Pathway to Zero Carbon Lifestyle Emissions

Kirklees Climate Emergency Group

Kirklees Average Lifestyle Emissions Introduction

We can look at emissions using either a "**production**" or a "**consumption**" model. Both models can be useful.

Production emissions included **all emissions generated within Kirklees**: fuel burned, Kirklees industry emissions, vehicles within Kirklees.

Consumption emissions include **all emissions Kirklees residents are responsible for**: home energy, travel including outside of Kirklees, food and consumer goods bought by Kirklees residents.

This report looks at consumption emissions as a way of **empowering Kirklees residents** to understand and make the changes necessary for the **climate emergency** declared by Kirklees Council.

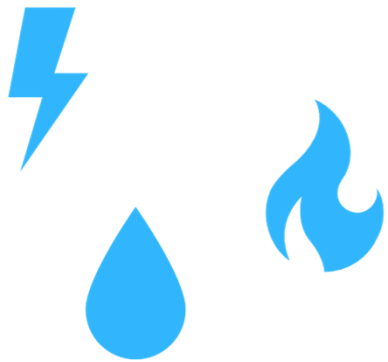
This report uses **average Kirklees lifestyle figures** and looks at the warming resulting from those emissions – ***if everyone on earth were to emit the same.***

What warming?

Current Kirklees Average Lifestyle [1] Home

Household Energy Bills

* Household size - Average 2.5 people [2]
* Bills per household
  * Electricity £625 / year [3]
  * Gas £900 / year [3]
  * Oil £45 / year [3]



0.3 °C hotter

1. Consumption based personal carbon emissions calculator used from: https://myinnerplanet.weebly.com/
2. Kirklees Average https://www.kirklees.gov.uk/beta/information-and-data/pdf/fact-2017.pdf
3. Kirklees Average https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics assumed 24p/kWh Electricity, 6.5p/kWh Gas, Other fuel emissions translated to Oil 58p/litre, no standing charges for simplicity.

Current Kirklees Average Lifestyle

Travel

Travel per person

* Flights 4 hours / year [1]
* Buses 430 miles / year [2]
* Trains 630 miles / year [3]
* Car journeys 2000 miles / year [2]

0.4 °C hotter

1. UK Average https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/695421/Copy_of_2016_Final_emissions_data_tables.xlsx
2. Kirklees Average https://www.gov.uk/government/statistical-data-sets/road-transport-energy-consumption-at-regional-and-local-authority-level
3. UK Average https://www.gov.uk/government/statistics/transport-statistics-great-britain-2018

Current Kirklees Average Lifestyle Stuff

Stuff per person

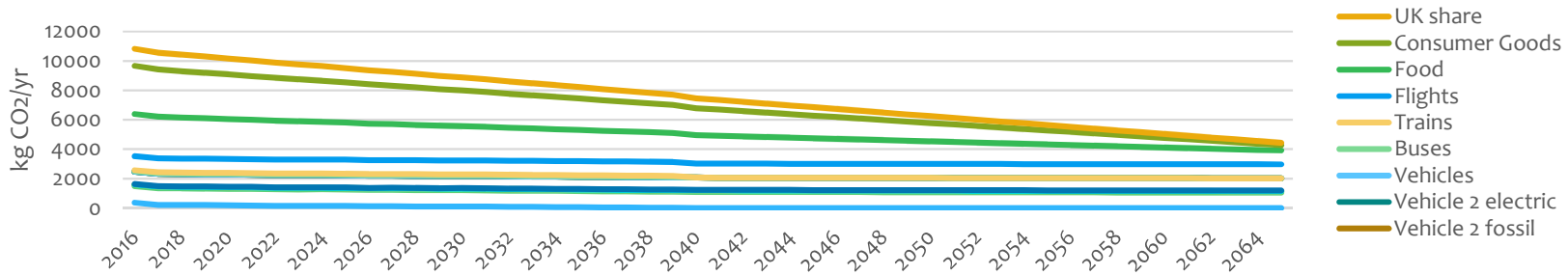
* Food [1]
  * Red meat: 3 portions / week
  * Fish, Pork and Poultry: 1 portion / day
  * Dairy and Eggs: 2 portions / day
  * Local, organic, processed, composting and waste all average
* Consumer Goods £7,000 / year [2]

0.9 °C hotter

1. UK Average https://www.gov.uk/government/publications/family-food-201617/purchases & https://www.gov.uk/government/statistics/ndns-results-from-years-7-and-8-combined
2. Kirklees Average https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/datasets/householdexpenditurebycountriesandregionsuktablea33 including all expenditure except household energy bills, travel and food.

Current Kirklees Average Lifestyle Results

* We currently use about **10 tonnes CO2 per year** each in Kirklees [1]
* Even with planned infrastructure changes [2] then our current lifestyles will emit over 375 Tonnes in the next 50 years [1].
* If everyone on Earth emitted this, we'd reach nearly **3°C warming** by 2100 [3].

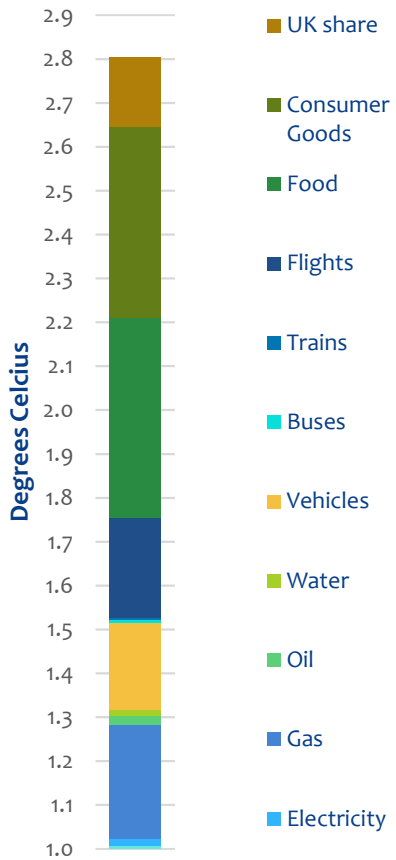


1. Sum of all preceding information – using calculator at https://myinnerplanet.weebly.com/ - Discrepancy between production and consumption based accounting of about 70%. Production based accounting (official figures) ignore imported consumer goods and food and aviation and shipping.
2. Reducing carbon intensity of electricity - predictions from BEIS, UK to be zero carbon by 2050, Assume (optimistically) food, UK share and consumer goods reduce carbon intensity steadily to zero by 2050 in line with UK zero carbon target.
3. Derived from Carbon budgets given in C.1.3 https://www.ipcc.ch/sr15/chapter/spm/. Using calculator at https://myinnerplanet.weebly.com/

Current Kirklees Average Lifestyle Results breakdown

2.8°C heating

Temperature Rise [1]



Impact

Food

Consumer Goods

Gas

Flights

Vehicles

UK share

Oil

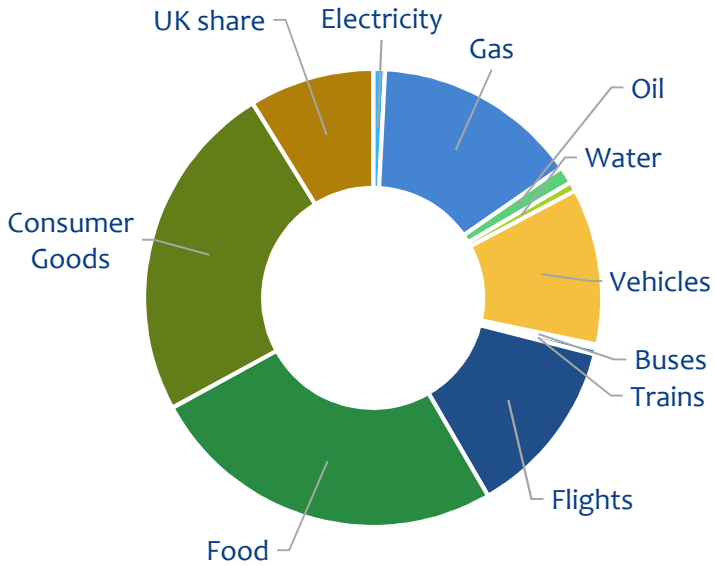
Electricity

Trains

Water

Buses

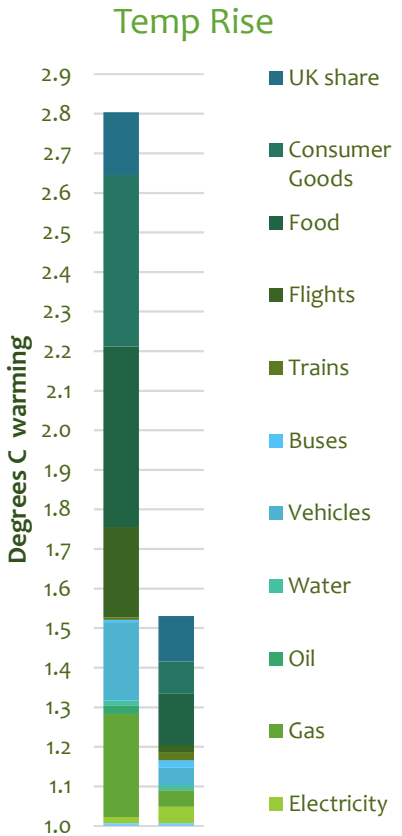
Current Kirklees Average Lifestyle [1]



1. Results for projected total emissions over 50 years not one year of emissions

1.5°C Kirklees Average Lifestyle Emissions

1.3 °C cooler



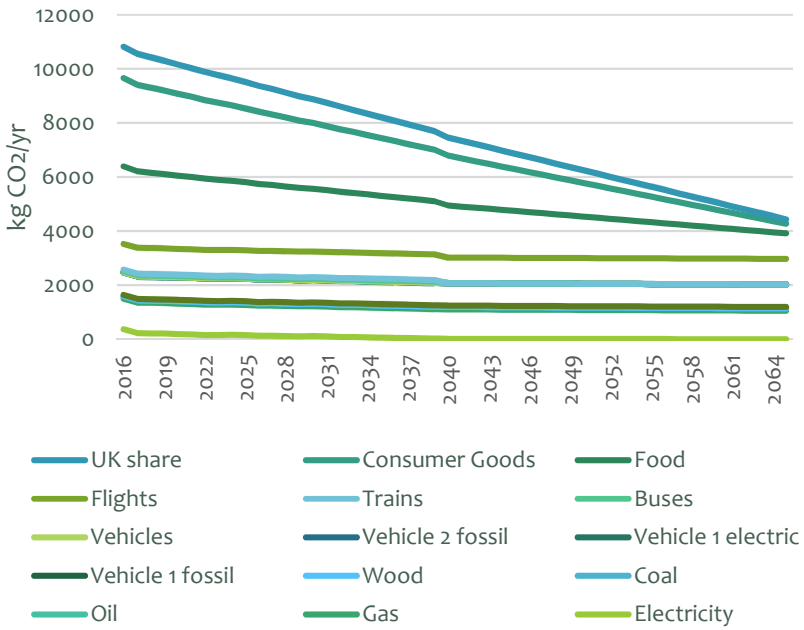
* We want to get from about **3°C** to **1.5 °C** [1]
* We are already at about 1 °C
* Current projected Kirklees average lifestyle emissions are more than **375 tonnes CO_2** over the next 50 years.
* We each need to get to **below 88 tonnes CO_2** [2] total, ever.

1. Special Report Global Warming of 1.5 °C - Summary for Policymakers https://www.ipcc.ch/sr15/chapter/spm/.
2. Derived from Carbon budgets given in C.1.3 https://www.ipcc.ch/sr15/chapter/spm/. Using calculator at https://myinnerplanet.weebly.com/ (from 2016 so some is already used up)

1.5°C Kirklees Average Lifestyle Pathway

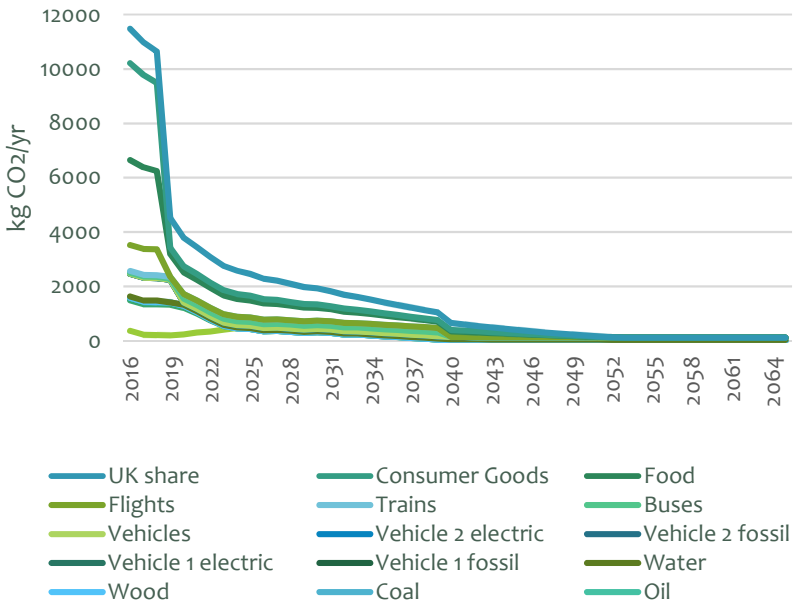
* Our emissions pathway needs to change from

Current Pathway



to

1.5°C Pathway



1.5°C Kirklees Average Lifestyle

Stuff

Stuff

- **0.3 °C** Cooler by changing spending from
  - **£7000 to £2000** per year
  - Average spending habits to carbon conscious
- **0.3 °C** Cooler by changing from
  - 3 portions per week red meat to **no red meat**
  - 1 portion per day to **1 per week of poultry, pork & fish**
  - 2 portions per day to **3 per week eggs & dairy**
  - Average to mostly **locally grown, organic, unprocessed** food
  - Average waste to **very little waste** and **all composted**
- Make spending and diet changes **immediately** [1]

0.7 °C cooler

1. From https://myinnerplanet.weebly.com/ calculations

1.5°C Kirklees Average Lifestyle
Travel

Travel

* **0.2 °C** cooler by changing flights from 4 hours to none immediately
* **0.2 °C** cooler by changing car use from 2,000 to 200 miles per year by next year
* Change from 400 to 1,400 miles per year by bus
* Change from 600 to 1600 miles per year by train
* Make changes to land transport by next year [1]

0.4 °C cooler

1. From https://myinnerplanet.weebly.com/ calculations

1.5°C Kirklees Average Lifestyle Home

Household Energy

* Change from £900 on gas and £45 on oil to no gas or oil.
* Install Electric heat pump heating within 5 years and increase electric bill from £625 to £1900 per year
* Or retrofit house to reduce heating requirement down to less than 1/3 of original and use direct electric heating.
* Make household energy changes within 5 years [1].

0.2 °C cooler

1. From https://myinnerplanet.weebly.com/ calculations

1.5°C Kirklees Average Lifestyle
UK Share

* About **1 tonne CO_2** per person per year is emitted in the UK for the health service, schools, social services, the armed forces and so on [1].
* You have no direct control over this amount, which is generated on your behalf but you can work to make public services and infrastructure zero carbon.
* If you spend **16 hours per week working towards a zero emissions UK**, we estimate (roughly) that will lower emissions by 0.1 °C if everyone in the UK did the same.

0.1 °C cooler

1. The UK government has committed to reducing emissions to zero by 2050. Although they are currently falling behind on this: https://www.businessgreen.com/bg/news/2435676/government-admits-shortfall-for-meeting-fourth-carbon-budget-has-worsened
2. From https://myinnerplanet.weebly.com/ calculations – assuming if everyone in the UK worked 40 hours per week to reach zero carbon, we'd get there within 5 years.

1.5°C Kirklees Average Lifestyle Conclusions

* Lifestyle changes to meet 1.5 °C are possible but are **extreme** and need to happen mostly **immediately** and for major home energy improvements, within the **next 5 years.**
* **Food and consumer goods** are the biggest contributors to current emissions and have the biggest potential reductions. These areas are usually ignored in carbon accounting.
* Lifestyle changes alone will not be enough to meet 1.5°C. There needs to be **major UK policy change** above and beyond what has already been committed to.

1.5°C is possible