Climate Change Analysis

Ireland versus Great Britain: A comparison of CO_2 Emissions

Project Aims:

The overall aim of our project is to find out which of the countries, Ireland or Great Britain, produces the most CO2 and therefore makes a greater contribution to global warming and climate change.

The second aim of our project is to compare the amount of CO2 produced , both both countries in each of the four following sectors:

- *Agriculture*
- *Industry*
- *Services*
- *Household*

We want to determine which country produces the most CO2 in each sectors and to find out, which sector therefore makes the greatest contribution to global warming and climate change.

Data Sources & Data Collection:

We used databases from CSO.ie and gov.uk to obtain our CO2 emission data for both countries:.

- *Environmental and Climate database.*
- *https://data.cso.ie/product/CE*
- *https://data.cso.ie/product/EA*
- *https://data.cso.ie/product/ES*
- *https://www.gov.uk/co2/vehicle/*
- *https://www.gov.uk/household.product/*
- *https://www.gov.uk/agriculture/*
- *https://www.gov.uk/transport.services/*

We used data for 2013-2018 (inclusive). The reasoning for choosing to not include data for 2019/2020 is due to differences in level and timings of restrictions imposed due to Covid-19 between both countries.

Data Collection & Analysis:

1. Identified databases & selected data
2. Copied data to spreadsheet and tabulated data
3. Calculated mean & standard deviation values
4. Plotted barcharts
5. Interpreted data and identified trends and patterns

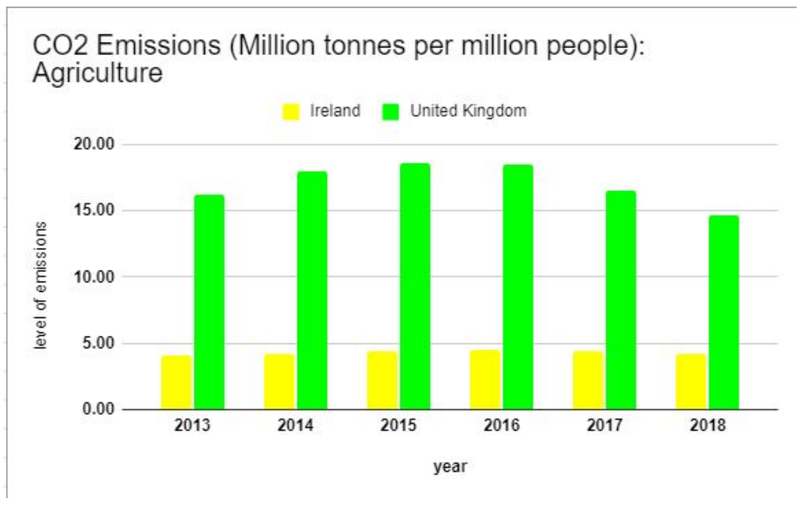
Results:

CO2 Emissions (Million tonnes per million people): Agriculture, Forestry & Fishing						
	2013	2014	2015	2016	2017	2018
Ireland	4.16	4.10	4.11	4.24	4.30	4.29
United Kingdom	10.17	10.10	8.48	8.26	8.58	8.60

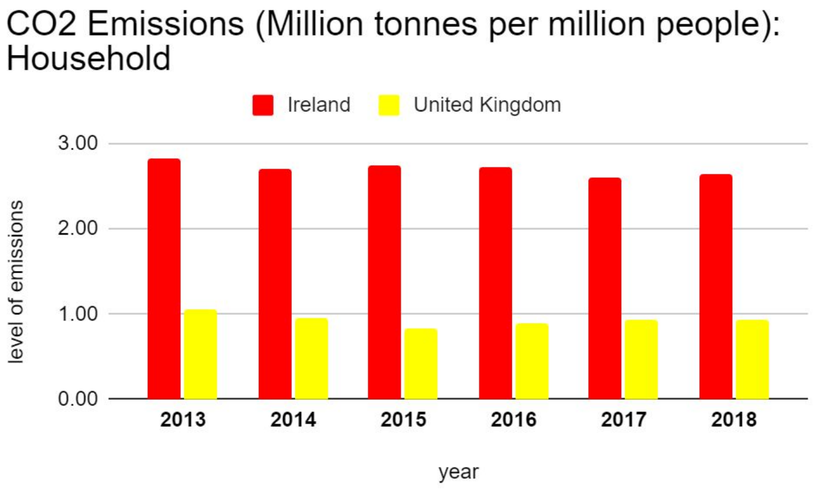
CO2 Emissions (Million tonnes per million people): Industry						
	2013	2014	2015	2016	2017	2018
Ireland	4.07	4.19	4.34	4.53	4.39	4.12
United Kingdom	16.27	18.02	18.65	18.50	16.50	14.63

CO2 Emissions (Million tonnes per million people): services						
	2013	2014	2015	2016	2017	2018
Ireland	3.41	3.39	3.55	4.24	4.71	4.97
United Kingdom	1.64	1.85	1.88	1.89	1.90	1.86

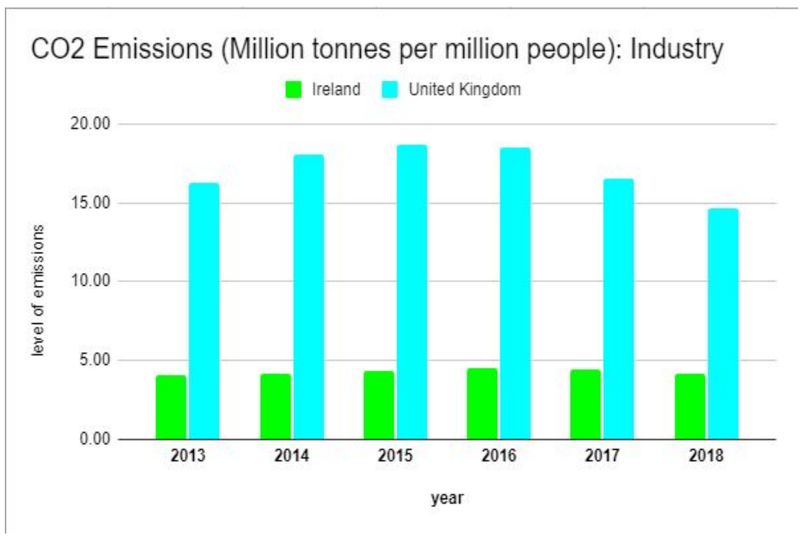
CO2 Emissions (Million tonnes per million people): household						
	2013	2014	2015	2016	2017	2018
Ireland	2.82	2.70	2.74	2.73	2.59	2.65
United Kingdom	1.06	0.96	0.84	0.88	0.93	0.93



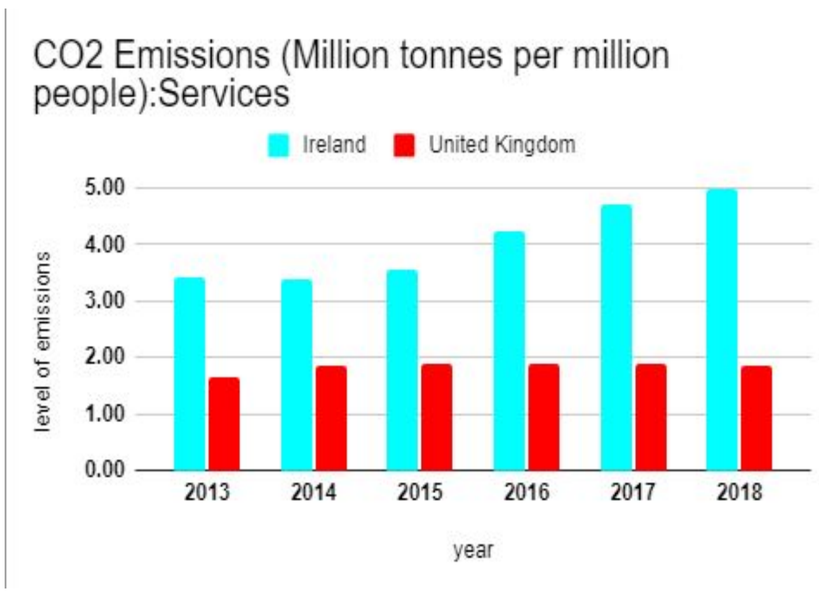
- UK CO2 Emissions (Mean: 9.03, SD: .86)
- IRE CO2 Emissions (Mean:4.18, SD: .07)
- UK produces more CO2 per million people than Ireland
- Irish CO2 emissions more consistent than UK
- UK Agricultural CO2 emission decreased more between 2013 and 2018 than Irish CO2 emissions in this sector



- UK CO2 Emissions (Mean: 0.93, SD: 0.07)
- IRE CO2 Emissions (Mean:2.71, SD: 0.08)
- Ireland produces more household CO2 per million people than UK
- Irish CO2 emissions slightly more consistent than UK
- UK household CO2 emission decreased more between 2013 and 2018 than Irish CO2 emissions in this sector.



- UK CO2 Emissions (Mean: 17.10 , SD:1.57)
- IRE CO2 Emissions (Mean:4.27, SD: 0.18)
- The UK produces more CO2 per million people than Ireland.
- UK emissions in this sector more variable in Ireland.
- The UK emissions increased in 2013 and reached the maximum in 2015 and began to decrease through years 2016-2018.



- UK CO2 Emissions (Mean:1.84, SD: 0.10)
- IRE CO2 Emissions (Mean: 4.04, SD: 0.69)
- Through our data analysis we have discovered the Transport and services is by far the largest source of energy related CO2 emissions in Ireland. And in the year 2018, was responsible for 40%. As you can see on the graph it increases in an ascending order a lot over the years
- The UK remains consistent after a slight increase in 2013.

Conclusions:

- Ireland produces more CO2 per million people than the UK in the household and services sectors.
- The UK produces more CO2 than Ireland in the agricultural, forestry and fishing and industry sectors.
- In the agricultural ,forestry & fishing sector, UK CO2 emissions have decreased since 2013 whereas Irish emissions have increased overall in this sector.
- Ireland industrial Co2 emissions increased from 2013 but have decreased since 2016.UK emissions in this sector show a similar trend but have decreased since 2015.
- CO2 emissions for the services sector have increased overall for both countries since 2013.
- Household CO2 emissions have also shown an overall decrease in both countries since 2013.
- The sector that contributes most to CO2 emissions in Ireland and the UK is industry whereas the household sector contributes least to CO2 emissions in both countries.
- On average, the UK produces more CO2 per million people than Ireland and contributes more to climate change and global warming