

PB05 - Options for ESBC to develop community wealth-building energy projects

Appendix One: The Current Energy Picture in East Staffs

This section presents an overview of current energy consumption and carbon emissions in East Staffordshire as well as an outline of installed and operational or proposed low and zero-carbon/renewable energy projects in the area.

> CO₂ emissions for East Staffordshire:

In 2021, the annual estimate provided by the Department for Energy Security and Net Zero (DESNZ)¹ showed that the kilotonnes of carbon dioxide equivalent (kt CO₂e) emissions for all sectors in East Staffordshire was 655.3, which is below the mean estimate of all local authority districts in West Midlands of 695.1 kt CO₂e, and represents a 39% reduction from 1075 kilotonnes in 2005.

This is defined as the grand total of industry, commercial, public sector, domestic, transport, land use, land use change and forestry (LULUCF), agriculture, and waste management.

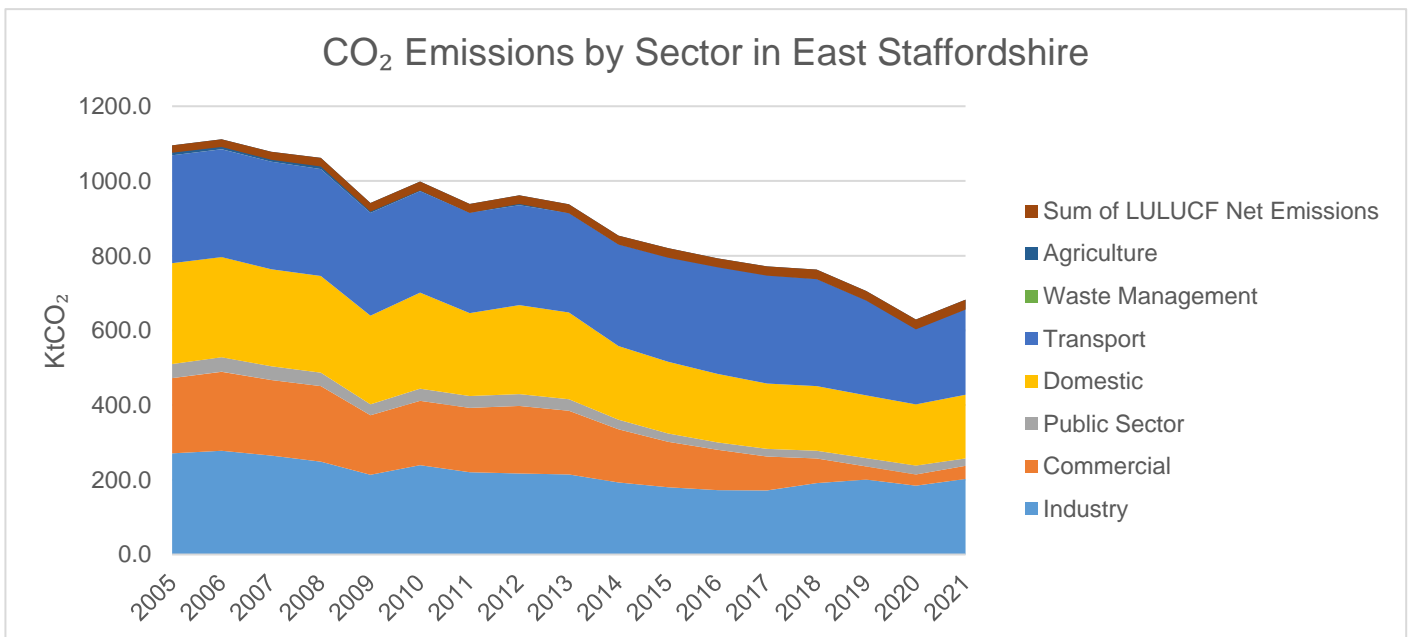


Figure 1: CO₂ Emissions by Sector in East Staffordshire (2021)

Figure 1 shows CO₂ emissions by sector with energy used to power and heat residential and industrial buildings, and road transport being the main sources of these emissions.

> Energy Consumption across East Staffordshire

¹ [UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2021 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2021)

In 2021 across East Staffordshire total electricity consumption was 642 Gigawatt hours (GWh), split between domestic use, 30% and 70% for non-domestic (commercial and industrial) use, exceeding the regional West Midlands local authority average of 453 GWh.

The total consumption of both domestic and non-domestic (commercial and industrial) gas in Gigawatt hours (GWh) in East Staffordshire was 1,120, which is similarly above the mean total consumption of all local authority districts in West Midlands at 844 GWh.²

Additionally, the National Statistics publication Energy Trends³, also produced by DESNZ, provides insight into the current renewable electricity generation, capacity, and number of sites in East Staffordshire:

- East Staffordshire has a population of 120,923
- The estimated number of households is 48,200
- There are 823 households with no central heating.
- There are an estimated 8,333 (18%) households in fuel poverty based on the Low Income Low Energy Efficiency measure.
- The number of registered communal or district heat networks in East Staffordshire as of December 2022 was 10, serving approximately 215 residential customers.
- East Staffordshire has 1,945 solar PV installations, 207 heat pumps, 9 on-shore wind and 3 hydro installations.⁴
- The solar PV, hydro, and wind installations combined generated 50,094 Mwh during 2022 – approximately 8% of the total electricity consumed in the borough.
- There are 656 electric vehicle charging points (A combination of both public and private residential)

In summary, East Staffordshire has high energy usage, low numbers of renewable energy installations, and above-average fuel poverty, pointing to potential areas to target for efficiency improvements and support.

> CO₂ emissions for the Council

During 2021-2022, the council produced a total of 2119 tonnes of CO₂e.

The council's emissions are broken down in Figure 2 and show that the council's vehicle fleet accounted for 38% of the emissions and energy use in corporate buildings (gas and electric) approximately 18%.

² Data was sourced from the DESNZ '[Subnational total final energy consumption, UK, 2005 to 2021](#)'.

³ Data was sourced from National Statistics publication Energy Trends produced by the DESNZ: [Renewable electricity by local authority 2014 2022.xlsx](#)

⁴ Source: [NG distribution substations data \(September 2021\)](#)

The council’s outsourced services accounted for the majority of emissions, another 43%. The outsourced services included are the leisure facilities at Meadowside, Uttoxeter and Shobnall and the fuel used by the landscape contractor’s (idverde) vehicle fleet.

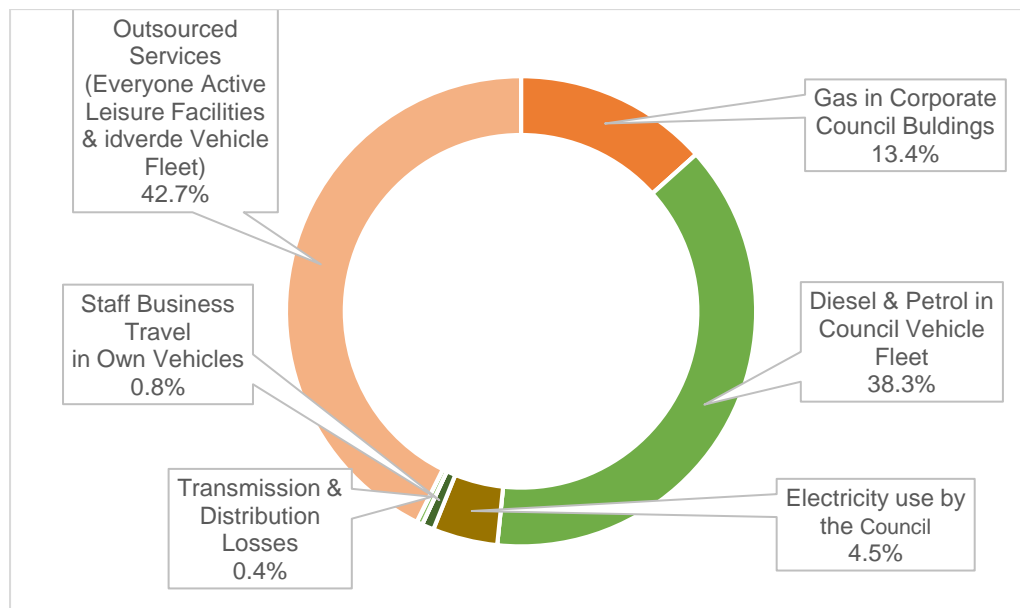


Figure 2: CO₂ Emissions by source for East Staffordshire Borough Council (2021)

The leisure facilities alone accounted for 38% of the total emissions.

> Energy Consumption at the council

Covering the 12 months of April 2022 – March 2023 the Council consumed around 488,856 kWh of electricity equivalent to 94.54 emissions (tCO₂e)

In October 2023 the Council moved to a new Renewable Energy Guarantees of Origin (REGO) green energy tariff. The REGO scheme certifies that the electricity supplied has been generated from renewable sources, therefore future emissions associated with our electricity will be calculated to consider this.

Covering the same period the Council consumed around 1,551,456 kWh (Gross CV) of natural gas, equivalent to 283.2027782 emissions (tCO₂e)

The Council’s current gas and electricity procurement is done through professional buying organisation, ESPO and is supplied by Total Energies Gas and Power with current arrangements due to expire in October 2024.

During the course of 2021 to 2023 the Council has seen significant volatility in energy pricing due to the post-pandemic energy market and the war in Ukraine impacting international gas prices.

The future needs for gas and electricity at the Council will vary as a result of:

- Heat decarbonisation projects
- Fleet electrification

- Increases or decreases in service provision
- Estates rationalisation

The direct generation of renewable energy will help the Council to achieve a stable, decarbonised supply of electricity at an affordable price. To be in line with the Government's target date for the decarbonisation of the UK electricity supply this will need to be done by 2035.