Chorley Council

Carbon Footprint Report 2019/20

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1. Background

1.1. Chorley Council is committed to reducing Greenhouse Gas emissions across its estate and operations.

1.2. Chorley Council is a member of the UK100, joining other local authorities to lead the UK's response to climate change, acting sooner than the government's goal by making substantial progress within the next decade to deliver Net Zero. We commit to do everything within our power and influence to rapidly reduce our greenhouse gas emissions and work with our residents and businesses to bring our wider communities' emissions in line with Net Zero as soon as possible. We pledge to understand our impact on climate change, prioritise where action needs to be taken and monitor progress towards our goals. We will collaborate with our communities to build consensus for the solutions we need to transition to a Net Zero society that delivers multiple benefits and is fair, just and works for everyone.

1.3. Chorley Council declared a climate emergency in November 2019 and set the ambitious goal of being net-zero by 2030. In order to provide a baseline upon which to measure improvements the Council must first establish its current carbon footprint. This work will be used to inform the Council's Climate Change Strategy.

1.4. Within the Climate Change Strategy 2022 a priority was set to monitor the carbon footprint of the Council and Borough annually, in order to monitor progress towards the 2030 goal and inform future work and actions.

1.5. A carbon footprint is a measure of the greenhouse gas emissions released by an individual, organisation or communities' activities. The carbon footprint for the Council as an organisation and the borough have been calculated.

1.6. As a tier 2 authority, the council does not have the level of direct control over the borough as it does over its own resources, these include: Planning and building control; Environmental health; Housing; Parking; Parks and countryside; Waste management; and leisure facilities.

1.7. Analysis of Borough emissions allows for the identification of key emitting sectors that the council can support to reduce carbon emissions.

2. Methodology

Reporting Period

2.1. Carbon emissions are measured over the financial year, therefore the period covered in this report is 1st April 2019 to 31st March 2020.

Baseline Year

2.2. The financial year 2019/20 was chosen as the baseline year as it was the most readily available data set following the Councils declaration of a climate emergency. The borough data is published with a two-year time lag therefore 2019 is the most recent dataset for the borough as a whole.

Carbon Dioxide Equivalent (CO2e)

2.3. Carbon dioxide is not the only greenhouse gas, there are five other key greenhouse gases that contribute to global warming, these are: Methane, Nitrous Oxide, Hydrofluorocarbons, Perfluorocarbons and Sulphur Hexafluoride.

2.4. Each Greenhouse Gas varies in potency, which relates to their ability to trap heat in the atmosphere. For example, methane is 80 times more potent than carbon dioxide. Therefore, to standardise results, all the Greenhouse Gases are collectively expressed under a single value termed the carbon dioxide equivalent (CO2e).

2.5. CO2e accounts for the seven main Greenhouse Gases that contribute to climate change, as detailed in Table 1.

2.6. CO2e conversion factors are set by the Department for Business, Energy & Industrial Strategy (BEIS) on an annual basis.

Table 1: Details of the seven main Greenhouse Gases, expressed under Carbon Dioxide Equivalent (CO2e), and the main sources for these emissions.

Greenhouse Gases	**Main Sources of Greenhouse Gases**
Carbon Dioxide (CO2)	- Coal, Oil and Gas (Fossil Fuels) - Manufacturing - Cement Production - Deforestation
Methane (CH4)	- Livestock - Organic waste
Nitrous Oxide (N2O)	- Agriculture fertiliser - Waste management
Fluorinated Gases (F-Gases): -Hydrofluorocarbons (HFCs) -Perfluorocarbons (PFCs) -Sulphur Hexafluoride (SF6) -Nitrogen Trifluoride (NF3)	- Refrigeration - Aerosols

Council Emissions Analysis

Scope

2.7. Greenhouse gas emissions are categorised into three groups known as ‘Scopes’ which are the most internationally used tool, defined within the Greenhouse Gas Protocol. Definitions and activities of each scope can be found in Table 2.

Table 2: Description of the emission sources included within the Councils carbon footprint within each scope

Greenhouse Gases Emissions Scopes		Activities
Scope 1	**Direct emissions** from sources owned or controlled by the organisation	- Gas for heating Council Buildings - Fuel consumption from council fleet
Scope 2	**Indirect emissions (owned)** produced by consuming purchased energy from a utility provider	- Electricity for building use
Scope 3	**Indirect emissions (not owned)** produced from Council activities but at sources not owned or controlled by the Council	- Staff business travel - Transmissions and distribution losses within the supply chain - Well to Tank emissions during energy production - Waste disposal

Missing data

2.8. The Council has worked to collect all available to ensure the Council carbon footprint is accurate and well informed. With that being said some data is missing or has been excluded, details of each can be found below in Table 3.

2.9. It is unlikely that this missing and excluded data is likely to have a large impact on the overall carbon footprint.

Table 3: Missing data for the 2019/20 carbon footprint calculations

Missing Data		**Outcome**
Scope 1	2019 Annual Fleet Miles	An annual average was calculated with the fleet miles of one month for calculations
	Assets which the Council own but are not in charge of electricity or gas	Excluded due to lack of control over sources
Scope 3	Recycling data for a number of assets not held	Excluded due to lack of figures, overall waste and recycling emissions still included
	Procurement and material use	Excluded due to lack of data
	Business use of public transport	Excluded due to lack of data

Conversion factors

2.10. The methodology behind the calculation of GHG emissions is through the application of documented and approved GHG emission conversion factors.

These factors are calculated ratios which relate emissions to a proxy measure of activity from an emissions source.

2.11. Further detail on the methodology and emissions factors can be found at; Government conversion factors for company reporting of greenhouse gas emissions - GOV.UK (www.gov.uk)

2.12. The data of emission source used, also known as activity data, is multiplied by the relevant emission factor to calculate CO2e equivalent emissions

CO2e= activity data x emission conversion factor

2.13. Emission factors for the 2019 period can be found on; Greenhouse gas reporting: conversion factors 2019 - GOV.UK (www.gov.uk)

Borough emissions

Data Source

2.14. Each year, BEIS produce estimates of carbon dioxide emissions at a local authority and regional level. These statistics provide the most reliable and consistent breakdown of CO2 emissions across the country, using nationally available data sets.

2.15. The data provided covers estimated emissions for the period between 2005 and 2019. This is due to a two-year time lag between publishing figures.

2.16. The raw data is published on the GOV.UK website and is accessible via the following link: https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019

Sub sectors

2.17. The emissions sources for each borough are split across three main end-user sectors: Industry and Commercial, Domestic and Transport. These are further broken down to individual subsectors, as detailed in Table 4 below.

Table 4: Main sectors and subsectors representing emission sources across the borough.

Industrial and Commercial	**Domestic**	**Transport**

- Electricity - Gas - Large Industrial Installations - Other Fuels - Agriculture	- Electricity - Gas - Other Fuels	- A Roads - Minor Roads - Other

2.18. An additional sector is Land Use, Land Use Change and Forestry (LULUCF). This is omitted from the main dataset, as BEIS do not consider this sector to be within the scope of local authorities.

3. Results

Council Emissions

3.1. Overall, the total Council CO2e emissions for 2019/20 was 1,662,632 kg CO2e.

3.2. The distribution of emissions across each activity and subsequent scope is shown in Figure 1 and Table 5. The three most significant sources of emissions were:

a. Mains Gas, 64% of total emissions (1,079,572 kg Co2e)
b. Mains Electricity, 31% of total emissions (529,004 kg CO2e)
c. Fleet Transport, 2% of total emissions (37,205 kg CO2e)

Figure 1: Chorley Council source emissions (CO2e) for 2019/20

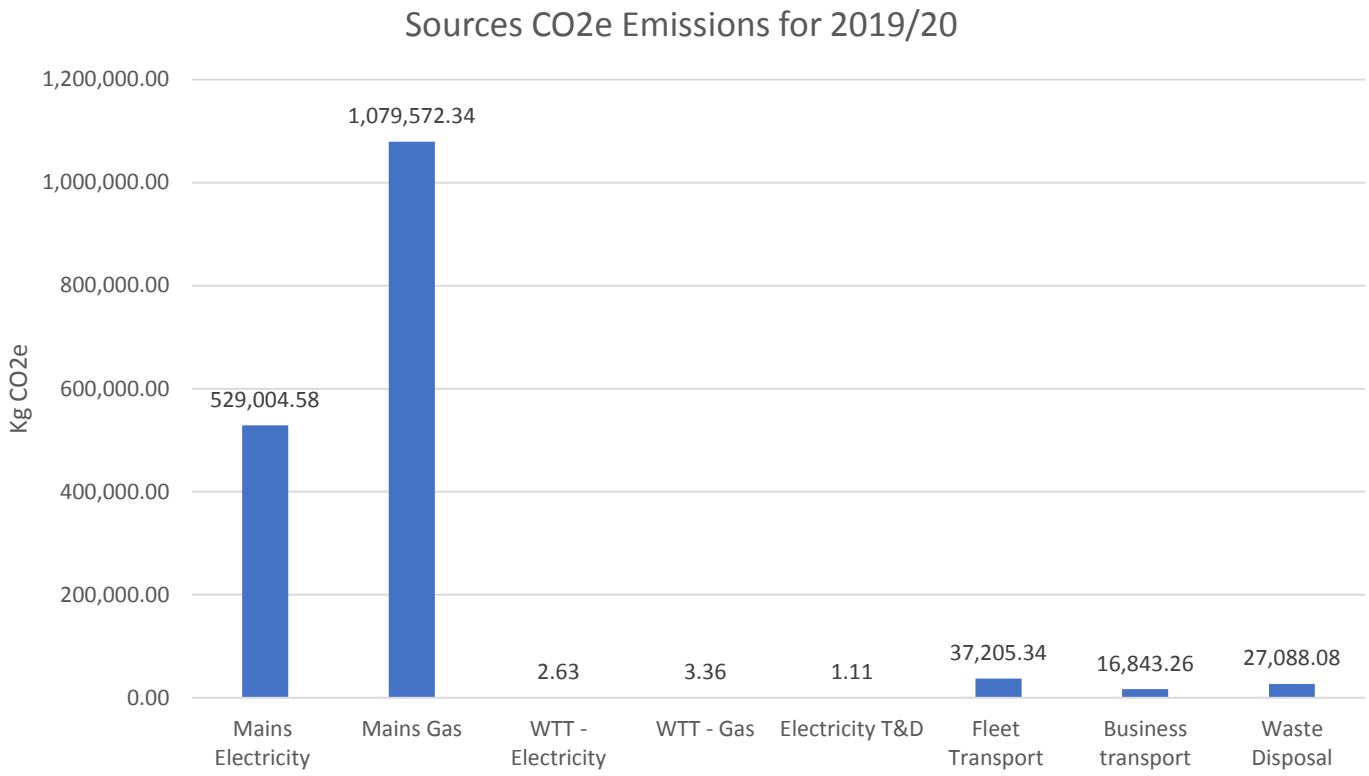


Table 5: Proportion of Chorley Council emissions per scope

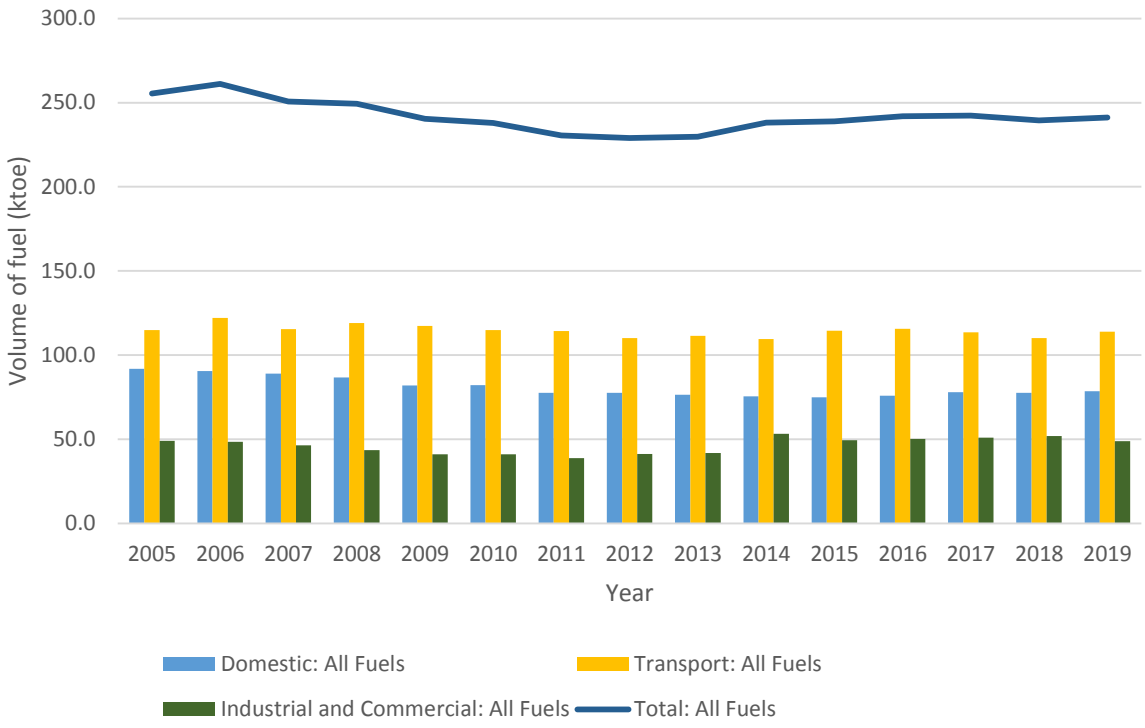
Scope	**Proportion of emissions**
Scope 1	67% (1,116,777 kg CO2e)
Scope 2	32% (529,004 kg CO2e)
Scope 3	2% (43938 kg CO2e)

Borough Emissions

3.3. The total fuel (gas, electricity, coal, biowaste, petrol, diesel) used within the borough for 2019 was 241 kt CO2 of which transport was the largest contributing sector. Shown in Figure 2.

Figure 2: Chorley Borough total fuel use and sector contribution between 2005 and 2019

Date Source: https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019

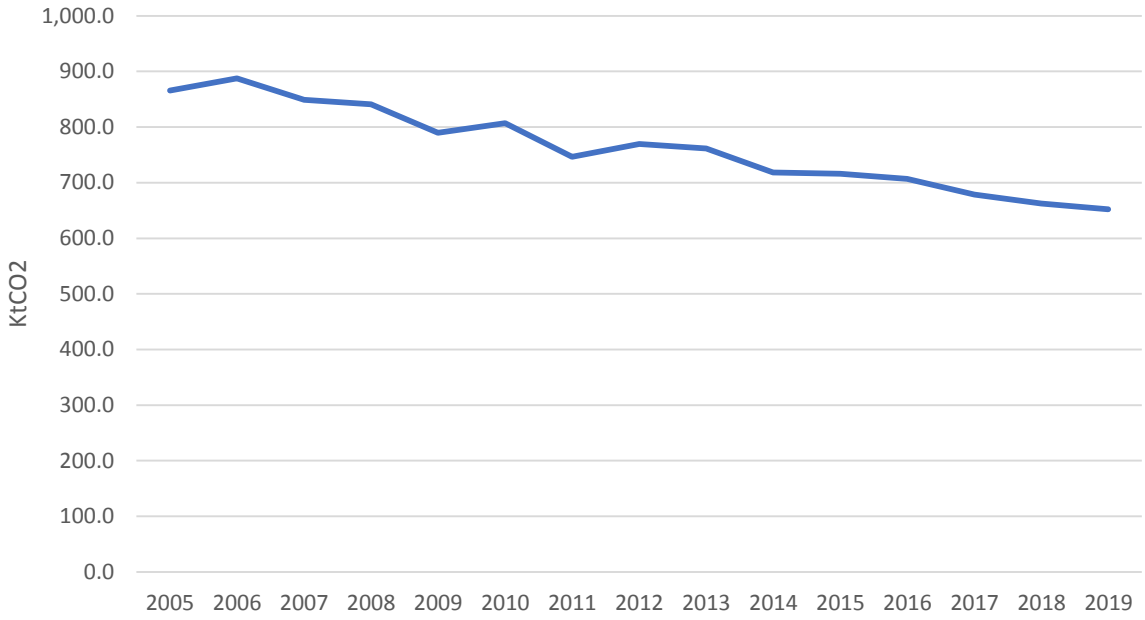


3.4. Overall estimated CO2 emissions for the Chorley borough in 2019 was 651.9 kt CO2 emissions. The emissions between 2005 and 2019 have been gradually decreasing.

3.5. With an estimated 2019 population of 118,600 which equates to 5.5 t CO2 per capita.

Figure 3: Chorley borough CO2 emissions between 2005 and 2019

Date Source: https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019



4. Moving Forward

4.1. This dataset represents the baseline figures for comparison moving forward and will be used to inform actions within Climate Change strategy updates and progression of decarbonisation activities.

4.2. Further progressions and actions can be made once the baseline dataset is compared against recent carbon footprints.

4.3. The carbon footprint will be monitored annually with future and update reports will be produced moving forward

The Council

4.4. With gas and electricity accounting for over two thirds of the Councils emissions, the decarbonisation of the assets is essential. The Council will determine the feasibility and carbon reduction of adding carbon reducing measures to the main Council assets.

4.5. The third highest emission source was the fleets transportation. This data source was averaged due to the lack of a full annual set, measures will be taken so that a more accurate dataset can be collected in 2022. The Council will continue to progressively electrify the fleet as a long-term action within the climate change programme.

The Borough

4.6. Whilst it is clear that overall emissions from the borough are reducing work within the community and which businesses can be taken to aid in the lowering of emissions as the borough.

4.7. Chorley borough has a large proportion of through traffic due to major roads and motorways crossing through the borough. As a local authority no action can be enforced to lower through traffic emissions however work can be taken to support sustainable transport for the residents which is reflected within the strategy.

4.8. Work will continue to be taken to work with and support the community to lower the emissions from the borough.