

Appendix 1: Regional and council greenhouse gas emissions

The Council has conducted an initial review of the and borough and council greenhouse gas (GHG) emissions. This data will be used to inform priorities for a revised Net Zero 2041 action plan.

The principle sources of data used in this assessment are [UK local authority and regional GHG emissions national statistics](#), the Local Government Association [Greenhouse Gas Accounting](#) tool and the [Oxygen Insights Carbon Tracker](#) tool. These tools use differing methodologies to generate emissions data but together they give an overview of regional emissions, and those resulting from council activity, either directly, or via its procurement practices.

Regional GHG emissions refer to the total emissions of greenhouse gases within specific geographical area. These emissions can come from various sources, including transportation, industry, agriculture, residential energy use, and waste disposal. The UK local authority statistics collated by the Department of Energy Security and Net Zero (DESNZ) follow this methodology. This methodology is also used to set national and regional decarbonisation targets (e.g. Walsall Net Zero 2041 target).

Scope 1, 2, and 3 emissions is a methodology for categorising the different kinds of emissions an organisation creates due to in its own operations and its wider 'value chain' (i.e., suppliers, customers). It forms the basis of mandatory reporting protocols and is widely used by business and investors. For Walsall Council scope 1, 2 and 3 emissions are as follows:

- **Scope 1:** These are the GHG emissions released directly by the council and arise primarily from the fossil fuels it burns in boilers and internal combustion engines.
- **Scope 2:** These are the indirect GHGs emissions that are released from the energy the council buys, primarily electricity.
- **Scope 3:** These are the GHG emissions embodied in the goods and services the council buys for its own use, and on behalf of residents.

Chart 1 combines the Walsall's regional emissions data with the Scope 1, 2 & 3 emissions resulting from council activities and spending.

The latest available DESNEZ data (2021) indicates Walsall's total regional GHG emissions to be 1088 kt(CO₂e) [1000 tonnes carbon dioxide equivalent].

The council's scope 1 and 2 emissions calculated using the LGA GHG Accounting tool are estimated to be 13 kt(CO₂e).

The council's scope 3 emissions resulting from the goods and services it procures, estimated using the oxygen Insights Carbon tracker tool, are 103 kt(CO₂e).

The chart shows approximately 10% of Walsall's regional emission (scope 1, 2 and 3 combined) result from council activities.

(It should be noted that not all scope 3 emissions will be included in the regional emissions figure).

Tables 1, 2, 3 and 4 below provide further information on the sources of regional and council GHG emissions.

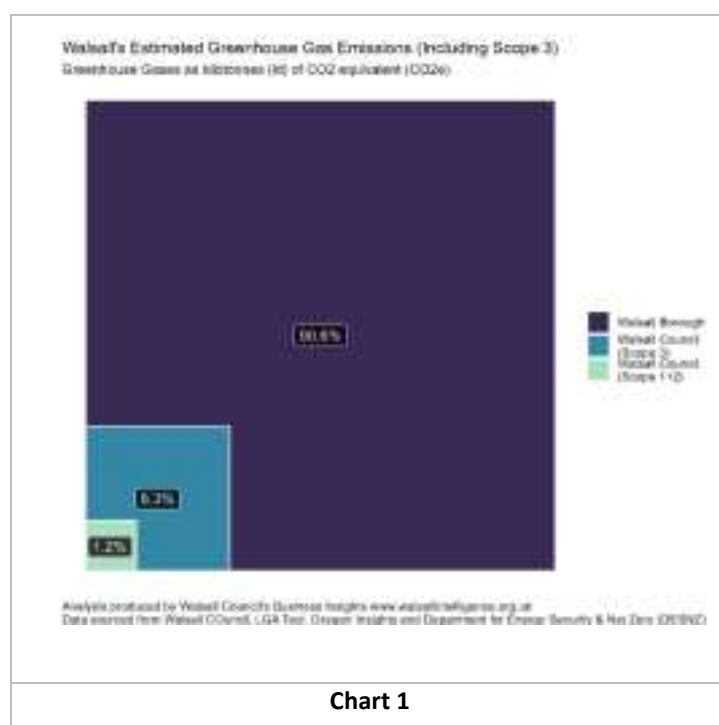


Table 1 - Walsall regional greenhouse gas emissions by sector

The Department for Energy Security and Net Zero (DESNZ) produces annual estimates for Greenhouse Gas (GHG) emissions in Walsall by sector. The latest available figures are for 2021 and indicate geographic emissions for Walsall are 1088 kt(CO₂e).

They show that Walsall's largest emitters of GHG are domestic sources (34.9%) and transport (34.2%). Industry contributes 17.8% with the waste management industry, public sector and commercial operations contributing approximately 4% each. Agriculture and land use, land use changes and forestry (LULUCF) account for the smallest contributions (0.7% and 0.5%, respectively).

The Walsall Net Zero 2041 target will require the elimination of GHG emissions in all sectors.

The first step in a programme to reduced GHG emissions is to promote resource efficiency. This requires a transition to less carbon intensive businesses activities and lifestyles. All energy will need to come from zero carbon sources.

The UK government has committed to fully [decarbonise the country's electricity system by 2035](#). This means the primary source of zero carbon energy that will be available will be electricity. Decarbonisation of the transport sector will require the replacement of internal combustion engines with electrically powered vehicles.

The domestic, commercial and the public sectors will need to insulate their buildings, apply other energy efficiency measures such as building management systems, and replace fossil fuel boilers with heat pumps or other zero carbon heat sources.

Industrial processes will also need to use electricity in preference to natural gas. In processes where this is not possible, other fuels such as hydrogen from zero carbon sources, will need to be considered.

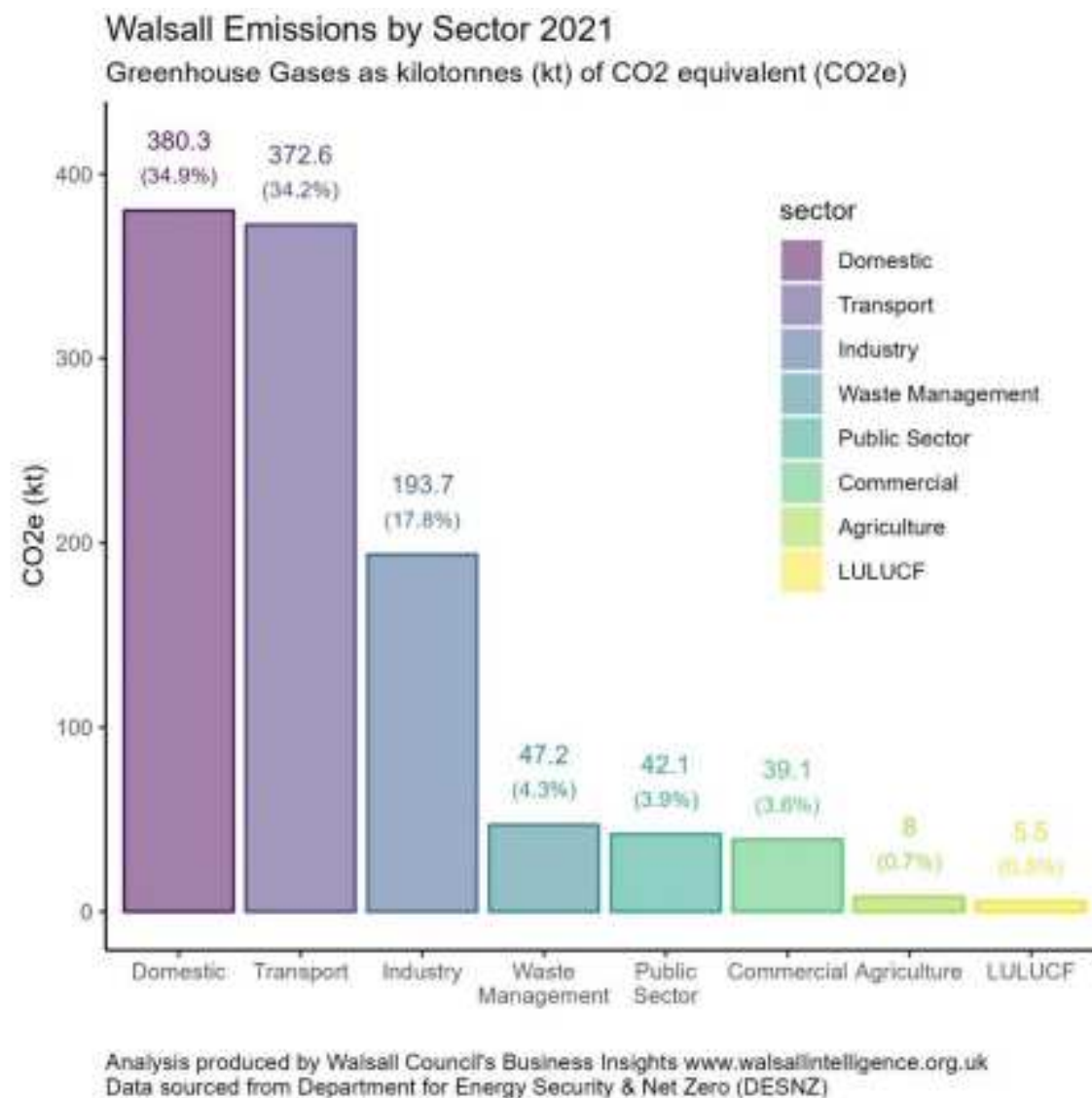


Table 2 - Walsall regional greenhouse gas emissions by sector and source

This chart breaks down the borough's greenhouse gas (GHG) emission into sources. It highlights the principal sources of emissions within each sector.

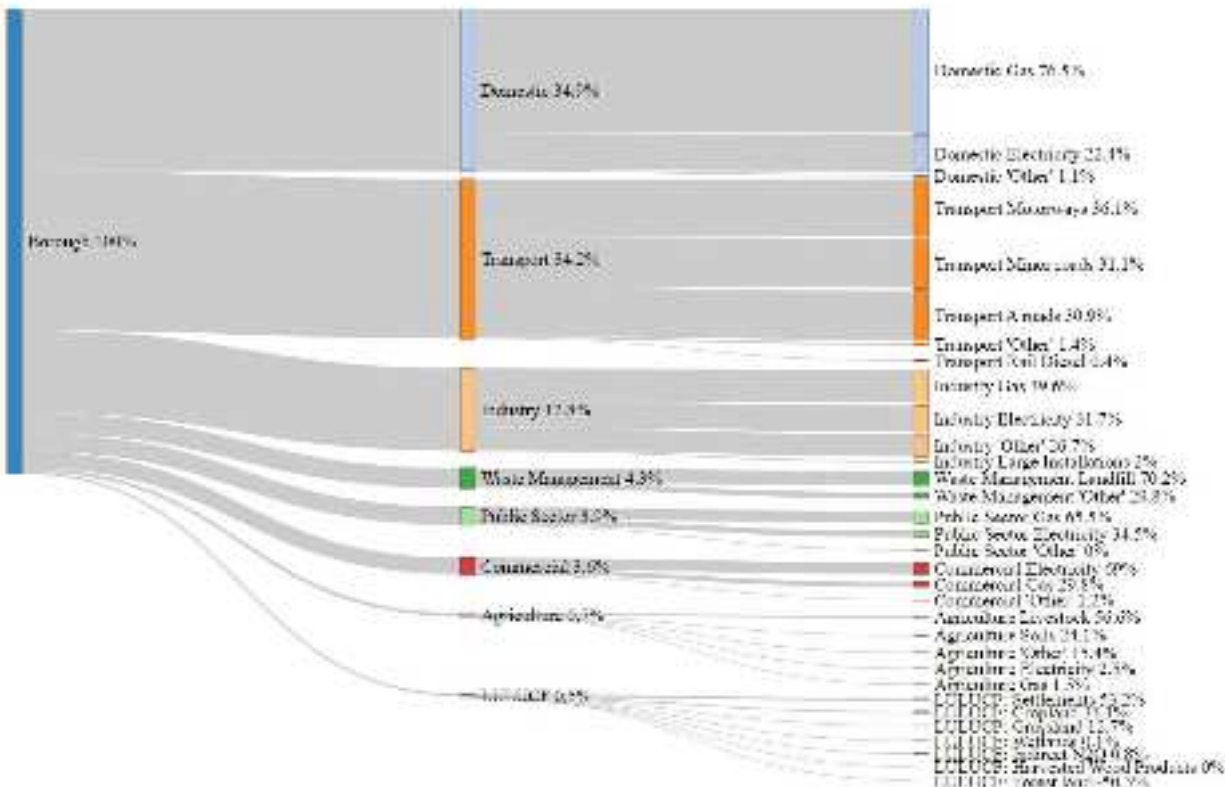
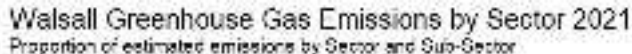
Domestic gas use is the single largest source and contributes 76.5% of all domestic emissions, and 26.7% of the borough's total emissions. In 2021 it was larger than the estimated contribution from industry, public and commercial sectors combined (approximately 25%).

Transport is the second largest emitter of GHG by sector in Walsall. Over a third of these emissions come from traffic on the M6 with the remaining emissions coming from other 'A' roads and minor roads in the borough.

Emissions from road vehicles are expected to fall significantly as electric vehicles replace those with internal combustion engines. The UK government plans to end the sale of new petrol and diesel cars and vans by 2035 with new heavy goods vehicles planned to be phased out from 2040. The council can promote the adoption of electric vehicles by ensuring EV charging infrastructure is available to all residents.

The 3.9% figure for the public sector emissions (e.g., Walsall council, NHS, police etc.) are predominantly the emissions from public buildings. The emissions resulting from fleet operations of public sector organisations are included in the transport sector figure.

Walsall Council is responsible for approximately 10% of the regional emissions. This is made up of 13kt(CO₂e) direct emissions⁽¹⁾ and 103 kt(CO₂e) from the goods and services purchased on behalf of residents⁽²⁾.



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Data sourced from DESNZ

(1) Estimate of scope 1 & 2 emissions generated using the [LGA Greenhouse Gas accounting tool](#)

(2) Estimate of scope 3 emissions based on council procurement spending and generated using the [Oxygen Insights tool](#)

Table 3 - Net Zero pathway projections for Walsall

This chart shows historic, annual GHG emissions in Walsall and potential carbon reduction pathways.

The financial crash of 2008-2009 and the Covid-19 pandemic (2020 – 2022) both had significant impacts on carbon emissions due to the decline in economic activity. However, the effects were not lasting, and emissions rebounded quickly after the initial shocks.

Long-term emissions decreased by 40.9% over from 2005-2021. This was mainly due to the decarbonisation of the electricity grid, with improvement in household energy efficiency and improvement in vehicle fuel efficiency also contributing. Structural changes in the UK economy (e.g., the decline in heavy industry) have also reduced emissions.

The data clearly illustrates the need to decouple GHG emissions from economic activity.

The Net Zero Pathways for Walsall have been generated using two methodologies. The [Scatter methodology](#) generates a projection of future emissions by assessing the effects of various possible interventions (e.g., technology adoption rates).

The [Tyndall Centre for Climate Change](#) assesses the maximum cumulative CO₂ emission allowable in Walsall if we are to make a fair contribution to the global and national decarbonisation effort. This ‘carbon budget’ is deemed to be 6900kt(CO₂e)) for Walsall and forms the basis of the Net Zero 2041 target.

The chart clearly illustrates that achieving the Net Zero 2041 target will be extremely challenging. To get close, it will be necessary to pursue all the interventions in the ‘higher ambition’ scenario whilst accepting that innovation will also be required to accelerate future carbon emissions reduction.

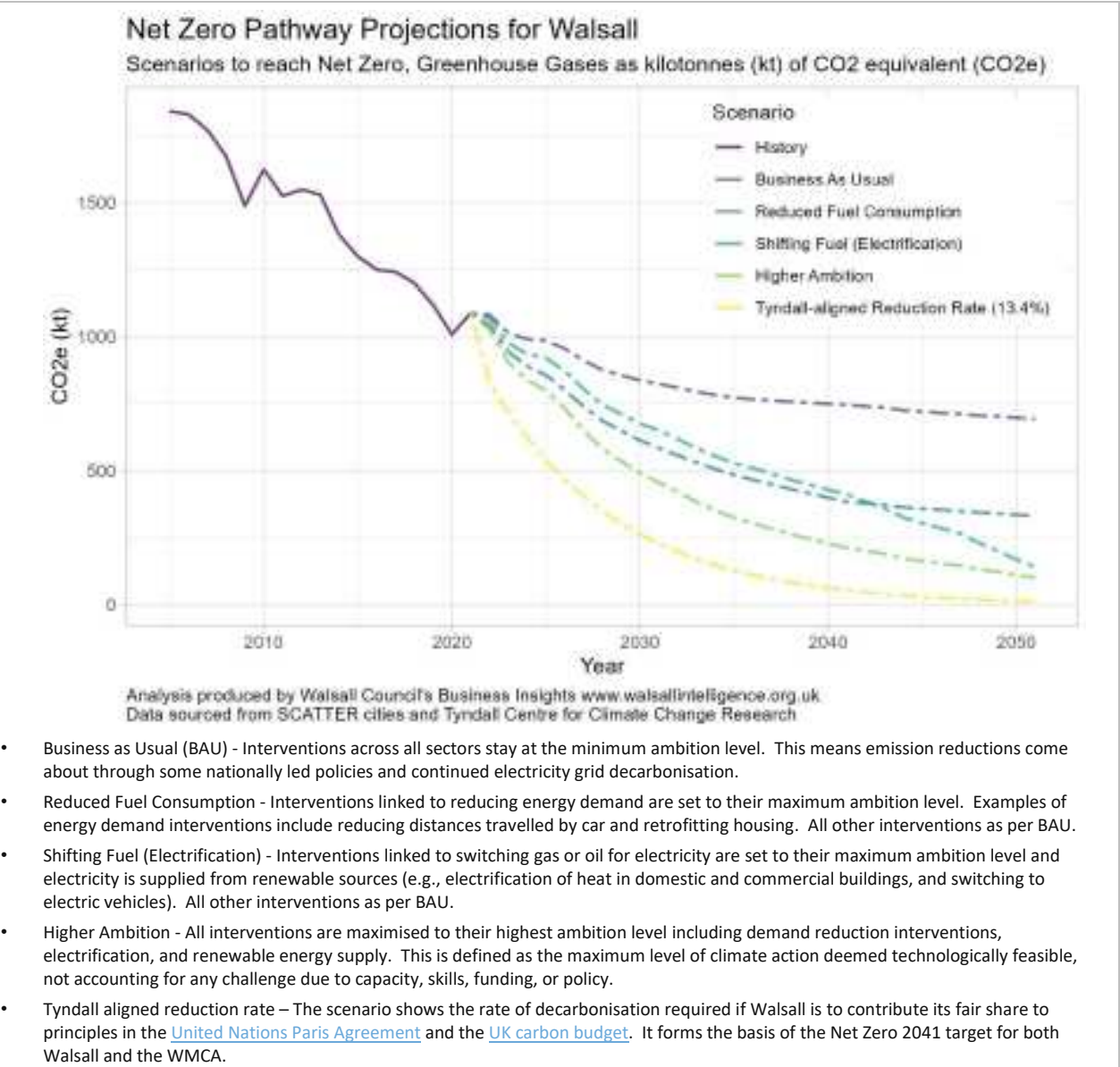
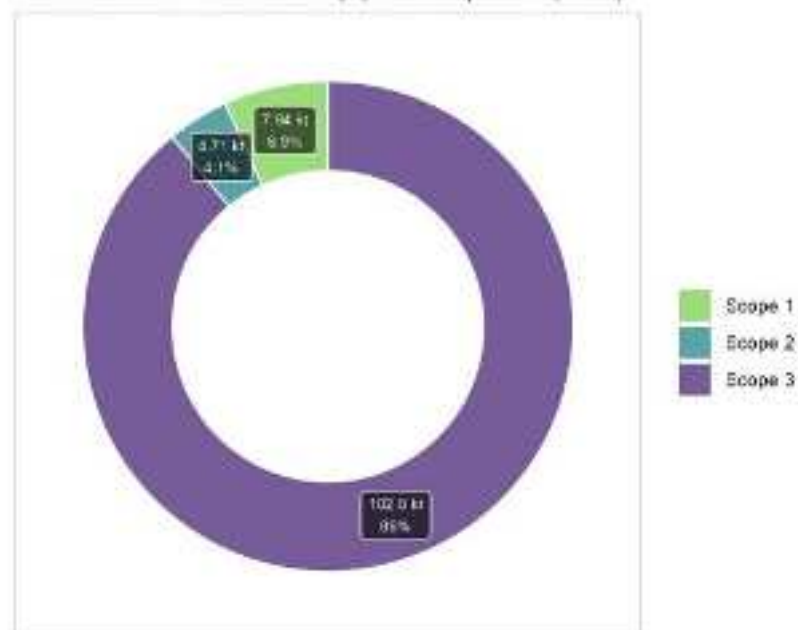


Table 4 - Walsall Council Scope 1 and 2 greenhouse gas emissions

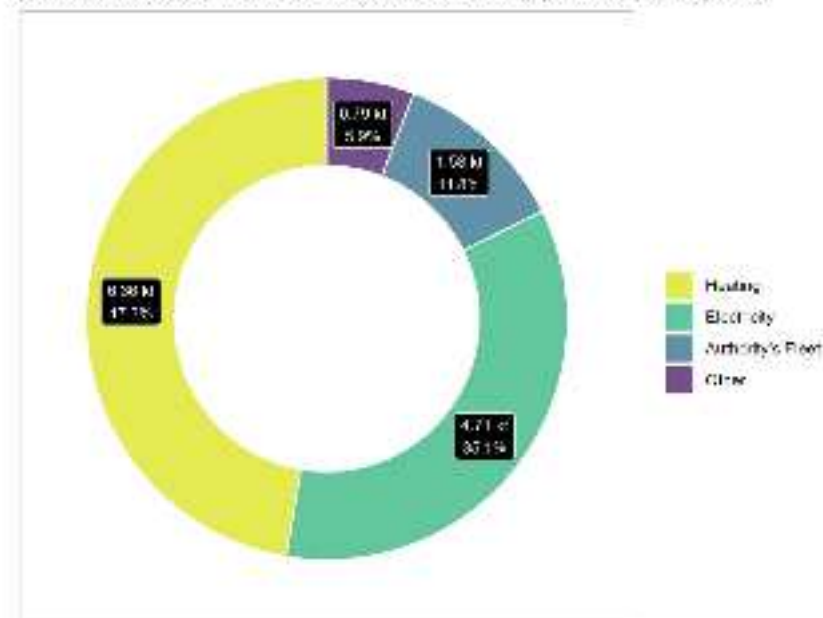
Walsall's Estimated Greenhouse Gas Emissions by Scope 2022-23
Greenhouse Gases as kilotonnes (kt) of CO2 equivalent (CO2e)



Analysis produced by Walsall Council's Business Insights www.walsallintelligence.org.uk
Data sourced from Walsall Council, Local Government Association GHG Tool and Oxygen Insights

- Scope 1 and 2 emissions have been calculated for 2022 -23 using the LGA GHG tool.
- The council's scope 1 and 2 emissions of 13 kt(CO2e) are approximately 11% of emissions resulting from council activities.
- Scope 3 emissions from the goods and services the council procures make up approximately 90% of emissions resulting from council activities.

Walsall's Estimated Greenhouse Gas Emissions 2022-23 (March-April)
Calculated in LGA GHG Tool, Greenhouse Gases as kilotonnes (kt) of CO2 equivalent (CO2e)



Please note: Some smaller contribution areas have not yet been collected. Impact to this chart is expected to be marginal.

Analysis produced by Walsall Council's Business Insights www.walsallintelligence.org.uk
Data sourced from Walsall Council, provided within the Local Government Association's GHG Tool 2023.

- The breakdown of council scope 1 and 2 emissions shows the majority of GHG emissions comes from heating council properties.
- The second largest source is from the electricity the council buys for its buildings and streetlights.
- The council fleet is the third largest source of emissions with the largest single contribution coming from the council's refuse collection vehicles.
- Other sources include staff business travel.

Table 5 - Walsall Council Scope 3 emissions

