

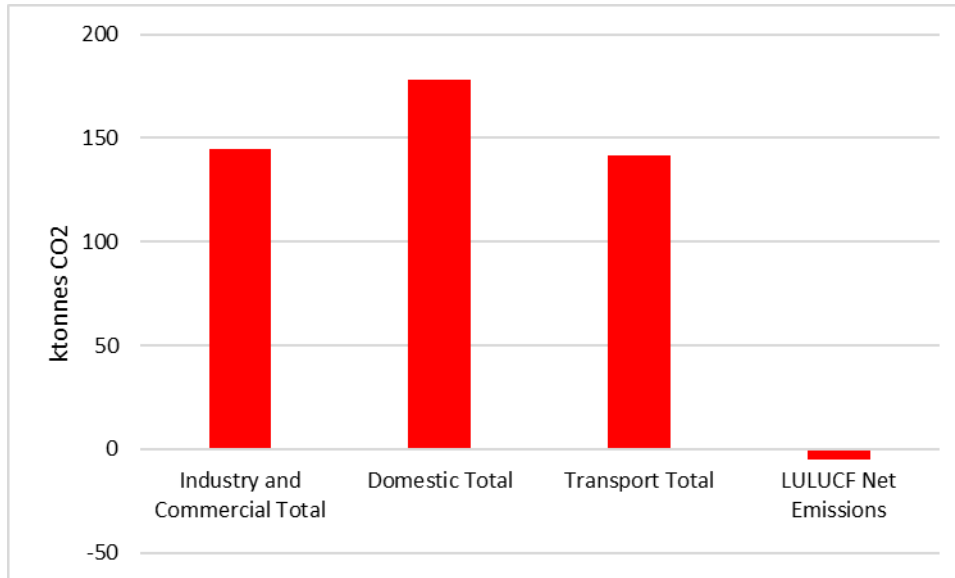
Chesterfield Climate Alliance

Analysis of Chesterfield Carbon emissions – April 2021

Overall emissions

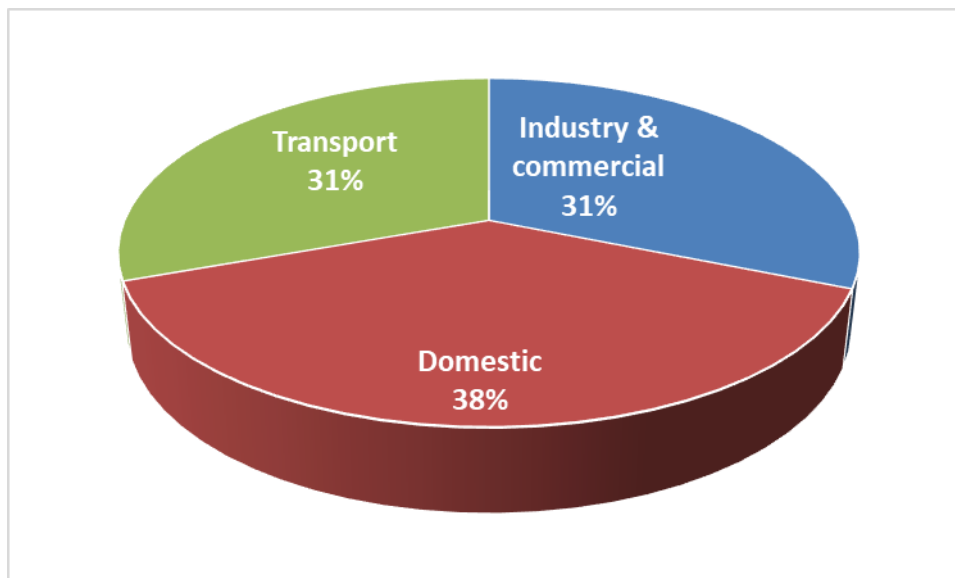
In 2018 the borough of Chesterfield emitted 459,700 tonnes of carbon dioxide, an increase over the previous year. This brought emissions per person up to 4.4 tonnes/capita.

Figure 1: Emissions of CO2 in Chesterfield borough in 2018 (kt CO2)¹



Domestic emissions (gas heating, electricity) was almost two fifths (38%) emissions while transport and Industry and commercial emissions were just under one third each.

Fig 2: Emissions of CO2 in Chesterfield borough in 2018, % by sector



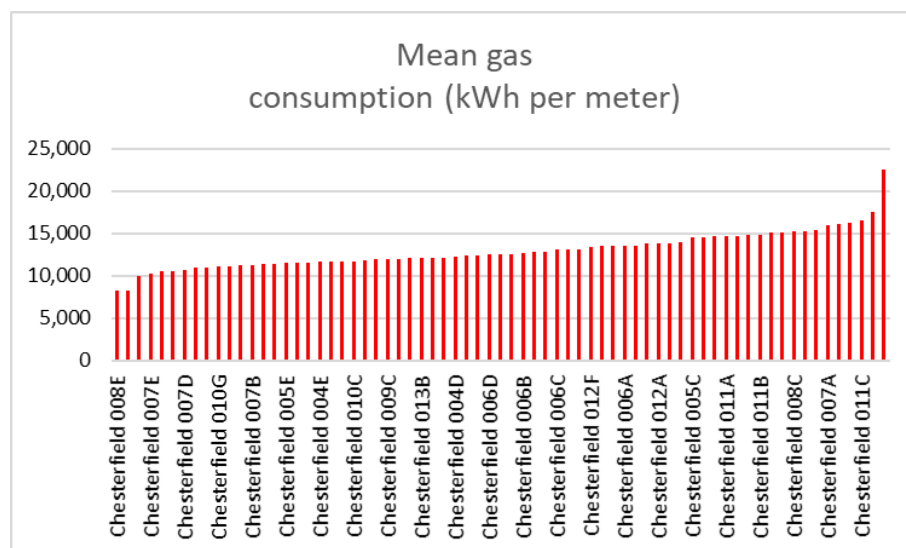
Domestic emissions

Roughly 64% domestic emissions (114kt) in 2018 were from gas heating. Looking at gas emissions per capita by Lower Super Output Area (LSOA), the areas with the highest emissions (West, Walton,

¹ <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2018>

Brookside) have almost three times the emissions per meter (household) than the areas with the lowest emissions (Loundsley Green, Birdholme).

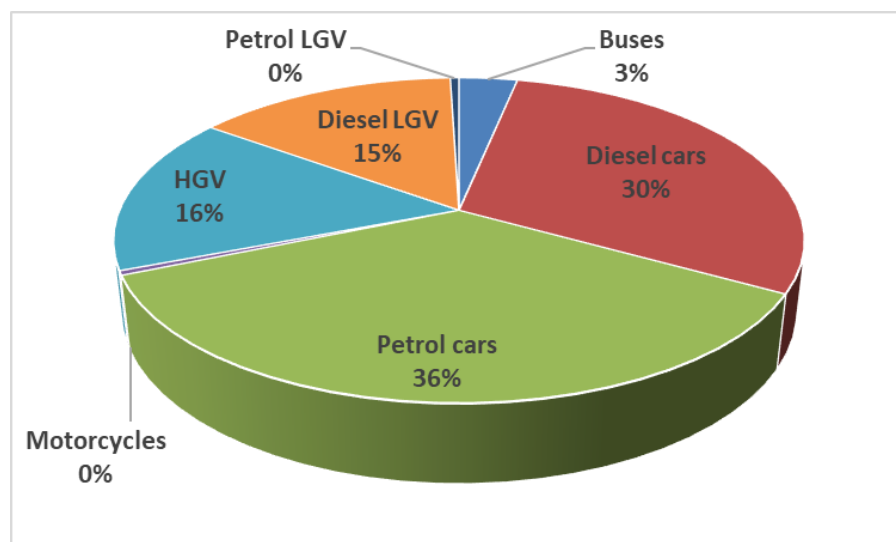
Fig 3: Mean gas consumption (kWh per meter) in different Lower Super Output Areas in Chesterfield in 2018²



Transport emissions

Sub-national transport data is available in terms of fuel consumption, which is roughly proportional to carbon emissions (although diesel emissions will be proportionately lower and petrol emissions proportionately higher). In 2018 petrol and diesel cars combined were responsible for 66% of the road transport fuel consumption in the borough. Nationally cars were responsible for 61% of road transport emissions. Applying the same percentage to Chesterfield would mean that cars were responsible for around 83ktCO₂ in 2018.

Fig 4: Transport fuel consumption (tonnes oil equivalent) in Chesterfield borough in 2018 by vehicle type³

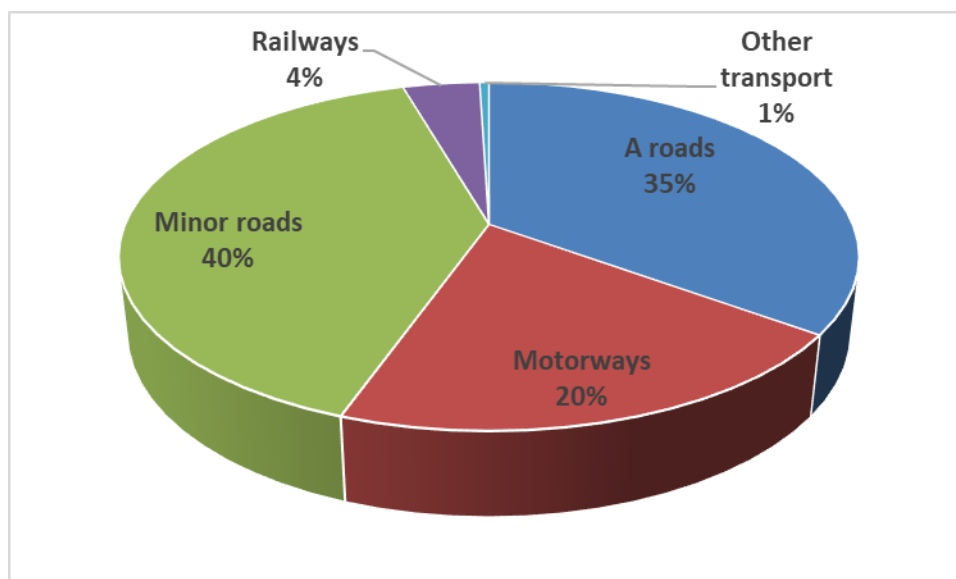


The vast majority of transport emissions are from road vehicles on roads within or likely to be within the control of Derbyshire County Council (ie minor roads and A roads).

² <https://www.gov.uk/government/collections/sub-national-gas-consumption-data#local-authority-data>

³ <https://www.gov.uk/government/collections/road-transport-consumption-at-regional-and-local-level>

Fig 5: Transport CO2 emissions in Chesterfield borough in 2018 by road type



Implications for targeted campaigns

Given that over two fifths (43%) of emissions in Chesterfield borough come from home heating and car transport, it would make sense to target reduction measures at these two high emitting sectors.

We propose a dual strategy

- 1) Target high users to help them to be more efficient & environmentally conscious
- 2) Target people who can't afford their fuel to help them to be more efficient, thus saving money

High users of energy

Home heating emissions are generally higher in the relatively higher income areas of Chesterfield, where residents are also able to afford measures to address emissions (insulation or conversion of gas to lower carbon heat pumps or renewable energy).

Typically higher income households also have more cars, bigger cars and driver further than lower income households. Therefore it would also make sense to target reducing car emissions at these households. While these may involve promoting electric cars, it is important for other environmental, safety and quality of life reasons to reduce car mileage overall. This can be done by promoting home working, where possible, as well as shift to other low or zero carbon forms of travel.

Low users of energy

A significant proportion (10%) of households in Chesterfield were in fuel poverty in 2018, equivalent to over 5,000 households⁴. These are households who cannot afford to heat their homes properly and therefore suffer disproportionately from ill health (and conversely because the properties are generally poorly insulated will suffer from over-heating effects in heat waves).

For lower income households or households without a car (over a fifth of households in the UK, rising to 65% for the lowest income households)⁵ it is also important to provide affordable, convenient and safe alternatives to travel such as improved public transport, and segregated walking and cycling routes.

⁴ <https://www.gov.uk/government/statistics/sub-regional-fuel-poverty-data-2020>

⁵

<https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/datasets/percentageofhouseholdswithcarsbyincomegroupandhouseholdcompositionuktablea47>