions by Sector (BEIS, 2021)

2. Context – Implications of the Paris Agreement for Climate Action in Sunderland

2.1. Sunderland City Council and the Climate Emergency

In recognition of the Paris Agreement, Sunderland City Council declared a climate emergency in 2019. The climate emergency declaration committed Sunderland to help to combat climate change by reducing citywide emissions and helping global temperature rise stay well below 2.0°C, and pursuing 1.5°C by 2050, in-line with the Paris Agreement of 2015.

2.2. Tyndall Centre Report – Quantifying the implications of the Paris Agreement for Sunderland

In order 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 Agreement³. 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 CO₂ 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.

Figure 3 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 CO₂ emissions, relative to 2015 levels. After 2020, it was advised that citywide carbon emissions should then be reduced by 14.4% annually.

The report also 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 by the Tyndall Centre has informed the 2040 carbon neutrality target for the city, set out within the Sunderland Low Carbon Framework.

To meet the goals of Sunderland's long term carbon budget, the Tyndall Centre also provides indicative recommended shorter-term carbon budgets and associated emissions reduction targets by a series of set dates. These recommendations are displayed in tables 3 and 4.

This carbon budget does not include aviation and shipping, as they remain a part of the national carbon budget only. The Land Use, Land Use Change and Forestry (LULUCF) sector, and non-CO₂ emissions are also considered separately from this budget.

³ <https://carbonbudget.manchester.ac.uk/reports/E08000024/print/>

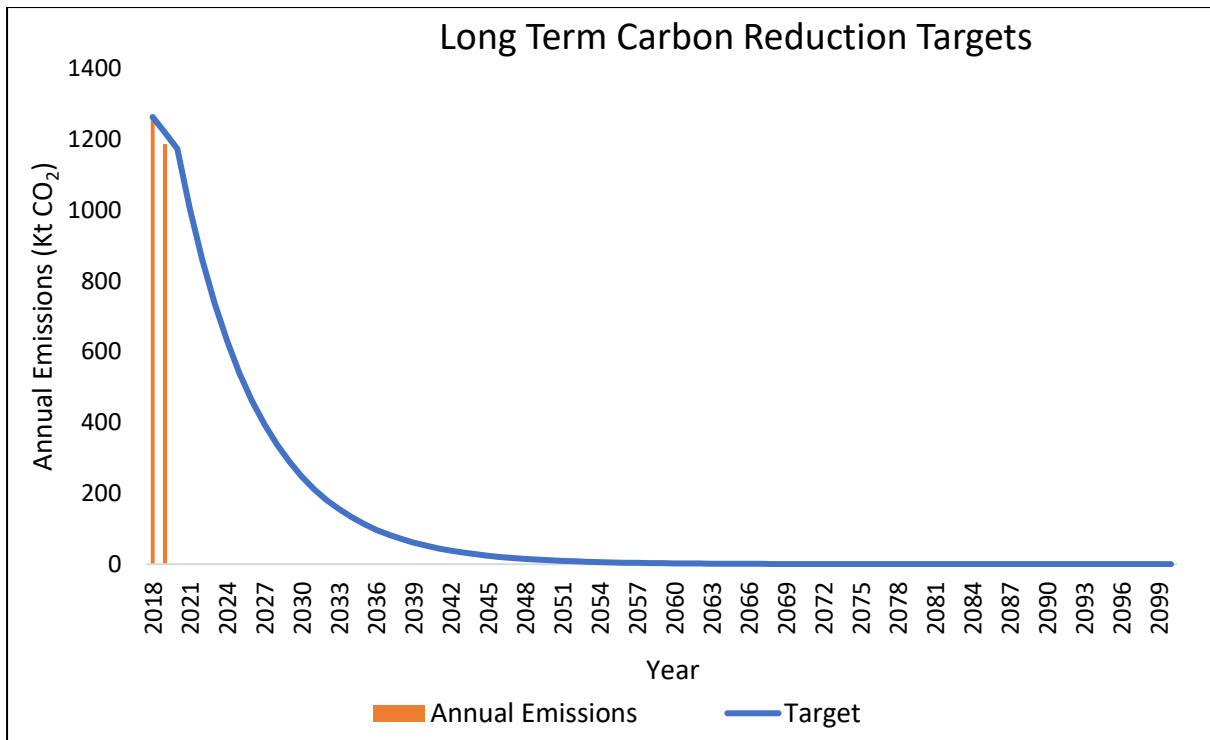


Figure 3 - Overview of the Citywide Carbon Budget

| 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 |

Table 2 - Interim Carbon Budgets recommended for the city (Tyndall Centre, 2021)

| Year | Reduction in Annual Emissions |
|------|-------------------------------|
| 2020 | 16.1% |
| 2025 | 61.5% |
| 2030 | 82.4% |
| 2035 | 91.9% |
| 2040 | 96.3% |
| 2045 | 98.3% |
| 2050 | 99.2% |

Table 3 – Interim 5-yearly annual emission reduction targets recommended for the city (Tyndall Centre, 2021)

2.3. The Citywide Low Carbon Framework and the City Council's Low Carbon Action Plan

In November 2019 Sunderland set up a partnership board known as the 2030 Shadow Board which is chaired by the Leader of the Council and brings together representatives from the following partner organisations across the city including the council, Together for Children, Sunderland Youth Parliament, South Tyneside and Sunderland's NHS Foundation Trust, NHS Sunderland Clinical Commissioning Group, the University of Sunderland, Sunderland College, Gentoo as well as the Police, Fire Service, Transport for the North, and business partners through the North East England Chamber of Commerce, together with councillors representing each of the political groups on the Council.

In 2020/21 Sunderland's 2030 Shadow Board prepared the Low Carbon Framework which set out the approach for Sunderland to achieve citywide carbon neutrality by 2040. This includes seven strategic priorities:

1. Our Behaviour
2. Our Policies and Operational Practices
3. An Energy Efficient Built Environment
4. Renewable Energy Generation and Storage
5. Low Carbon and Active Transport
6. Green Economy
7. Consumption and Waste

The Partnership adopted the Low Carbon Framework in December 2020. The Council then endorsed the Low Carbon Framework in January 2021 and at the same time adopted its Low Carbon Action Plan which included a target for the Council to become carbon neutral by 2030.

This annual carbon emissions report is the Council's first carbon monitoring report since the city-wide Low Carbon Framework was endorsed and the Council's Low Carbon Action Plan was adopted. The purpose of this report is to provide an estimation of current position, both for the Council and for the city, in relation to the respective goals for each. In turn this will provide a high-level overview to help to inform discussions surrounding decarbonisation priorities moving forward, both for the Council and for the city.

It is anticipated that the format of the annual report will be updated in future years to align with the strategic priorities identified within the Low Carbon Framework and Action Plan and that future reports will include more comprehensive data, particularly with regard to Scope 3 emissions, as this continues to become available.

3. Carbon Disclosure

In addition to this annual report, Sunderland City Council also disclosed citywide environmental data to CDP (formerly Carbon Disclosure Project) for the first time in July 2021. CDP is now widely viewed as the gold standard for environmental reporting, and disclosure allowed the city to report the same information as 1,000 other cities around the world.

CDP provides in-depth feedback to cities based on the quality of their disclosure, their low carbon ambitions, and the actions they are taking to mitigate and adapt to climate change. 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'.

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

In November 2021, it was announced that Sunderland received a grade A and was recognised as a global leader in the fight against climate change. Sunderland was one of 11 cities in the UK, and 1 one of 95 cities globally, to receive this recognition.

4. Sunderland City Council - Scope 1, 2 and 3 Emissions

4.1. Introduction

In-line with the GHG Protocol Corporate Standard, Sunderland City Council's GHG emissions are 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.

The Council's carbon neutral target covers scope 1 and 2 emissions.

4.2. Organisational Boundary

When determining the organisational boundary, a financial control approach was taken, whereby assets which are not under the Council's direct financial control (for example, school buildings), will be classified as scope 3. The Council has limited direct influence on reducing these emissions.

4.3. Council Scope 1 and 2 Emissions

Scope 1 and 2 emissions for the Council includes four areas:

- the Council's (inc. Together for Children) vehicle fleet (scope 1);
- gas consumption in Council buildings (scope 1);
- the generation of purchased electricity for streetlighting in the city (scope 2); and
- the generation of purchased electricity in Council buildings (scope 2).

4.4. Council Scope 3 Emissions

The Council currently has the capacity to report on scope 3 emissions from the following sources:

- Emissions from business travel (including air, rail, grey fleet and hotel stays);
- Water supply and treatment;
- Electricity transmission and distribution;
- Sunderland Care and Support's (SCAS) vehicle fleet;
- Gas consumption in buildings for which are on the Council's property portfolio, but not in its direct financial control (e.g., school buildings / fire stations);
- Electricity generation for buildings which are on the Council's property portfolio, but not in its direct financial control (e.g., school buildings / fire stations / SCAS buildings / leisure);
- Council employee commuting / working from home emissions
- Upstream purchased goods.

The Council currently holds limited data in relation to scope 3 emissions, however is working to improve this, which will be reflected in future monitoring reports.

4.5. Currently Excluded / Out of Scope

There are several likely sources of emissions currently excluded from our emissions inventory. Fugitive emissions (for example, from refrigerant gases, air conditioning and heat pumps) are currently excluded from scope 1 due to a lack of data. 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.

Likely sources of emissions currently excluded from scope 3 include purchased services, capital goods and waste generated in operations. The Council is aiming to continually develop its carbon emissions inventory in the future, to provide a more complete picture of our performance each year.

5. Sunderland City Council's Footprint Since 2016/17

Table 2⁴ shows a record of Sunderland City Council's carbon emissions which are currently reported on. Historically, scope 1 emissions have been fluctuating while scope 2 emissions have been declining. The Council previously only recorded business travel in scope 3 and are now developing this inventory.

| | | Annual Emissions (tCO ₂ e) | | | | | |
|---------------------------------|--|---------------------------------------|------------------|------------------|-----------------|---------------------|--------------|
| Scope | Source | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 5 Year Trend |
| Scope 1 | Gas Consumption (Council Buildings) | 1,960.37 | 2,092.03 | 2,299.56 | 2,408.74 | 2,399.79 | ↗ |
| | Vehicle fleet | 1,662.77 | 1,532.25 | 1,513.20 | 1,353.39 | 1,404.70 | ↘ |
| | Total Scope 1 | 3,623.14 | 3,624.28 | 3,812.76 | 3,762.13 | 3,804.49 | ↗ |
| Scope 2 | Electricity generation (Council Buildings) | 6,090.05 | 4,974.82 | 3,773.52 | 3,060.19 | 2,399.54 | ↘ |
| | Electricity generation (Streetlighting) | 13,075.20 | 9,526.37 | 4,907.04 | 3,025.12 | 2,341.90 | ↘ |
| | Total Scope 2 | 19,165.25 | 14,501.19 | 8,680.56 | 6,085.31 | 4,741.44 | ↘ |
| Scope 3 | Electricity Transmission & Distribution | 1,733.50 | 1,355.83 | 739.97 | 516.63 | 407.76 | ↘ |
| | Water (Council Buildings) | 44.20 | 17.02 | 55.88 | 60.32 | 17.20 | ↘ |
| | SCAS Fleet | 169.40 | 189.05 | 187.80 | 174.44 | 177.38 | ↗ |
| | Gas Consumption (Scope 3 Buildings) | 8,772.17 | 8,286.49 | 7,271.63 | 7,462.34 | 6,801.16 | ↘ |
| | Electricity Generation (Scope 3 Buildings) | 8,994.22 | 7,145.80 | 5,414.79 | 4,175.27 | 3,235.31 | ↘ |
| | Business Travel (Grey Fleet) | NE | NE | 95.02 | 88.51 | 54.03 | ↘ |
| | Business Travel (Rail) | NE | NE | 17.35 | 17.67 | 0.27 | ↘ |
| | Business Travel (Air Miles) | NE | 65.96 | 104.46 | 14.59 | 0.48 | ↘ |
| | Hotel Stays | NE | 17.34 | 9.99 | 9.28 | 3.73 | ↘ |
| | Employee Commuting | NE | NE | 2,344.55 | 2,453.83 | 598.62 ⁵ | ↘ |
| | Upstream Purchased Goods | NE | NE | NE | NE | 8,764.90 | NA |
| | Total Scope 3 | / | / | / | / | 20,060.83 | NA |
| Total Scope 1 & 2 | | 22,788.39 | 18,125.47 | 12,493.32 | 9,847.44 | 8,545.93 | ↘ |
| Total Scope 1, 2 & 3 | | / | / | / | / | 28,606.76 | NA |

Table 4 - Sunderland City Council's Emissions Inventory, 2016/17 to 2020/21

⁴ This is the first year we have started recording data for scope 3 emissions.

⁵ In 2020/21 most staff were working from home for the duration of the year. Due to data availability, emissions have been calculated assuming all staff worked from home. In the next Annual Monitoring Report, emissions from both employee commuting and home working will be estimated for the first time.

5.1. Sunderland City Council 2020/21 Scope 1 and 2 Emissions

Figure 4 shows the trend for the Council’s scope 1 and 2 emissions over the last five years.

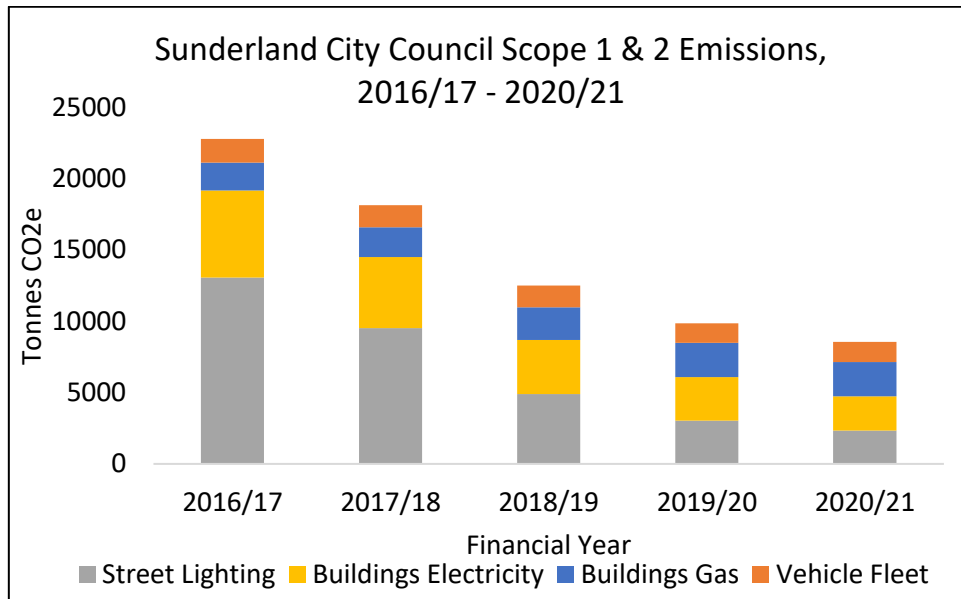


Figure 4 – Council Scope 1 and 2 Emissions, 2016/17 – 2020/21

Annual scope 1 and 2 emissions reduced by 1,302 tonnes (13.2%) from 2019/20 to 2020/21. Just over half of this reduction was due to the decarbonisation of the National Grid. The influence of the COVID-19 pandemic will have also contributed to this reduction, with staff spending a large proportion of the year working from home, reducing the demand for energy in buildings. The reductions were mainly seen across scope 2, with slight increases in scope 1. Since 2016/17, the Council’s scope 1 and 2 emissions have reduced by 62.5%.

The main sources of emissions from Council operations in 2020/21 were gas consumption and purchased electricity for Council buildings, which both emitted 2,399 tonnes CO₂e. The largest reductions in emissions from Council operations were seen in purchased electricity from streetlighting (22.6%) and Council buildings (21.6%). Emissions from gas consumption reduced by 0.4% and emissions from the vehicle fleet increased slightly by 3.8%. This slightly contradicts the longer-term trend since 2016/17, which sees reductions in annual emissions from the vehicle fleet and purchased electricity but increases in emissions from gas.

5.2. Council Scope 1 Emissions

Figure 5 shows the breakdown of scope 1 emissions since the beginning of 2016/17. The following pages discuss these results in more detail.

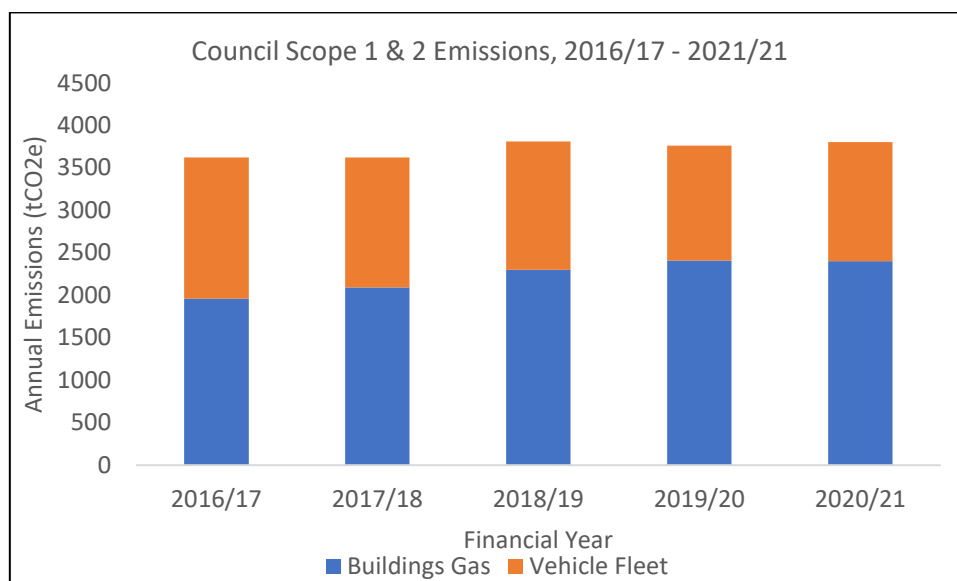


Figure 5 - Council Scope 1 Emissions, 2016/17 – 2020/21

5.2.1. Gas in Council Buildings

Gas accounts for 63% of scope 1 emissions for the Council and is now the main source of all operational scope 1 and 2 emissions, having overtaken purchased electricity generation for both streetlighting and Council buildings last year.

Figures 6, 7 and 8 provide detail on where our gas emissions come from, as well as notable changes in demand across our estate during the previous financial year.

The Council estate is currently operating in Covid-safe mode, in line with central Government guidelines. This requires higher ventilation levels than usual to circulate air. Consequently, heating must also run at an increased level to regulate temperature to a 'normal' level. These factors impact significantly on carbon emissions 2020/21 and are expected to do so for the immediate future.

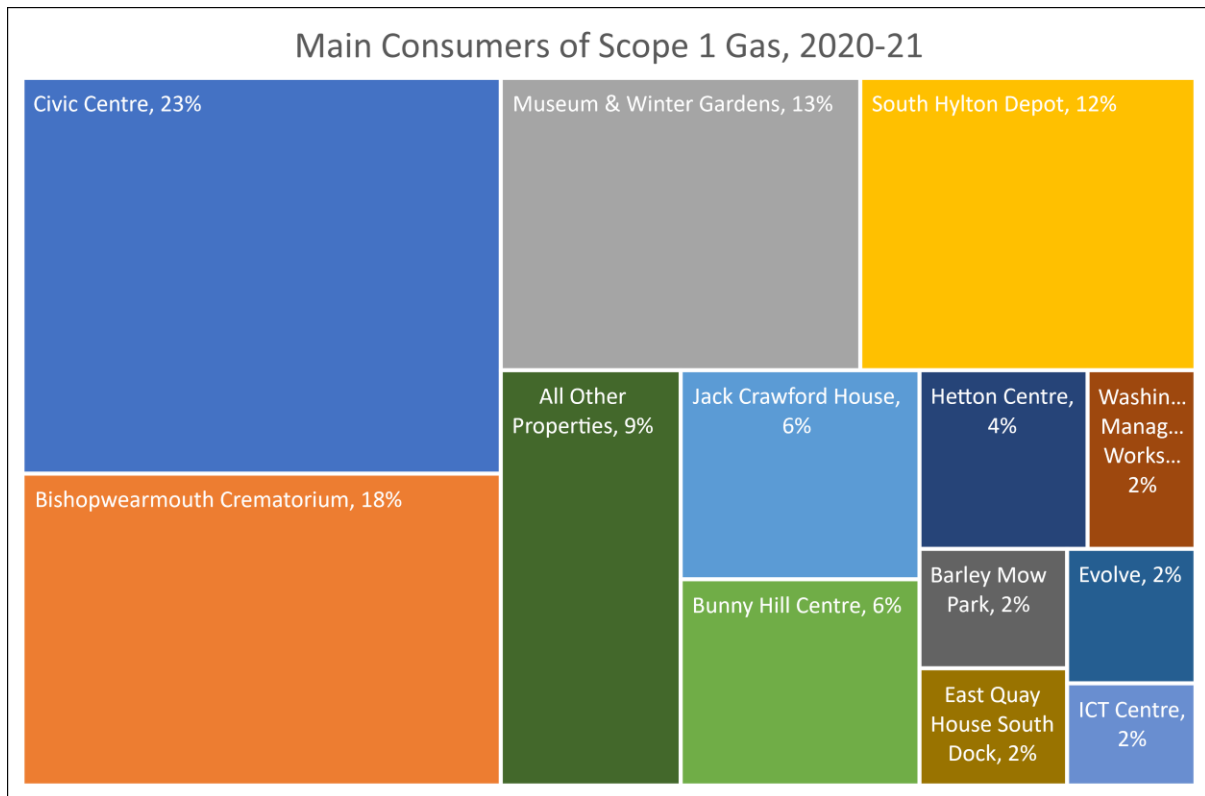


Figure 6 - Main Consumers of Scope 1 Gas, 2020/21

As can be seen in Figure 6, a relatively small proportion of our buildings account for a relatively large proportion of our gas consumption, with 7 of the 30 properties defined within our scope 1 and 2 boundary for gas accounting for over 80% of emissions. It should be noted however that the Civic Centre is the single largest consumer of gas. As part of the relocation of services from the Civic Centre to the new City Hall, this should help to significantly reduce emissions in future years.

Figures 7 and 8 show the buildings where consumption has increased or decreased from 2019/20 to 2020/21.

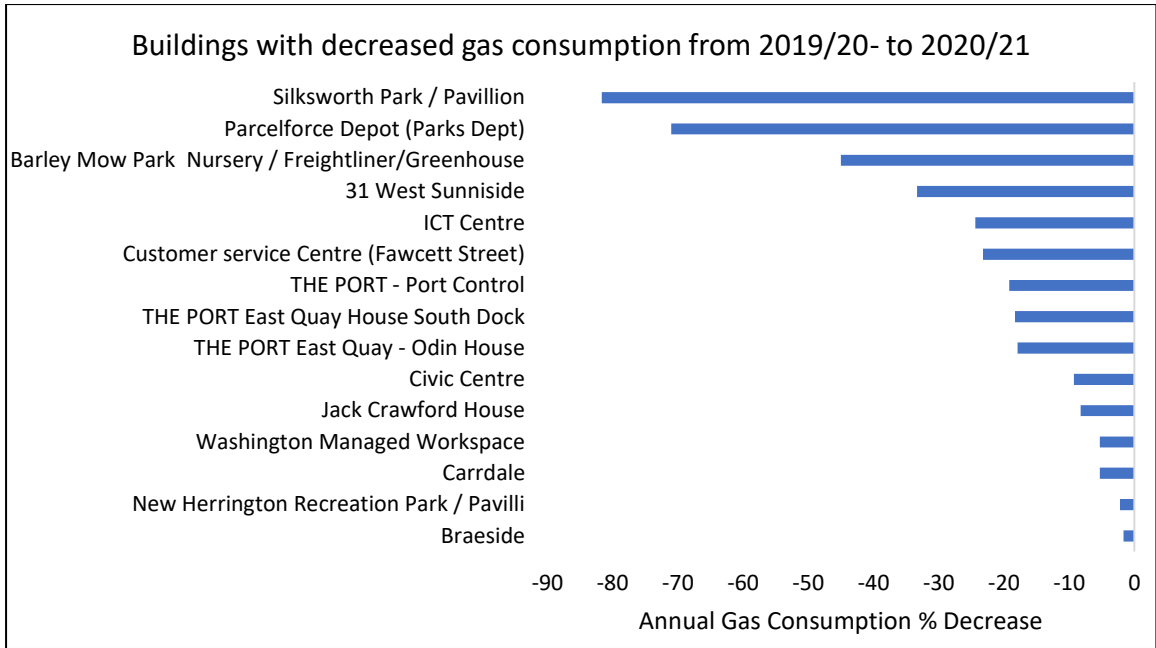


Figure 7 - Buildings with Decreased Gas Consumption, 2019/20 to 2020/21

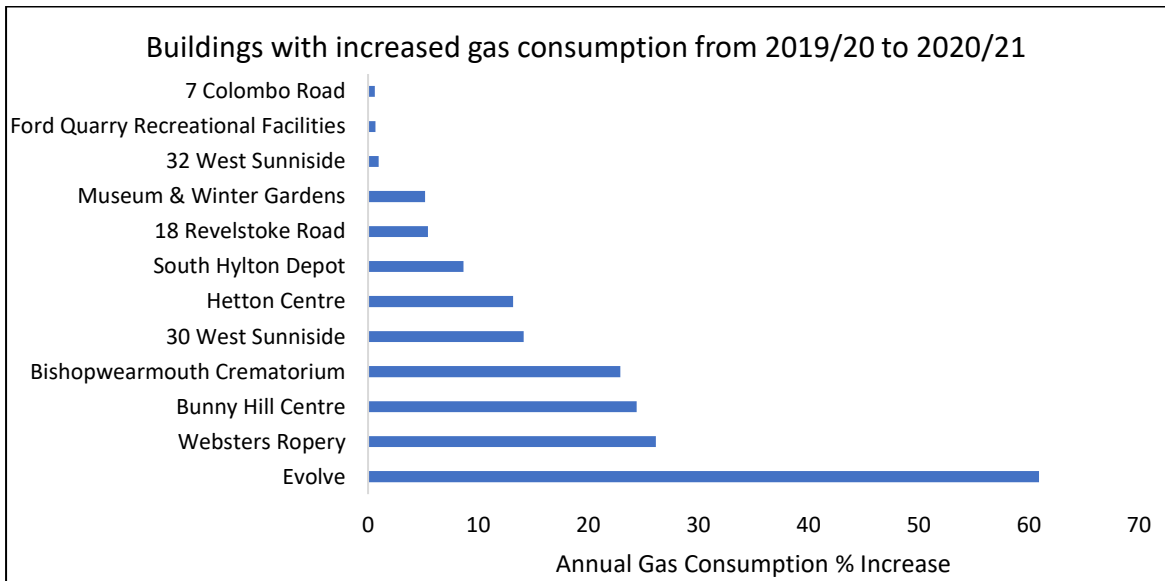


Figure 8 - Buildings with Increased Gas Consumption, 2019/20 to 2020/21

For most properties where gas consumption has significantly decreased, this is heavily influenced by the property either being closed or operating at reduced hours due to COVID-19. The Parcel Force Depot was also demolished during 2020/21. For most properties where gas consumption has significantly increased, this is heavily influenced by the building remaining open and consequently having to operate in COVID-19 safe mode, with increased ventilation and therefore heating. The crematorium has also been operating extended hours with a temporary extra cremator. Finally, Bunny Hill Centre was also used as a vaccination centre so had extended operating hours.

5.2.2. Vehicle Fleet

The vehicle fleet accounted for 37% of scope 1 emissions for the Council in 2020/21. This is the only source of emissions within the Council's scope 1 and 2 footprint where emissions in 2020/21 from the previous year. Figure 9 shows annual emissions from the fleet since 2016/17.

Emissions from the Council's own vehicle fleet have experienced an overall reduction since 2016/17, although increased slightly in 2020/21 from the previous year. Together for Children's fleet emissions are fluctuating marginally each year.

It should be noted that emissions from electric vehicles are currently recorded elsewhere in purchased electricity. 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 included in future reporting years.

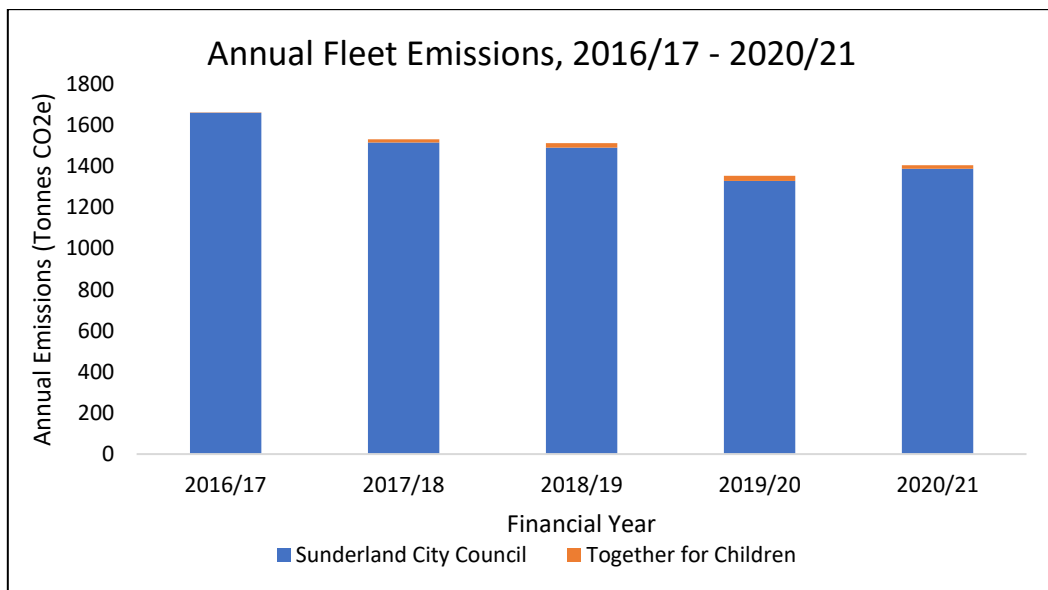


Figure 9 - Annual Fleet Emissions, 2016-17 - 2020/21

Figure 10 shows that HGVs are mainly accountable for the carbon footprint within our fleet, with Figure 11 showing that refuse collection is the main source of emissions.

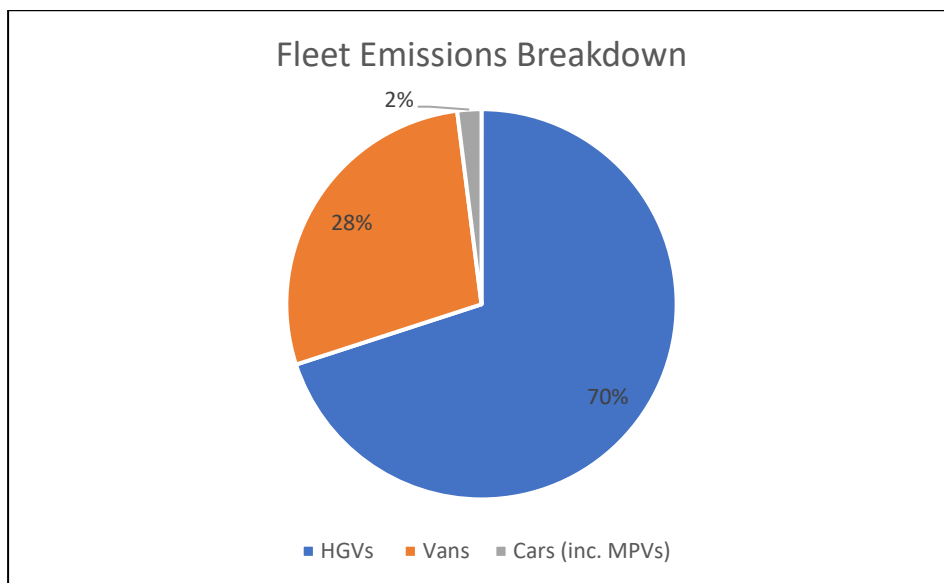


Figure 10 - Fleet Emissions Breakdown, 2020/21

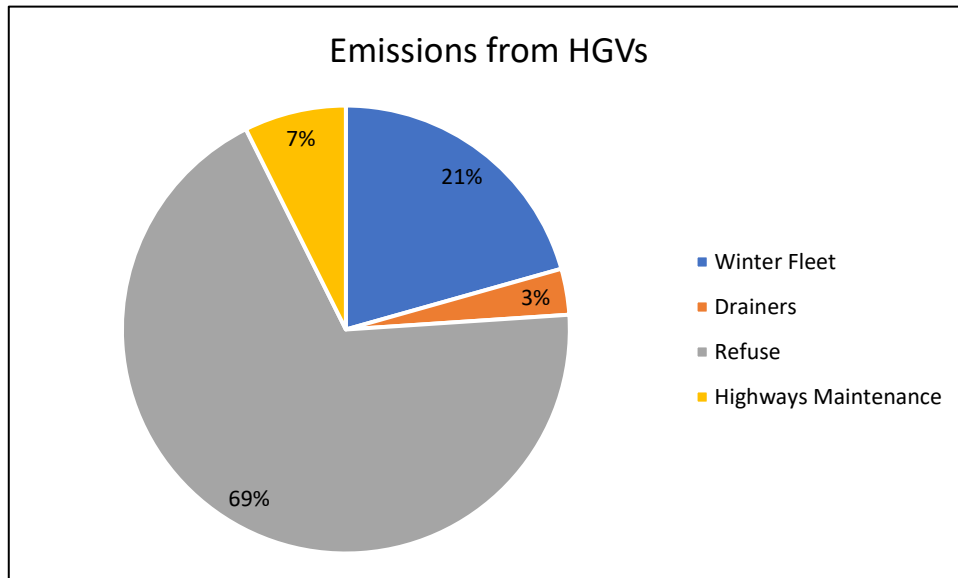


Figure 11 - Emissions from HGVs, 2020/21

The Council understands the need to decarbonise the vehicle fleet over the next 10 years, to allow us to hit our carbon neutral target. The Council is therefore preparing an Electric Vehicle Strategy, to help decarbonise our vehicle fleet over the coming years.

There are currently however a range of challenges associated with the decarbonisation of vehicles, particularly within the HGV sector. This is reflected in the ambition of the UK government to phase out the sale of new petrol and diesel cars by 2030, in comparison with the ambition to phase out the sale of new diesel HGVs by 2040.

The Council is currently undergoing a 24-month trial using an electric refuse collection vehicle (HGV > 17 tonnes), but in the meantime, is also considering accelerating the electrification of vans, MPVs and cars within the fleet, which together make up 30% of fleet emissions. Based on the carbon intensity of the National Grid in 2020/21 for example, if our entire car/van/MPV fleet was made up of electric vehicles, this would have reduced our annual emissions by 300 tonnes, with further year-on-year reductions as the National Grid continues to decarbonise.

5.3. Scope 2 Emissions

Scope 2 emissions for the Council currently include purchased electricity generation for both streetlighting as well as buildings over which the Council has direct financial control. Annual scope 2 emissions decreased by 22% during the 2020/21 financial year from 2019/20 levels, as reflected in Figure 12. Over the longer-term, scope 2 emissions have reduced by 75% since 2016/17.

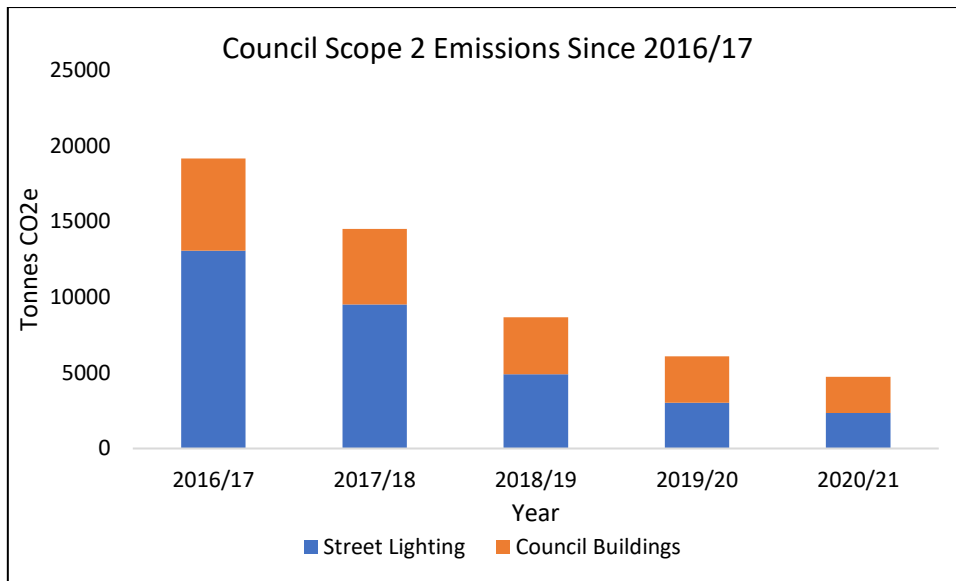


Figure 12 – Council Scope 2 Emissions, 2016/17 – 2020/21

Two-thirds of this reduction was due to the decarbonisation of the National Grid, with the other third due to a reduction in electricity demand. The Council’s annual demand for electricity declined by 3471MWh last year and the carbon intensity of generated electricity of the National Grid decreased by 0.02081kgCO₂/kWh. Figure 13 shows the historic and projected future carbon intensity of the National Grid.

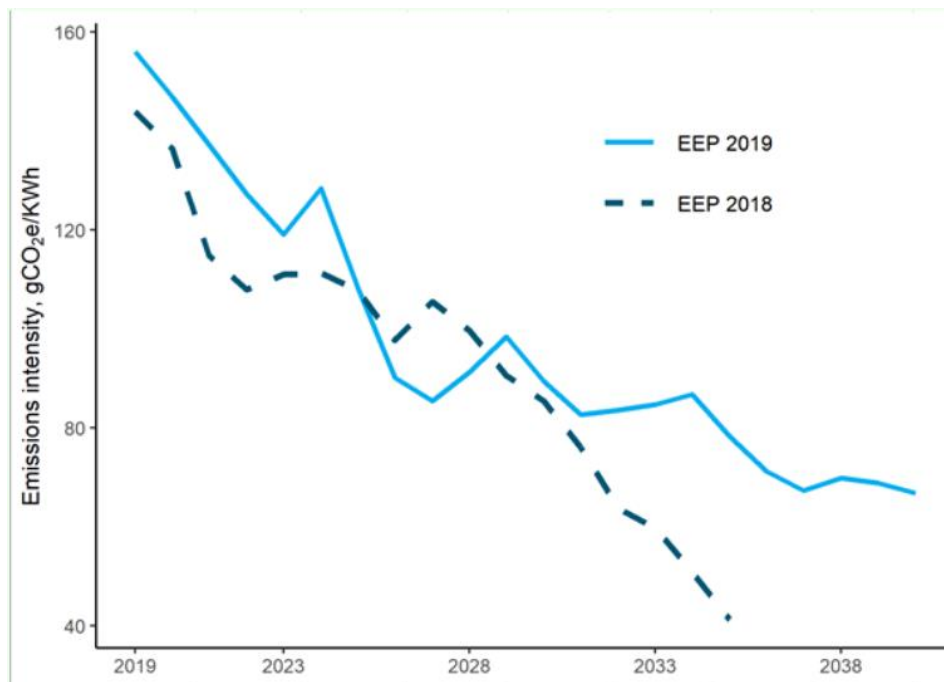


Figure 13 – Projected future carbon intensity of UK electricity⁶

It is widely expected that the National Grid will continue to decarbonise, as the UK’s mix of renewable electricity continues to increase. However, it is also acknowledged that we cannot rely on grid decarbonisation to hit our carbon neutral target for the Council.

⁶ Sourced from https://www.icax.co.uk/Grid_Carbon_Factors.html

Figure 14 shows the properties consuming the most electricity across the Council's estate.

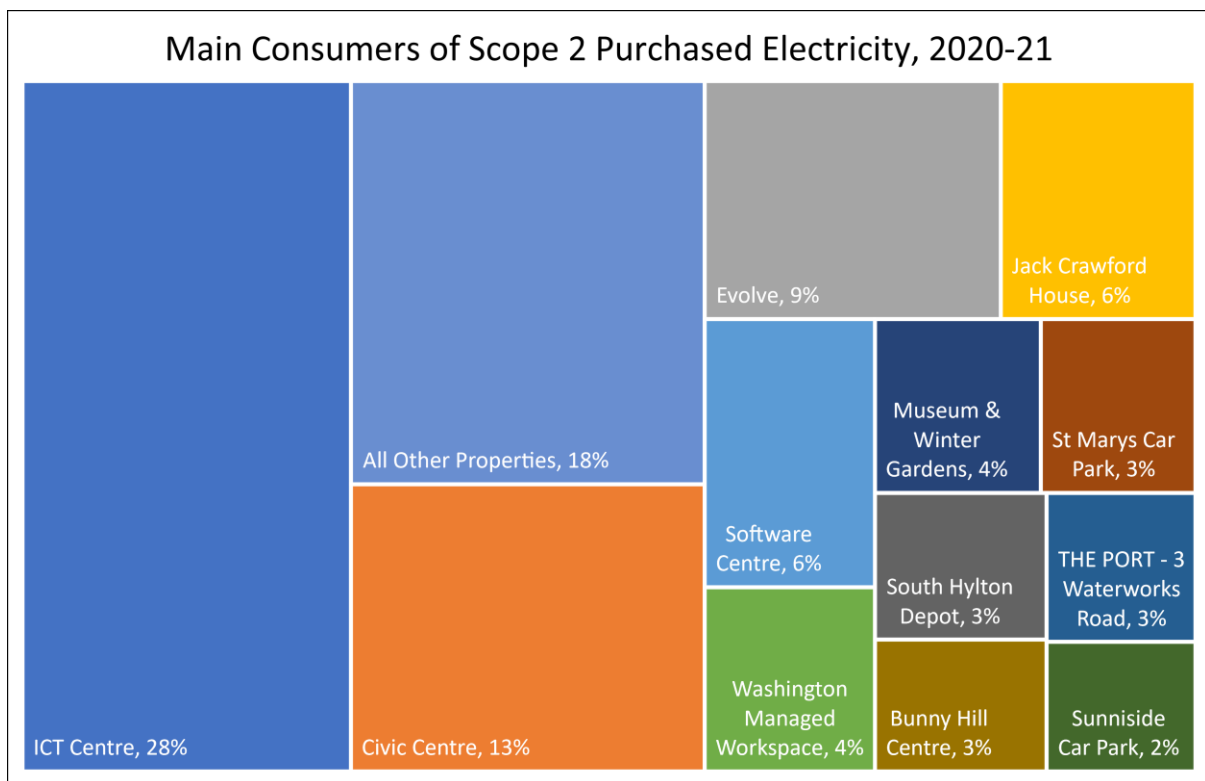


Figure 14 - Breakdown of Scope 2 Purchased Electricity in Buildings, 2020/21

Like with gas consumption discussed earlier, a small proportion of properties make up a large proportion of the Council's electricity consumption in properties, with over 80% of carbon emissions coming from less than 20% of our properties.

5.4. Business as Usual Scenario – Scope 1 and 2 Emissions

Figure 15 shows the projected carbon emissions in a 'business as usual' scenario, considering current trends in energy demand and fleet vehicle emissions, coupled with the projected decarbonisation of the National Grid out to 2030.

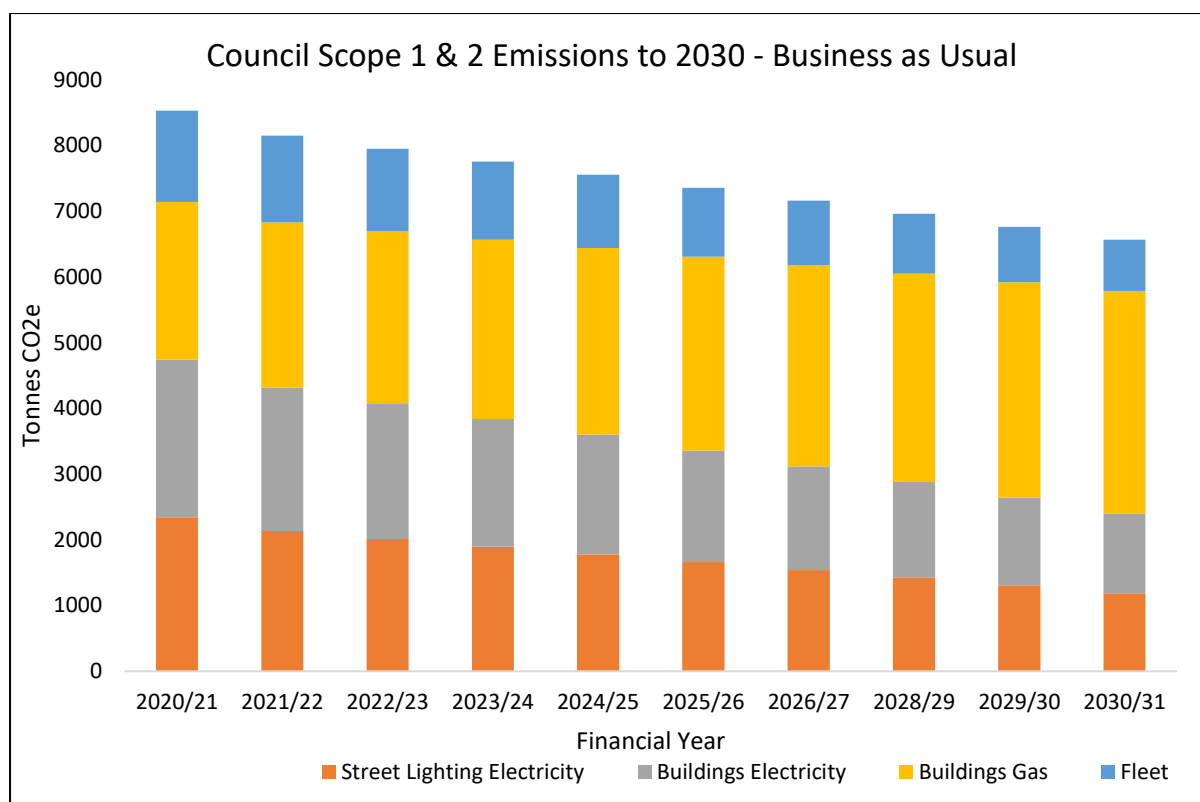


Figure 15 – Projected Scope 1 and 2 Emissions in a 'Business as Usual' Scenario

Figure 15 shows that if the Council adopted a 'business as usual' approach, while emissions would continue to decline, the rate of reduction would mean that we fall well short of our goal of being a carbon neutral Council by 2030. The decarbonisation of gas consumption across our estate therefore presents the greatest barrier to our carbon neutral target.

5.5. Scope 3 Emissions

The Council recently commenced work to develop a scope 3 inventory - a process which is ongoing. For most companies and organisations, scope 3 emissions are likely to be greater than the sum of their scope 1 and 2 emissions.

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. In addition, scope 3 emissions for the Council can also be classed as another organisation's scope 1 and 2 emissions, however this does not detract from our reporting or ambitions to address these emissions to reduce them to a minimum. The Council is developing this scope 3 inventory to be as transparent as possible about the full picture of our carbon footprint as we continue to develop our access to data.

This should increase our ability to drive change within our value chain. In addition to the Council’s goal for carbon neutrality by 2030 across scope 1 and 2 emissions, the Council hope to set a reduction target for scope 3 emissions in the future. Figure 16 shows current the distribution of our GHG emissions across three scopes.

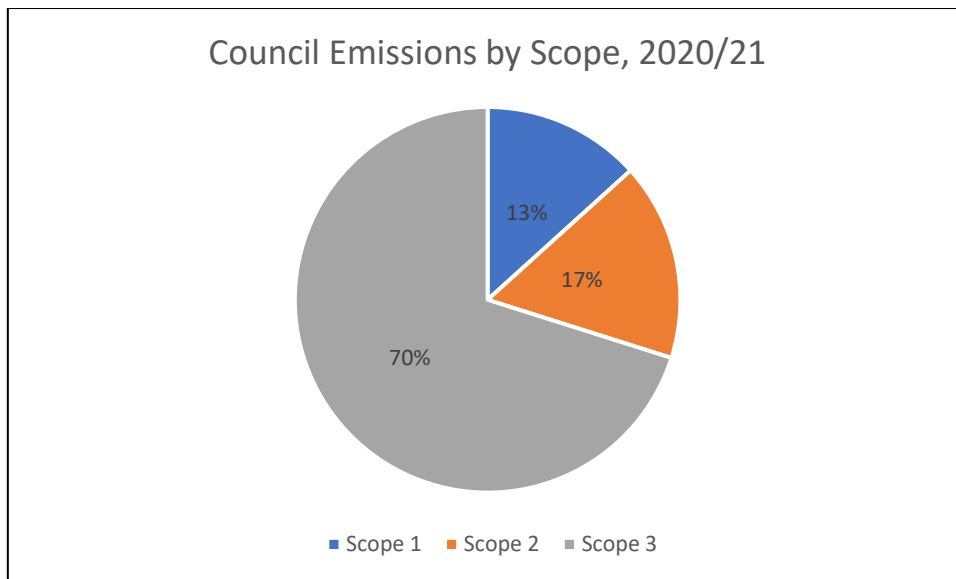


Figure 16 - Breakdown of Emissions by Scope, 2020/21

5.5.1. Business Travel

Historically, the Council has recorded business travel emissions from rail and air travel only. Recently, however the Council also began analysing emissions from the grey fleet and hotel stays due to a greater availability of data. Figure 17 shows business travel emissions since 2018/19.

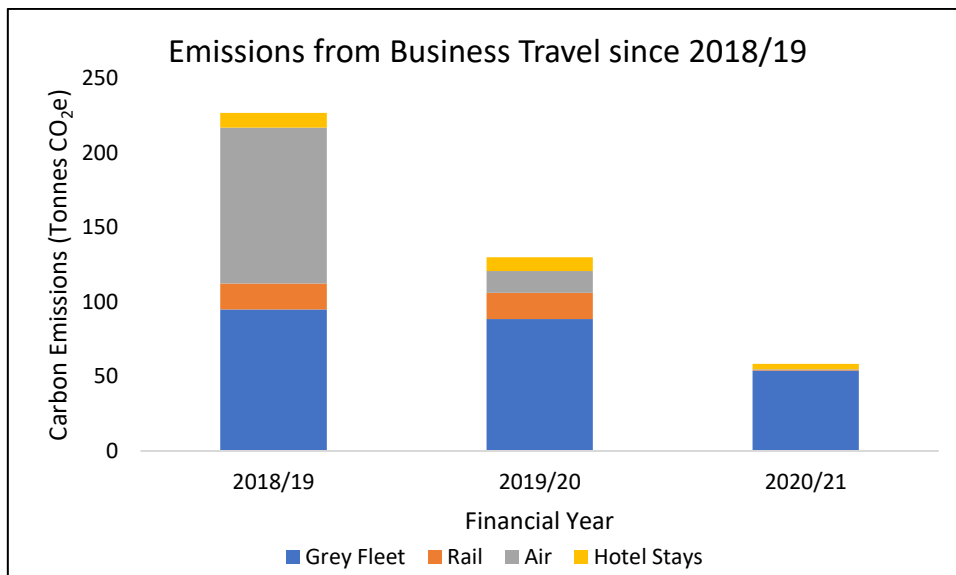


Figure 17 – Scope 3 Emissions from Business Travel, 2018/19 – 2020/21

It is no surprise that Figure 17 shows a significant decline in emissions in 2020/21 from previous years, with the COVID-19 pandemic significantly reducing travel. Business travel at Sunderland City Council is no different, with most staff being required to work from home full time.

In addition to the above, the use of technology has facilitated meeting virtually for both the Council and organisations that the Council engages with. This has reduced the need for Council employees to travel to meetings. It is expected that as Council return to the office, business travel and associated emissions will rise slightly. However, it is also expected that a large proportion of staff will continue agile working, including working from home and the office. It is therefore expected that the anticipated increase in business travel emissions will not increase to the same level as it was before the COVID-19 pandemic.

5.5.2. Employee Commuting / Working from Home

Emissions from employee commuting have been calculated for the first-time for this report and the Council has three years of data. In 2018/19 and 2019/20, emissions are estimated based on the annual employee travel surveys, reflecting the standard practice for working arrangements at this time as most colleagues were travelling to work every day. During this period the Council did not estimate emissions from working from home, as this would reflect the working patterns of a very small number of colleagues. During the 2020/21 financial year, due to COVID-19, most staff worked from home full time, meaning it was more appropriate to estimate emissions associated with this as opposed to commuting. Moving forward, the Council hope to account for both employee commuting and home working, reflecting the Council's flexible working policy.

Before the COVID-19 pandemic, emissions from employee commuting were slowly rising by 5% annually, before significantly reducing in 2020/21, showing that home working has less of an impact on the environment than commuting. It is anticipated that home working will remain for a number of staff in the future, which will allow some of the gains from the last year to be secured into the future.

The annual emissions from employee commuting since 2018/19 are reflected in figure 18.

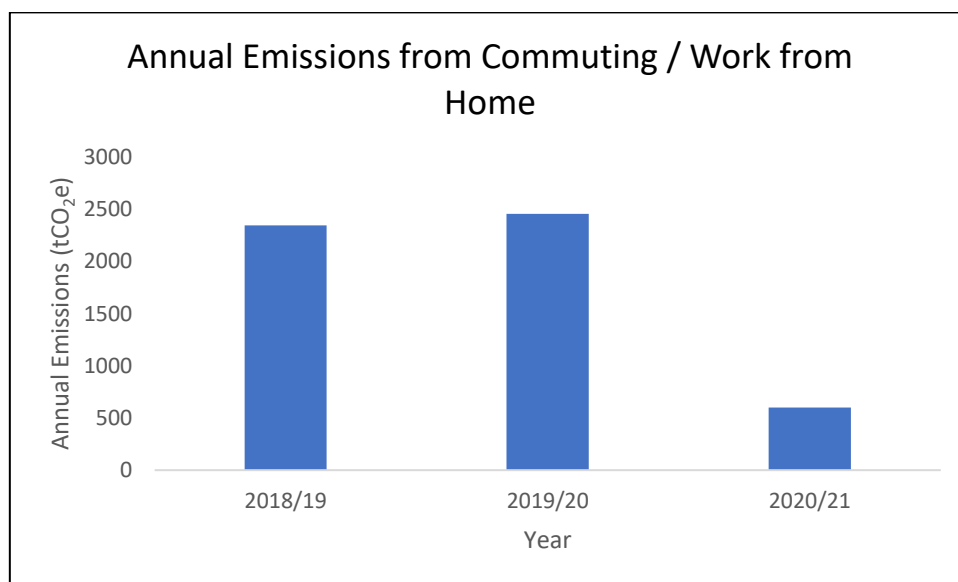


Figure 18 - Emissions from Employee Commuting / Working from Home, 2018/19 - 2020/21

5.5.3. Scope 3 Buildings

Buildings identified in our scope 3 boundary include SCAS, schools and academies, nurseries, fire stations, sport, and leisure complexes amongst others. Emissions from buildings identified within our

scope 3 boundary continue to fall, as reflected in Figure 19. Emissions from gas have fallen by 9%, and emissions from electricity generation have fallen by 22% since the previous year. The COVID-19 pandemic will have contributed to this since schools were not teaching for long periods of time during the year. Over the longer-term, total emissions from gas and electricity in scope 3 buildings have fallen by 43.5% since 2016/17.

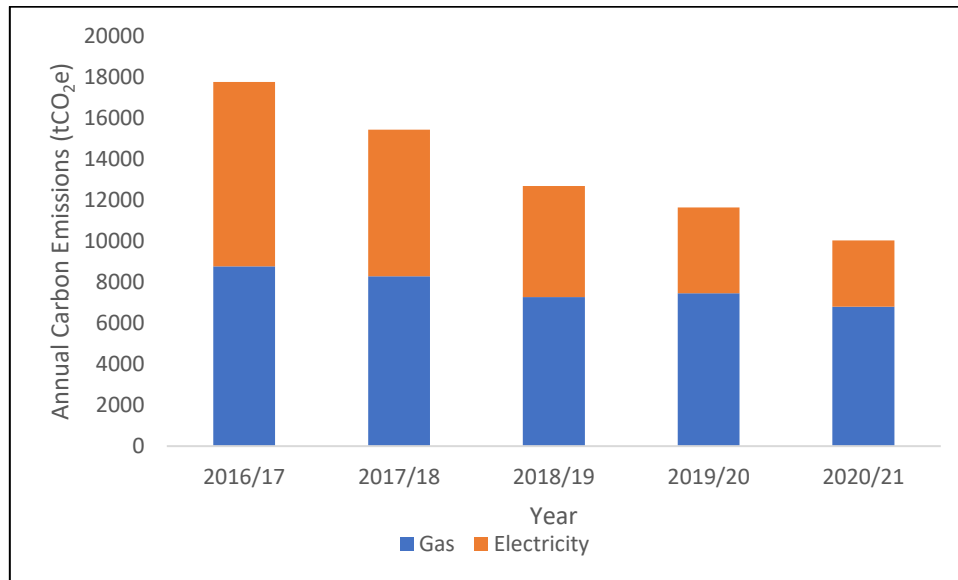


Figure 19 - Emissions from Scope 3 Buildings, 2016/17 to 2020/21

5.5.4. Purchased Goods

For many organisations, emissions from purchase goods are one of the main sources of scope 3 emissions. For the first time, the Council has estimated its scope 3 emissions from purchased goods over the course of the year using Environmentally Extended Input-Output data (EEIO). This method includes using spend data for the previous financial year and applying carbon intensity factors based on industry averages across different sectors. There are limitations to this method, however it has allowed us to provide a rough 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. In the future the Council aims 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 first. This will also provide a platform for the Council to liaise with these suppliers to seek to reduce their own carbon footprint.

A similar process will be undertaken in the future for capital goods, as it is expected that this will also be one of the main sources of the Council's scope 3 carbon emissions. The long-term goal of this is that we can collaborate with our supply chain to help improve their own environmental sustainability credentials, as well as improve the accuracy of our data. We expect this will contribute to a reduction in citywide emissions, as well as our own value chain emissions, which is particularly important in achieving the city-wide targets.

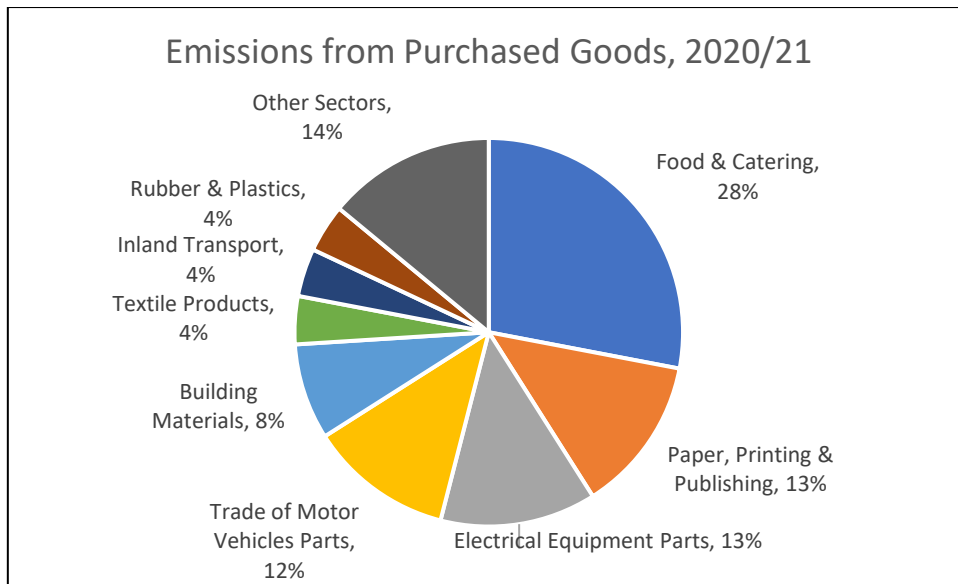


Figure 20 - Emissions from Purchased Goods based on Initial Screening, 2020/21

As can be seen above in Figure 20, based on the industry average factors, it is estimated that the food and catering sector is the most carbon intensive for our purchased goods, followed by paper, printing, and publishing as well as electrical equipment parts.

Estimating emissions figures from procurement is a long-term process, and now, this analysis only covers purchased goods. Purchased services are currently excluded from this category. Capital goods are also not yet estimated, although are defined as a separate category from purchased goods and services in the GHG Protocol scope 3 Standard. Calculation of these emissions has been identified as a future step within the Council’s monitoring report. Regarding capital goods, it is predicted estimated that the Council’s construction works, electrical equipment, and machinery and vehicles will be the most carbon intensive sectors.

5.5.5. Water Supply and Treatment

Figure 21 shows the annual emissions from water supply and treatment in Council buildings. Since 2016/17, emissions from water have fluctuated, which is directly related to consumption. The steep decline from 2019/20 to 2020/21 is due to a significant reduction in staff occupancy in the Council’s buildings during the COVID-19 pandemic.

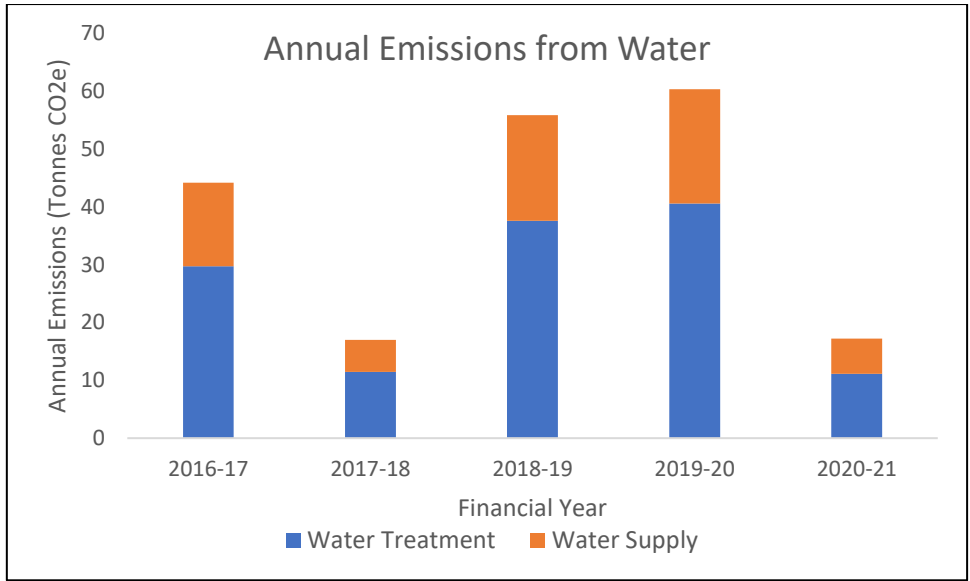


Figure 21 - Annual Emissions from Water Supply and Treatment, 2016/17 - 2020/21

6. Sunderland Citywide Emissions

6.1. 2019 BEIS Update for Local Authority Emissions - Overview

The 2019 BEIS update for citywide emissions estimates were released in June 2021 and represents the most recent citywide carbon emission data available. The data shows that in 2019 Sunderland released a net 1.178m tonnes CO₂. This comprises of 1.187m tonnes emitted from the industrial, commercial, public, domestic and transport sectors and 8,700 net tonnes offset by LULUCF. Figure 22 shows the current citywide emission trends for Sunderland.

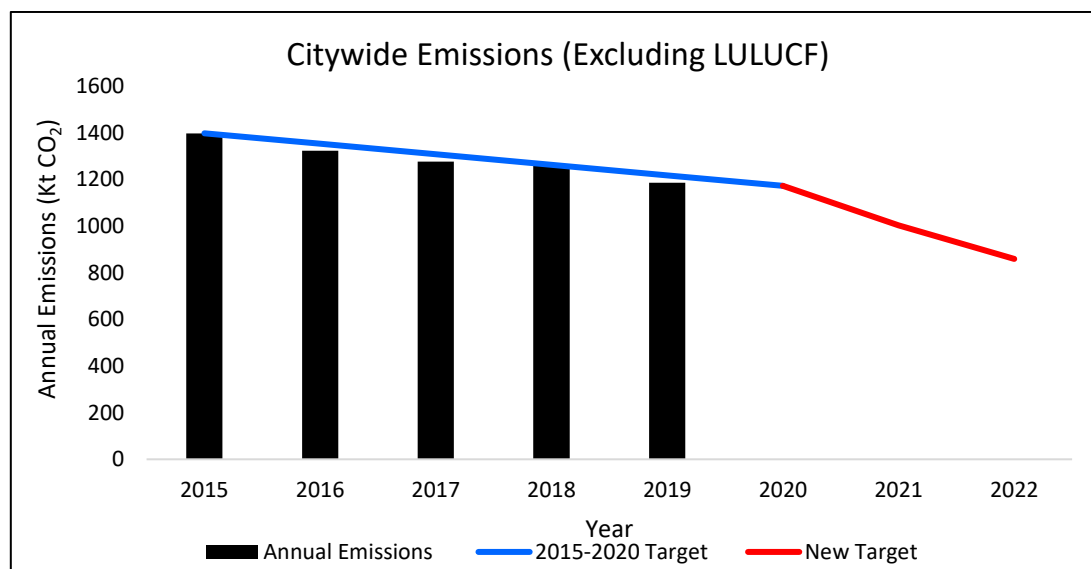


Figure 22 - Citywide Emissions Since 2015

In line with the Tyndall Centre advice to exclude emissions from LULUCF, aviation and shipping, as well as non-CO₂ related emissions, the remaining 1.187m tonnes emitted represents a 5.8% decrease from 2018 levels and a 15.2% reduction from 2015 levels. This means that the city needs a further reduction of 13,000 tonnes CO₂ to achieve the interim 2020 target of a 16.1% reduction. It therefore appears, based on current trends, that this 2020 target will be achieved. The 2020 annual citywide emission figures will be confirmed by BEIS in June 2022.

However, it is also clear that carbon reductions need to significantly accelerate post-2020 to meet the more ambitious indicative recommendations for carbon reduction. Sunderland has a remaining carbon budget of 3.4 million tonnes for 2020-2022, to ensure that the recommended goal of staying within a carbon budget of 5.8 million (as in table 3) tonnes between 2018-2022 is met.

Figure 23 shows the breakdown of citywide CO₂ emissions in Sunderland by five sectors in 2019. Figure 24 shows how overall sectoral emissions have changed over time since 2005.

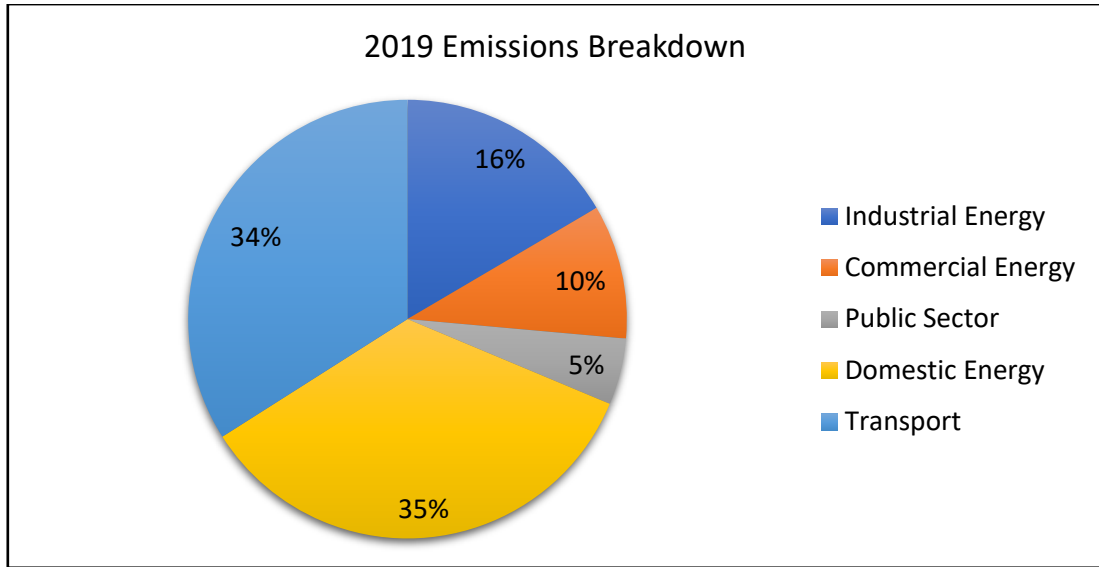


Figure 23 - 2019 Citywide Emissions by Sector

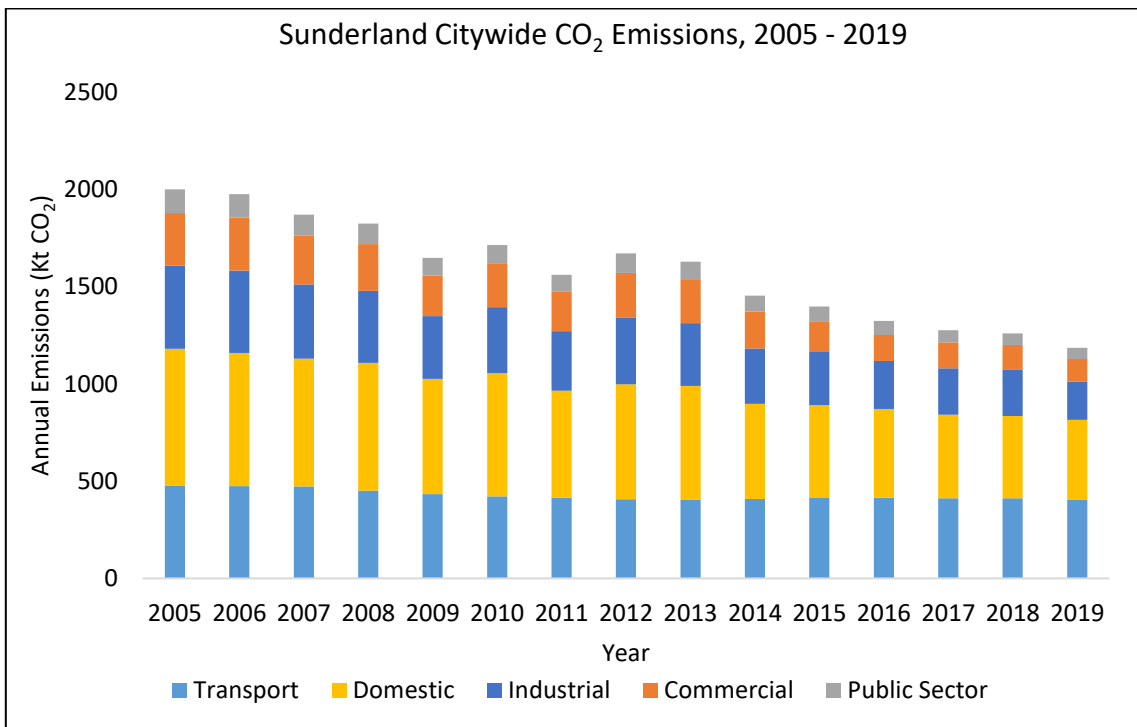


Figure 24 - Citywide Emissions by Sector since 2005

Domestic energy and transport have historically been the two major emitters of CO₂ in Sunderland, accounting for over two thirds of annual citywide CO₂ emissions in 2019. Emissions from all sectors have reduced since 2005, albeit some sectors are experiencing emissions reduction at much higher rates than other sectors in the city.

Between 2018 and 2019:

- Emissions from industrial energy reduced by 17%.
- Emissions from commercial energy reduced by 8%.
- Emissions from the public sector reduced by 4%.
- Emissions in domestic energy reduced by 3%.

- Emissions from transport reduced by 2%.

Since 2015 (carbon budget baseline):

- Emissions from industrial energy reduced by 29%.
- Emissions from commercial energy reduced by 25%.
- Emissions from the public sector reduced by 26%.
- Emissions in domestic energy reduced by 14%.
- Emissions from transport reduced by 3%.

6.2. Industrial Emissions

Emissions from the industrial sector reduced by the highest rate out of all the sectors assessed, with a 17% reduction in annual emissions compared to 2018. Figure 25 shows how the industrial sector is performing against its target, when apportioned against an equal share of the carbon budget reduction targets (compared to a 2015 baseline). The industrial sector is significantly ahead of both the 2019 and 2020 targets for decarbonisation.

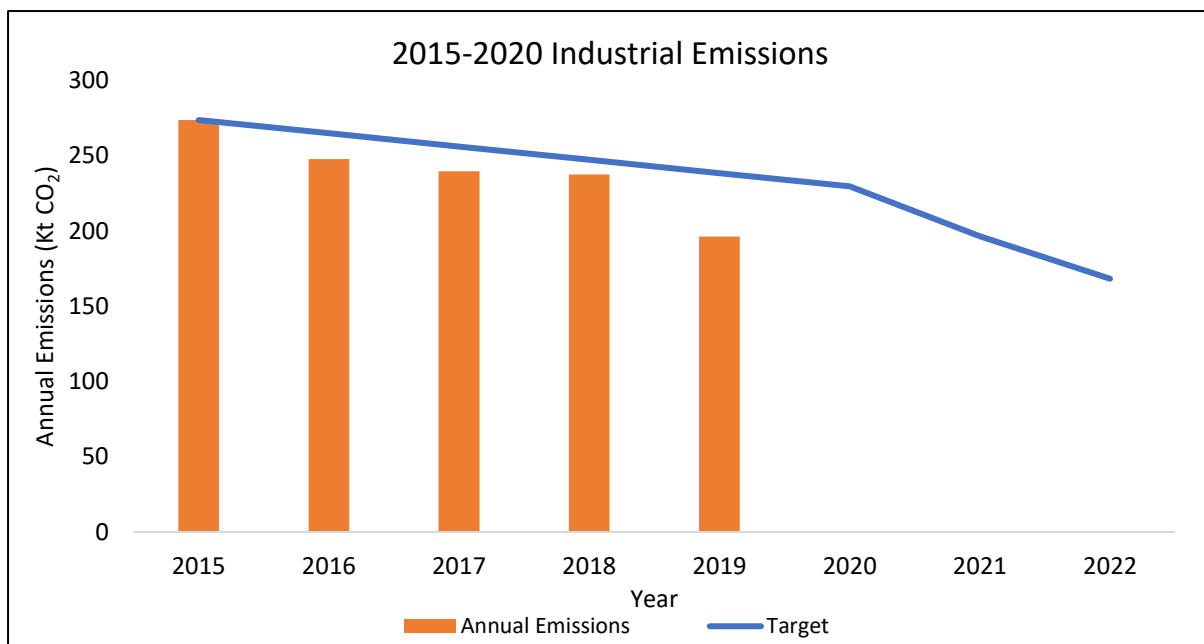


Figure 25 - Industrial Emissions Progress against Targets

Figure 26 shows the emissions from the industrial sector broken down into electricity, gas, large installations, other fuels, and agriculture. Most emissions from industry are caused by electricity, gas and other fuels. However, all five of these emissions sources experienced emission reductions in the previous year. This includes:

- 23% decrease in emissions from electricity.
- 18% decrease in emissions from gas.
- 9% decrease in emissions from other fuels.
- 33% decrease in emissions from large industrial installations.
- 7% increase in emissions from agriculture.

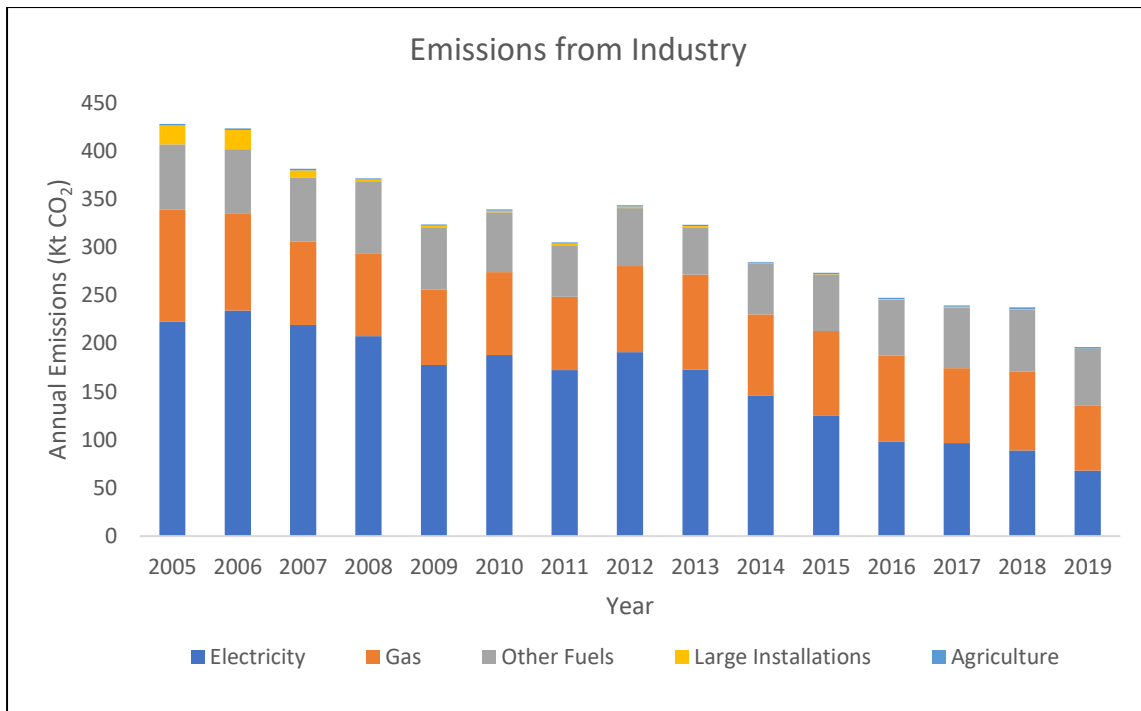


Figure 26 – Industrial Emissions Breakdown

Finally, as can be seen below in Figure 27, industrial emissions in Sunderland are reducing at a faster rate than the average for the Tyne & Wear region as well as for the UK overall, from the 2015 baseline.

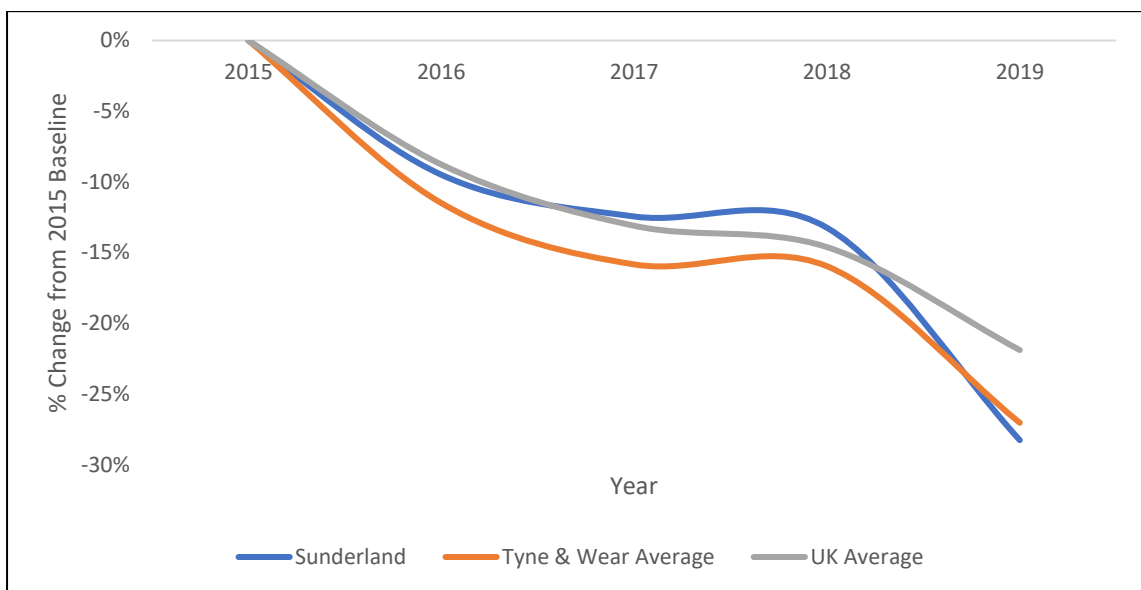


Figure 23 - Percentage reduction in industrial emissions between 2015-2019 in Sunderland, Tyne & Wear and the UK

6.3. Commercial Emissions

Emissions from the commercial sector reduced by 8% compared to 2018. Figure 28 shows how the commercial sector is performing against its target, when apportioned against an equal share of the carbon budget reduction targets (compared to a 2015 baseline). The commercial sector is significantly ahead of both the 2019 and 2020 targets for decarbonisation.

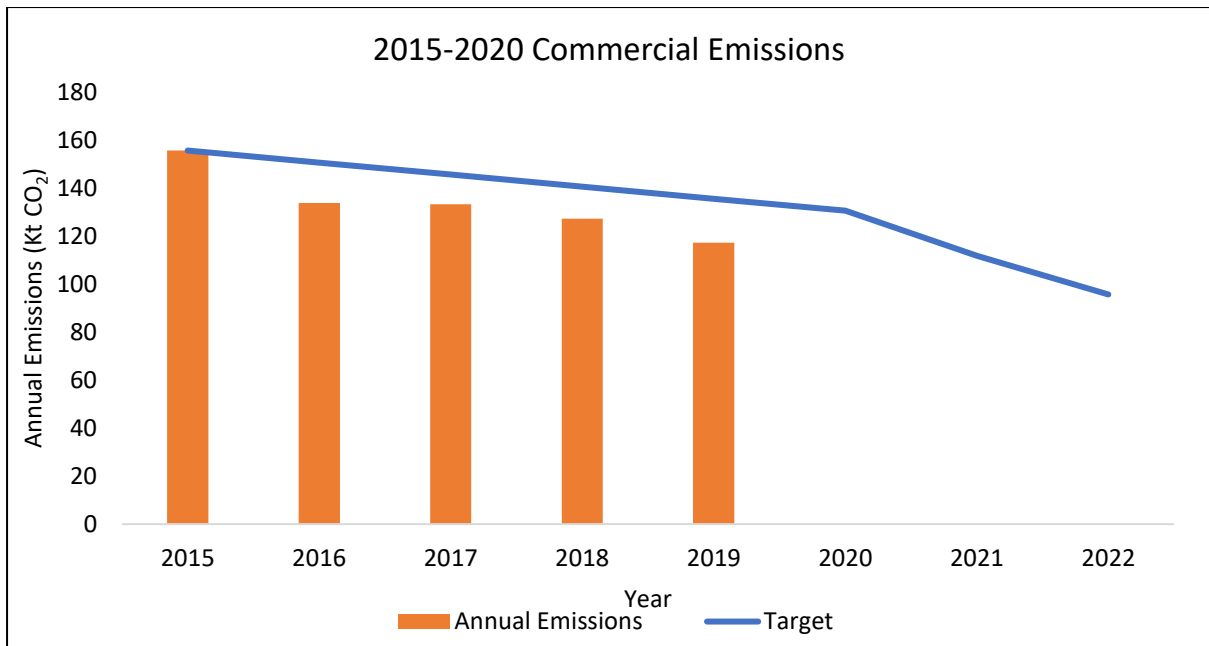


Figure 28 - Commercial Emissions Progress against Targets

Figure 29 shows the emissions from the commercial sector broken down into electricity, gas and other fuels. Most commercial emissions are caused by electricity consumption. Historically, however the rate at which this is reducing is faster than that for gas, which was also true from 2018-2019 shown by:

- 10% decrease in emissions from electricity.
- 4% decrease in emissions from gas.
- 33% decrease in emissions from other fuels.

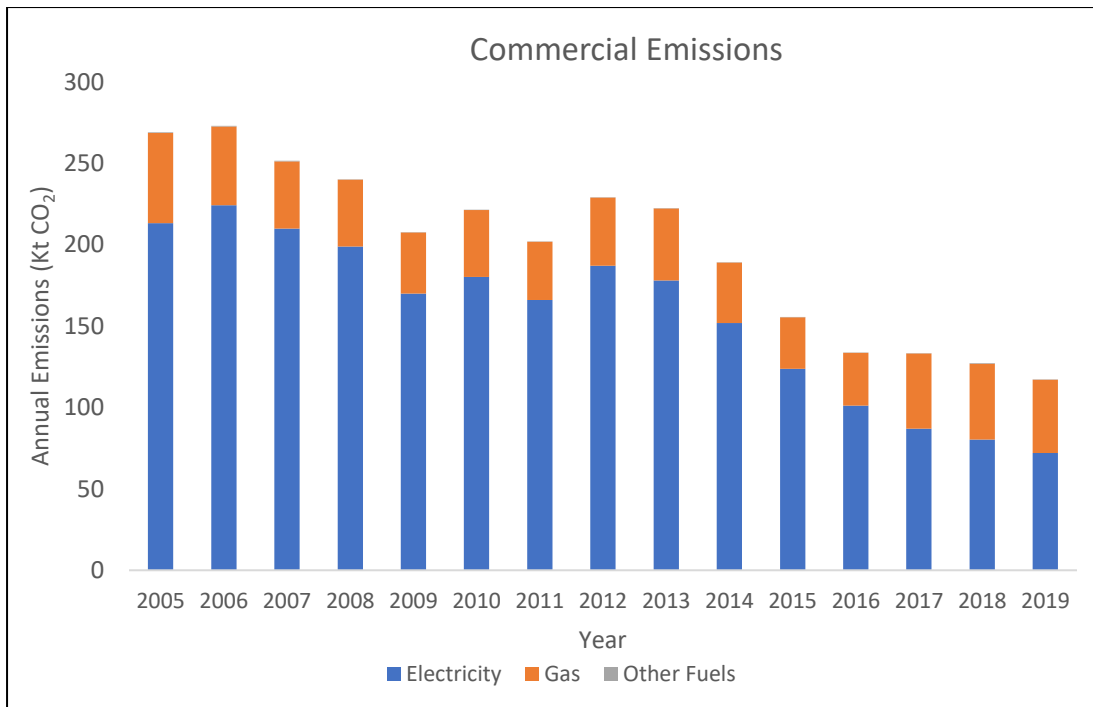


Figure 29 - Commercial Emissions Breakdown

Finally, as can be seen below in Figure 30, commercial emissions in Sunderland are reducing at a similar rate to the average for the Tyne & Wear region but slower than the UK average, from the 2015 baseline.

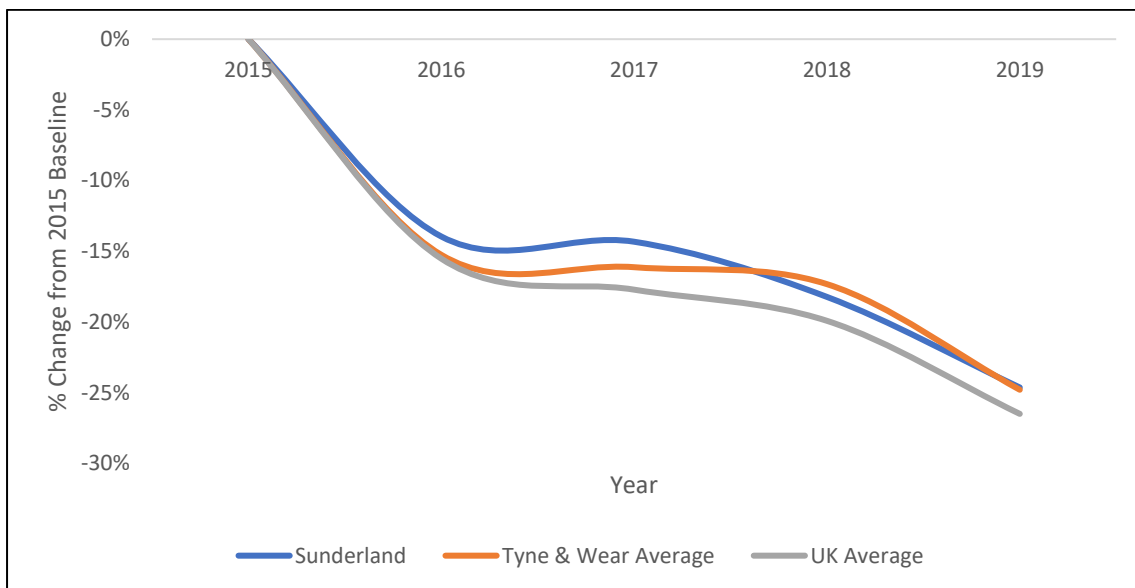


Figure 30 - Percentage reduction in commercial emissions between 2015-2019 in Sunderland, Tyne & Wear and the UK

6.4. Public Sector Emissions

Emissions from the public sector reduced by 4% compared to 2018. Figure 31 shows how the public sector is performing against its target, when apportioned against an equal share of the carbon budget reduction targets (compared to a 2015 baseline). The public sector is significantly ahead of both the 2019 and 2020 targets for decarbonisation.

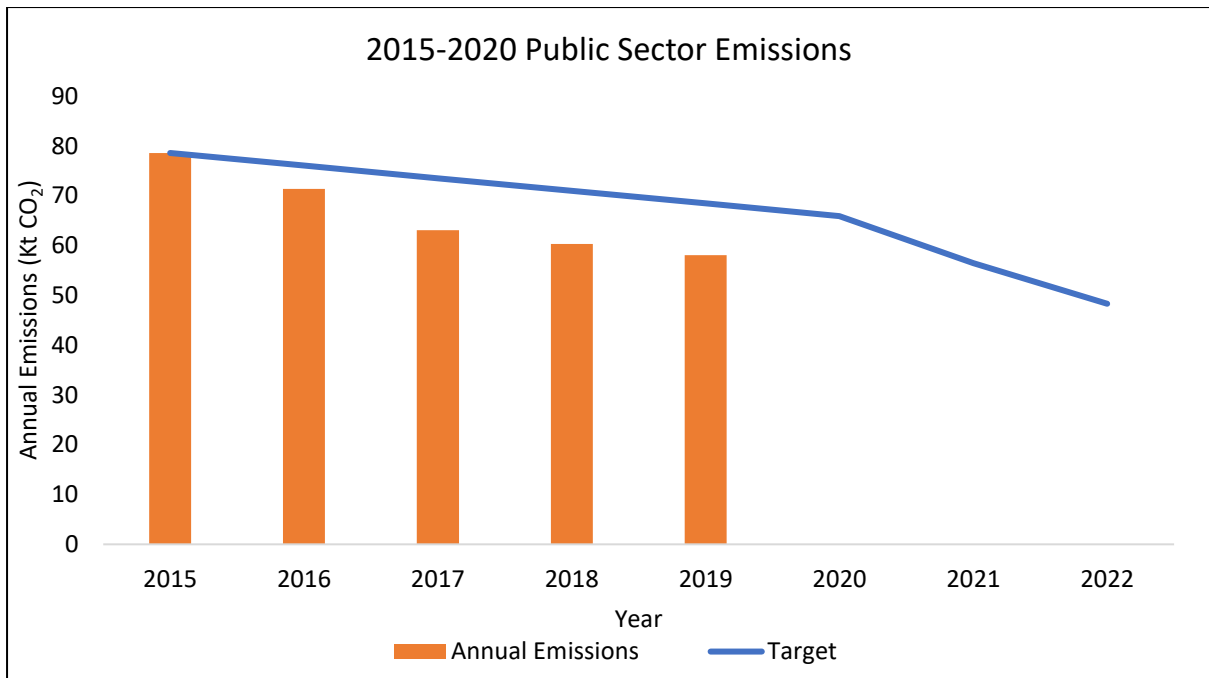


Figure 31 - Public Sector Emissions Progress Against Targets

Figure 32 shows the emissions from the public sector broken down into electricity, gas and other fuels. Historically, electricity was the main cause of public sector emissions. However, the decarbonisation of the National Grid coupled with the limited reduction in emissions from gas in the public sector, has resulted in gas now becoming the main source of emissions. Last year the public sector experienced:

- 8% decrease in emissions from electricity.
- No change in emissions from gas.
- No change in emissions from other fuels.

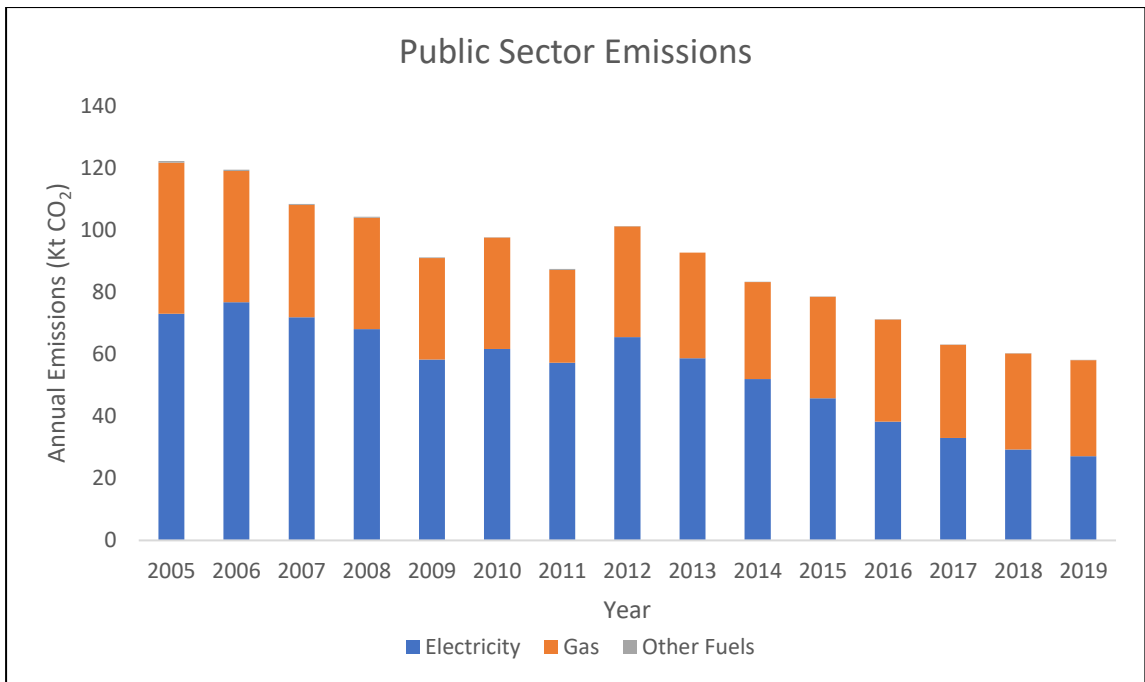


Figure 32 - Public Sector Emissions Breakdown

Finally, as can be seen below in Figure 33, public sector emissions in Sunderland are reducing at a similar rate to the average for the Tyne & Wear region but much slower than the UK average, from the 2015 baseline.

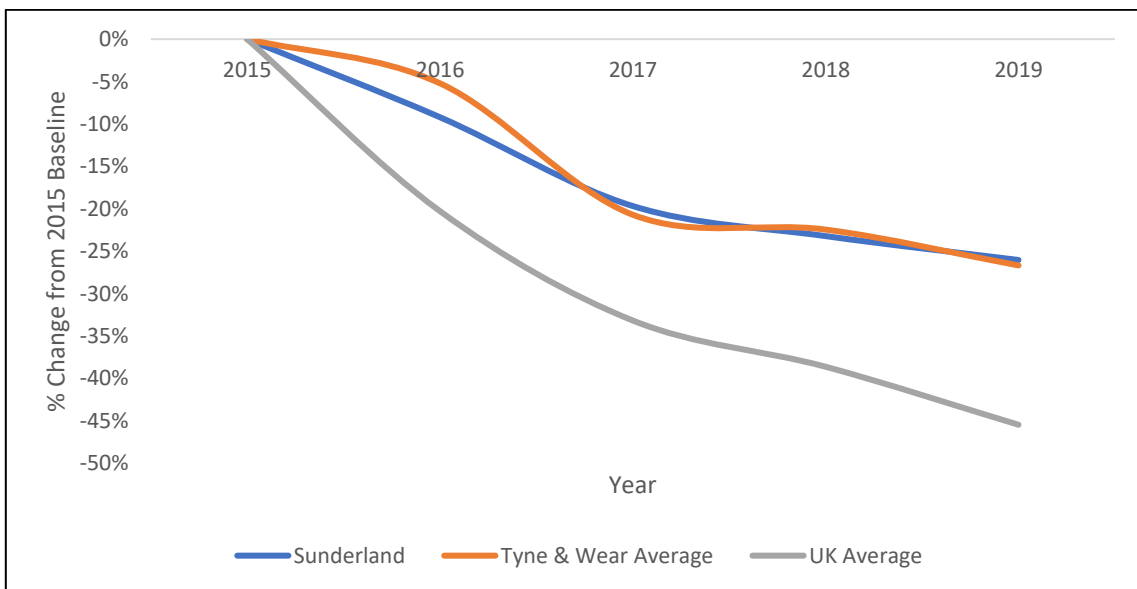


Figure 33 - Percentage reduction in public sector emissions between 2015-2019 in Sunderland, Tyne & Wear and the UK

6.5. Domestic Emissions

Domestic emissions reduced by 3% compared to 2018. Figure 34 shows how the domestic sector is performing against its target, when apportioned against an equal share of the carbon budget

reduction targets (compared to a 2015 baseline). The domestic sector is ahead of the 2019 target for decarbonisation.

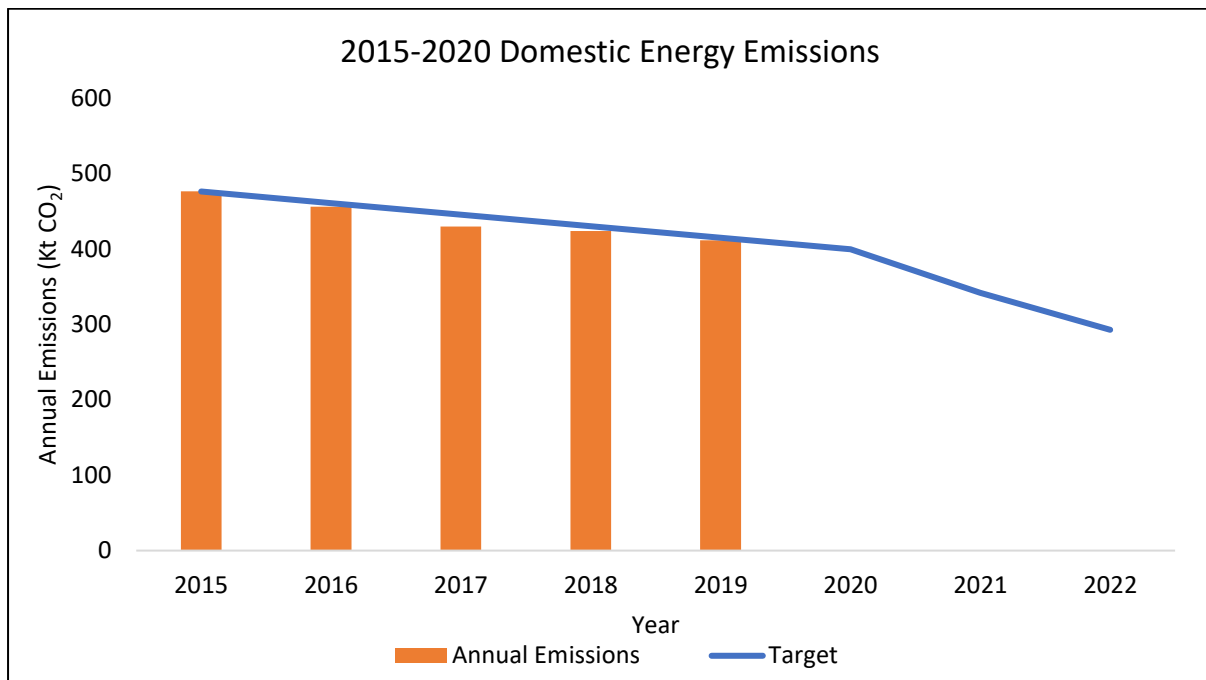


Figure 34 - Domestic Emissions Progress against Targets

Figure 35 shows domestic emissions broken down into electricity, gas and other fuels. Historically, electricity was the main cause of public sector emissions. However, the decarbonisation of the National Grid coupled with the limited reduction in emissions from gas in the domestic sector, has resulted in gas now being the main source of emissions. Last year the domestic sector experienced:

- 11% decrease in emissions from electricity.
- 0.5% increase in emissions from gas.
- 16% decrease in emissions from other fuels.

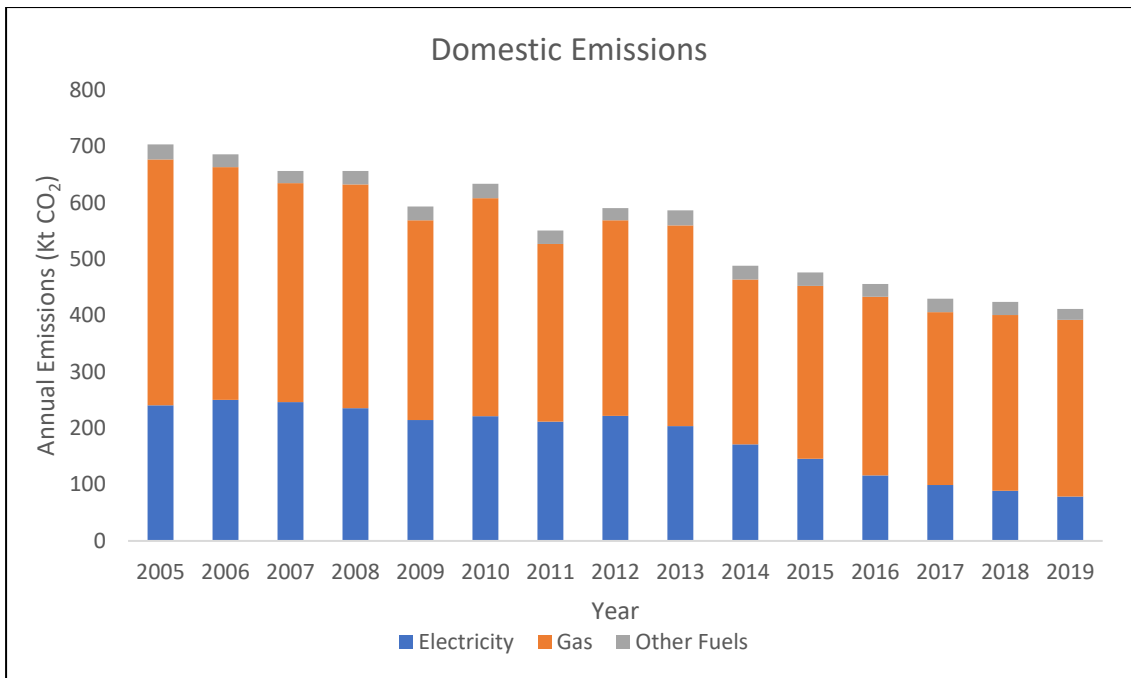


Figure 35 - Domestic Emissions Breakdown

Finally, as can be seen below in Figure 36, domestic emissions in Sunderland are reducing at a slightly higher rate than the average for both the Tyne & Wear region and the UK national average, from the 2015 baseline.

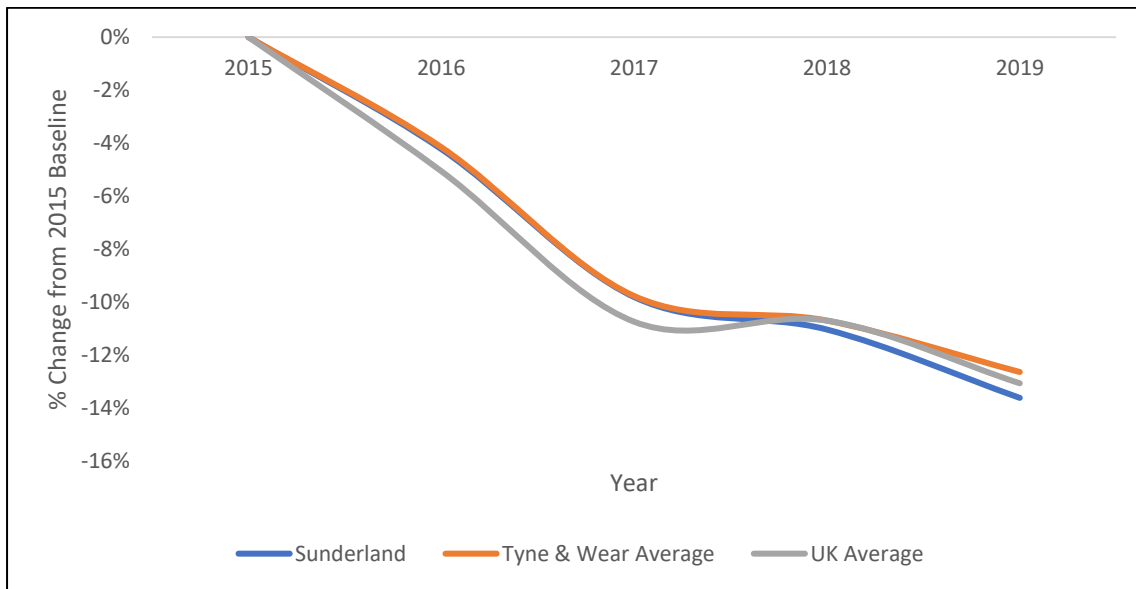


Figure 36 - Percentage reduction in public sector emissions between 2015-2019 in Sunderland, Tyne & Wear and the UK

6.6. Transport Emissions

Transport sector emissions reduced by 2% compared to 2018. Figure 37 shows how the transport sector is performing against its target, when apportioned against an equal share of the carbon budget

reduction targets (compared to a 2015 baseline). The transport sector is behind its target for decarbonisation.

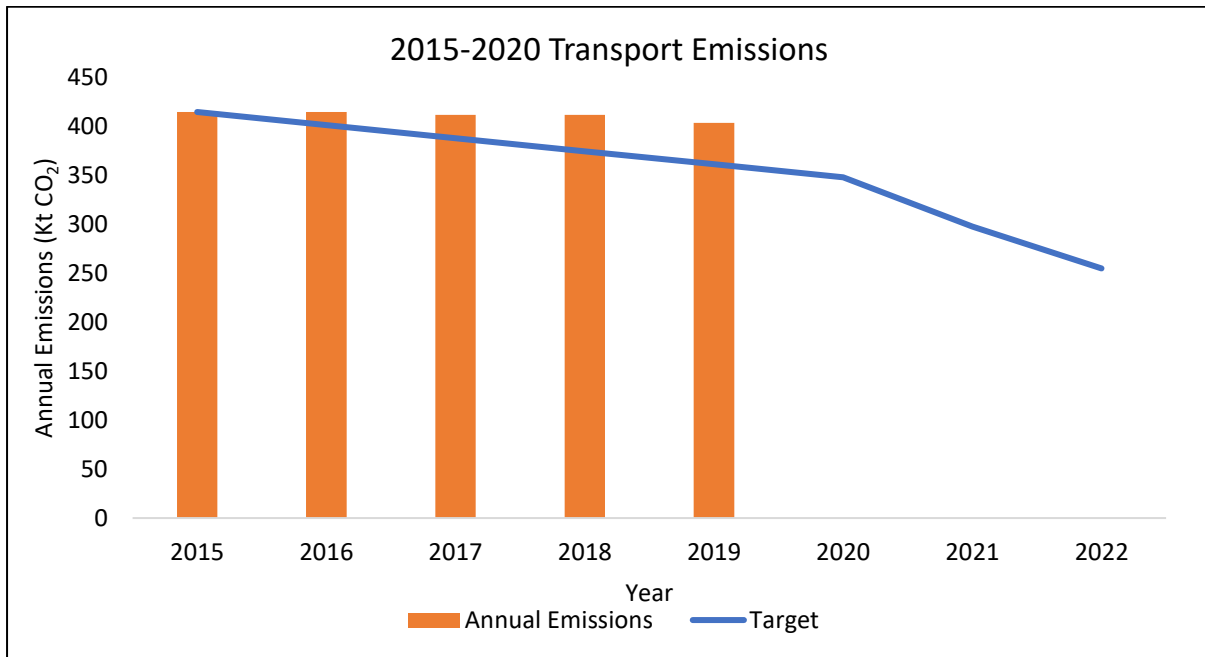


Figure 37 - Transport Sector Emissions Progress against Targets

Figure 38 shows transport emissions broken down into roads, railways and other. Historically, emissions from roads have been major source of transport emissions in the city. Last year the transport sector experienced:

- 2% decrease in emissions from roads.
- 14% decrease in emissions from diesel railways.
- No change in emissions from other transport.

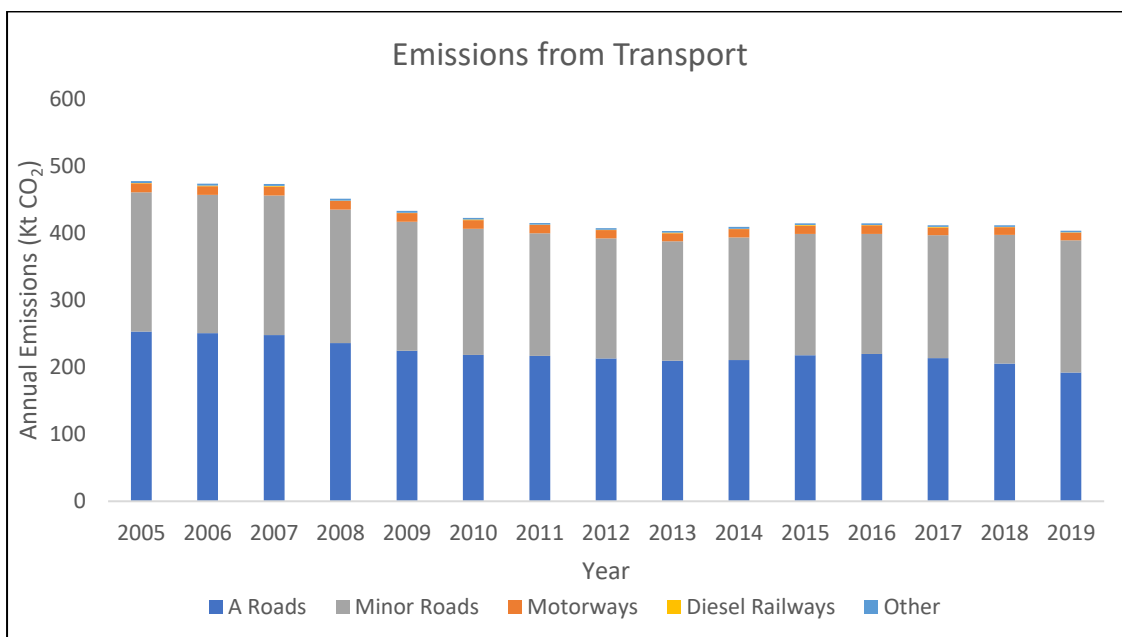


Figure 38 - Transport Emissions Breakdown

Finally, despite the fact Sunderland is behind on the citywide target for emissions reduction, the decarbonisation of transport is a nation-wide issue, as can be seen by Figure 39. Interestingly, as shown by Figure 39, despite the limited reductions that Sunderland is reducing transport emissions faster than both the Tyne & Wear and the UK national average.

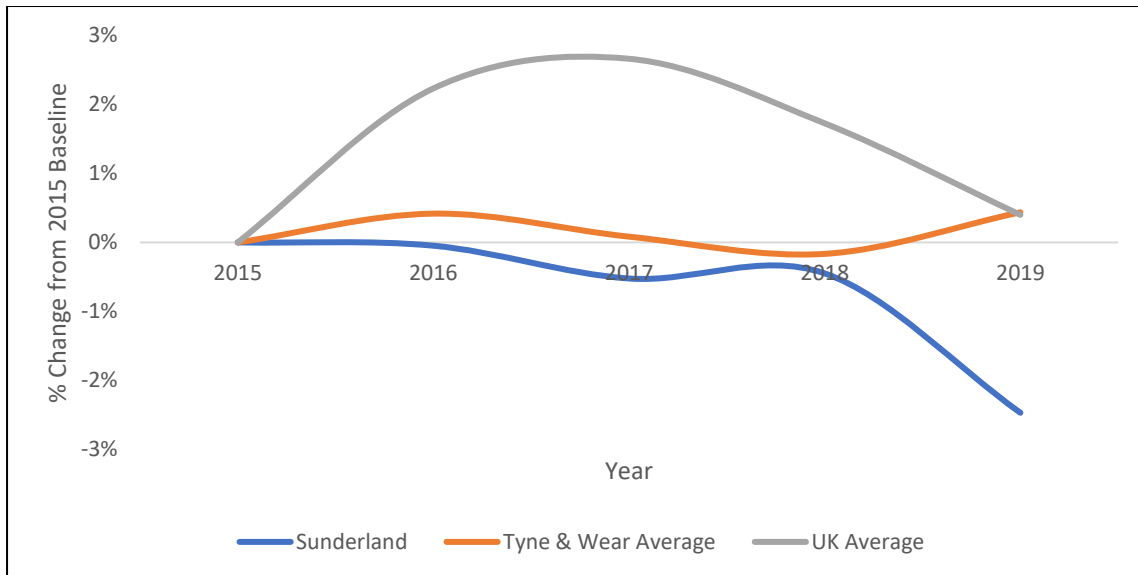


Figure 39 - Percentage reduction in public sector emissions between 2015-2019 in Sunderland, Tyne & Wear and the UK

6.7. Emissions for Gas and Electricity by LSOA in Sunderland

Figures 40 and 41 break down Sunderland's emissions from gas and electricity into Lower Super Output Areas (LSOAs), using data provided by BEIS.

As can be seen in Figure 40, the greatest electricity emissions are concentrated in the city centre. The Council will seek to improve its understanding of this data in the future and how it can inform future emissions reduction activity.

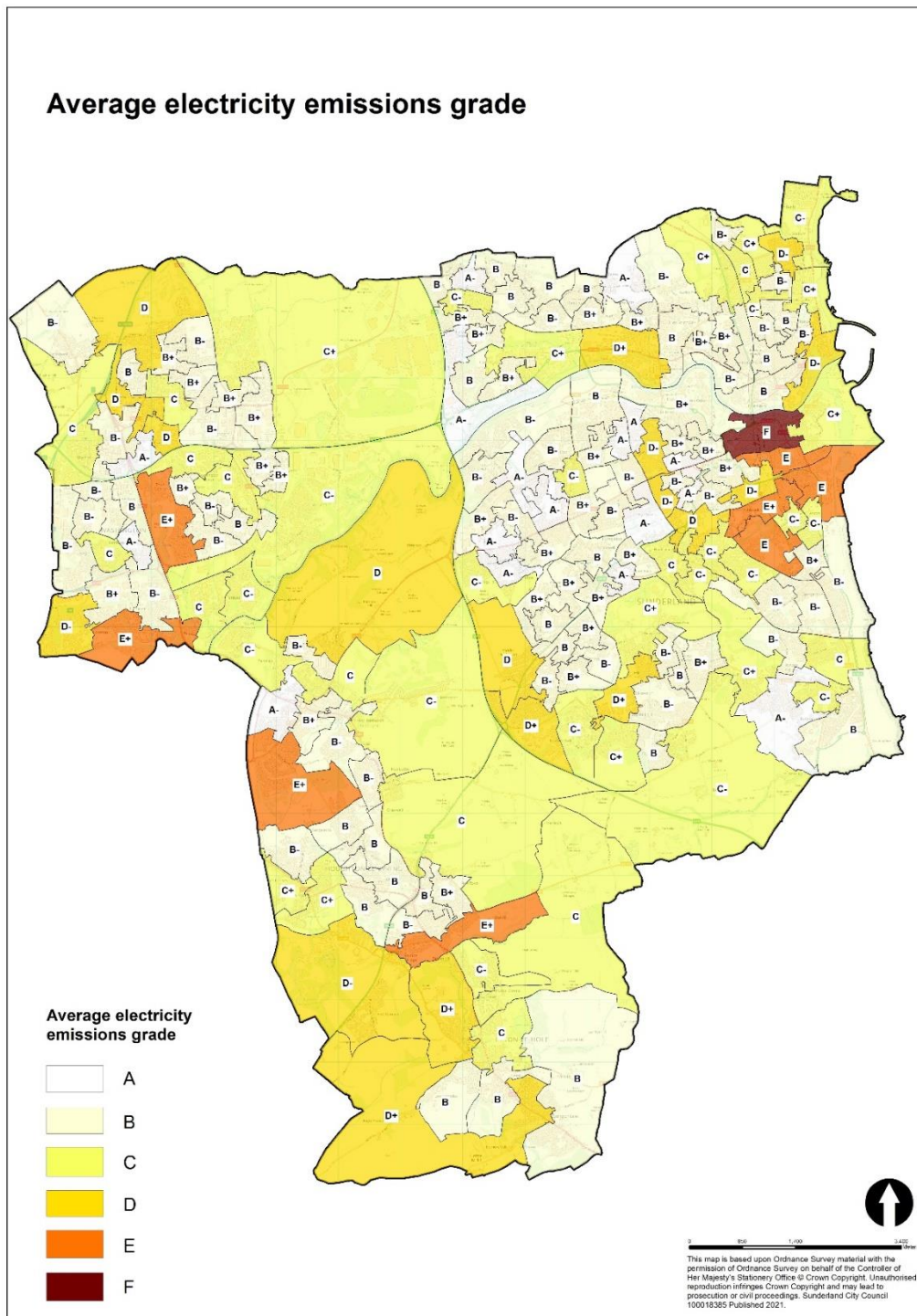


Figure 40 - Electricity Emissions by LSOA

In contrast to the electricity emissions, Figure 41 indicates that the distribution of gas emissions within the city appears to be fairly well dispersed with small clusters within each of the Area Framework Regeneration (ARF) areas.

Average gas emissions grade

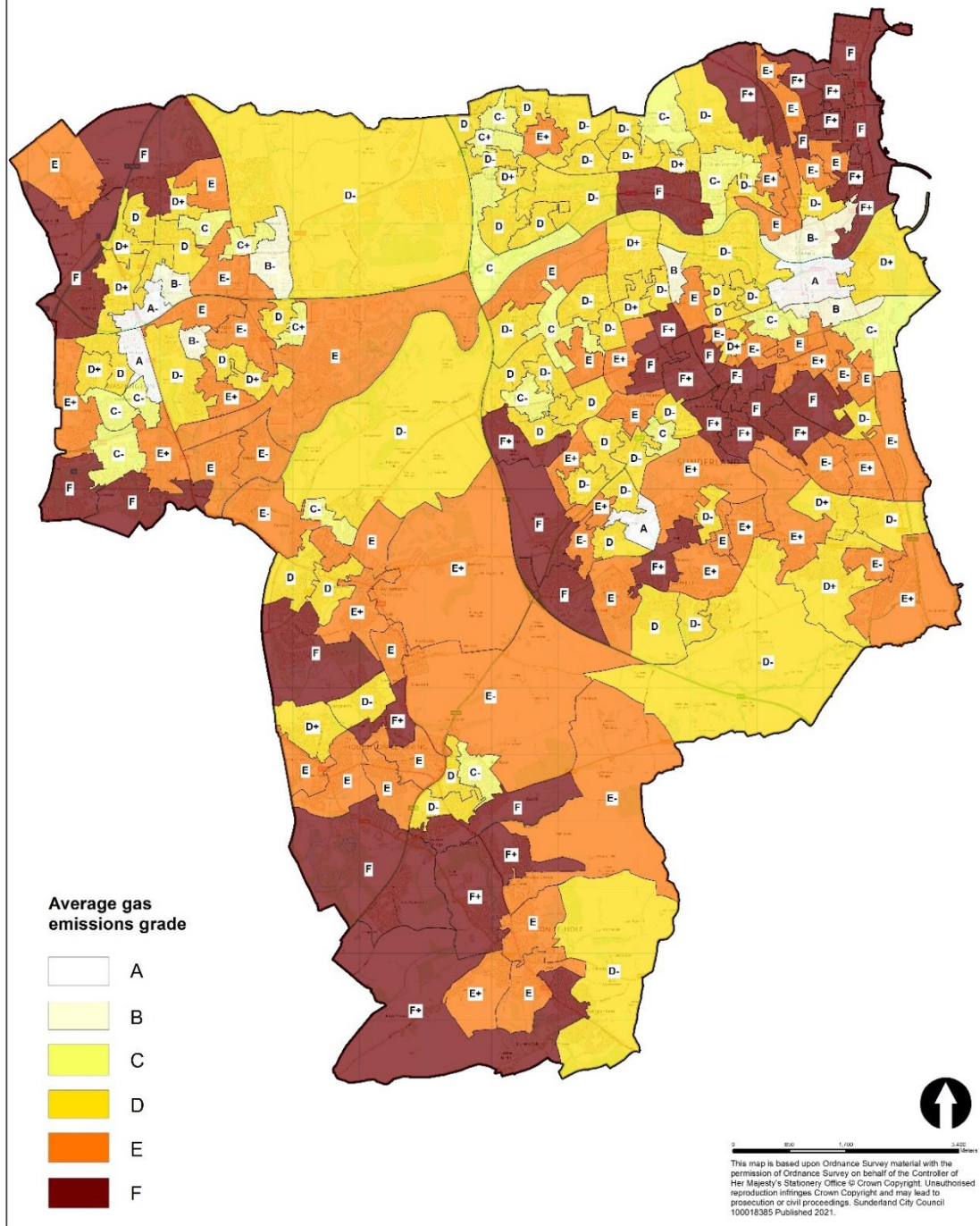


Figure 41 - Gas Emissions by LSOA

7. Conclusion

This report is the first annual carbon monitoring report since the city-wide Low Carbon Framework and Council’s Low Carbon Action Plan were published. Going forward, the Council will commit to publishing an annual carbon report covering both the Council’s own emissions (scope 1, 2 as well as information on scope 3), and citywide emissions. In addition, the Council will commit to routinely reporting scope 1 and 2 emissions on a quarterly basis on the Council’s website.

In future years, the annual report will be further developed to align wherever possible with the 7 strategic priorities set out in the city’s Low Carbon Framework and the wider City Plan as appropriate. In addition to setting out comprehensive emissions data, the annual report will also summarise key areas of progress in terms of activity developed and delivered to facilitate achievement of the city’s ambitious emissions reductions targets.

8. Glossary

| | |
|---------------------------------------|--|
| BEIS | The Department for Business, Energy and Industrial Strategy. BEIS replaced the Department for Business, Innovation and Skills (BIS) and the Department of Energy and Climate Change (DECC) in July 2016. |
| 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. |
| 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 prioritizing data collection efforts. |
| 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 |

| | |
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| | significant source of GHG emissions because of a high GWP 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 |
| LSOA | LSOAs (Lower-layer Super Output Areas) are small areas designed to be of a similar population size, with an average of approximately 1,500 residents or 650 households. There are 32,844 Lower-layer Super Output Areas (LSOAs) in England. |
| 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. |
| Sunderland Care and Support | Sunderland Care and Support are a local authority trading company established by Sunderland City Council. Sunderland Care and Support are responsible for delivering a range of social care, health and support services to residents across the city of Sunderland and in the region. |
| Together for Children | Together for Children works on behalf of Sunderland City Council to deliver children's services in Sunderland. |
| Tyndall Centre | The Tyndall Centre is a partnership of universities bringing together researchers from the social and natural sciences and |

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| | 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. |

Table 2 - Glossary