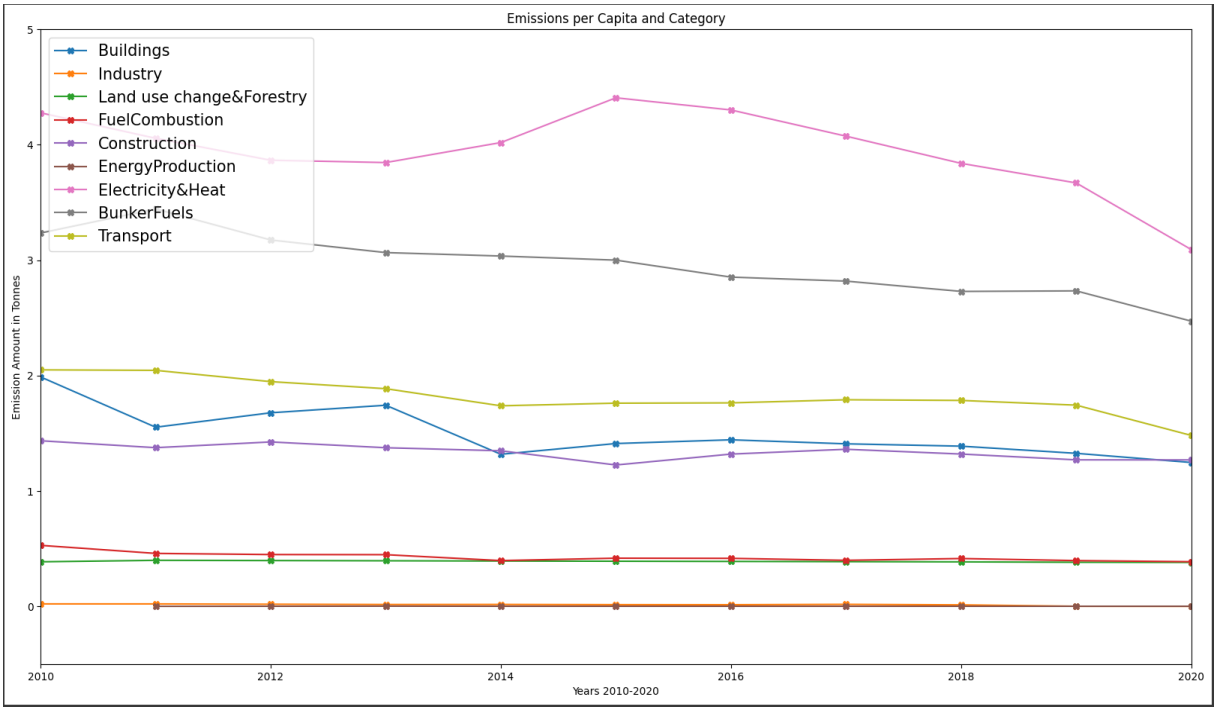
What is the biggest predictor of a large CO2 output per capita of a country.

I'm using The Netherlands for my country in this question from 2010-2020

The biggest predictor after viewing and manipulating data (results shown in graph) for a large CO2 output per capita of a country is: **Heat and Electricity.**



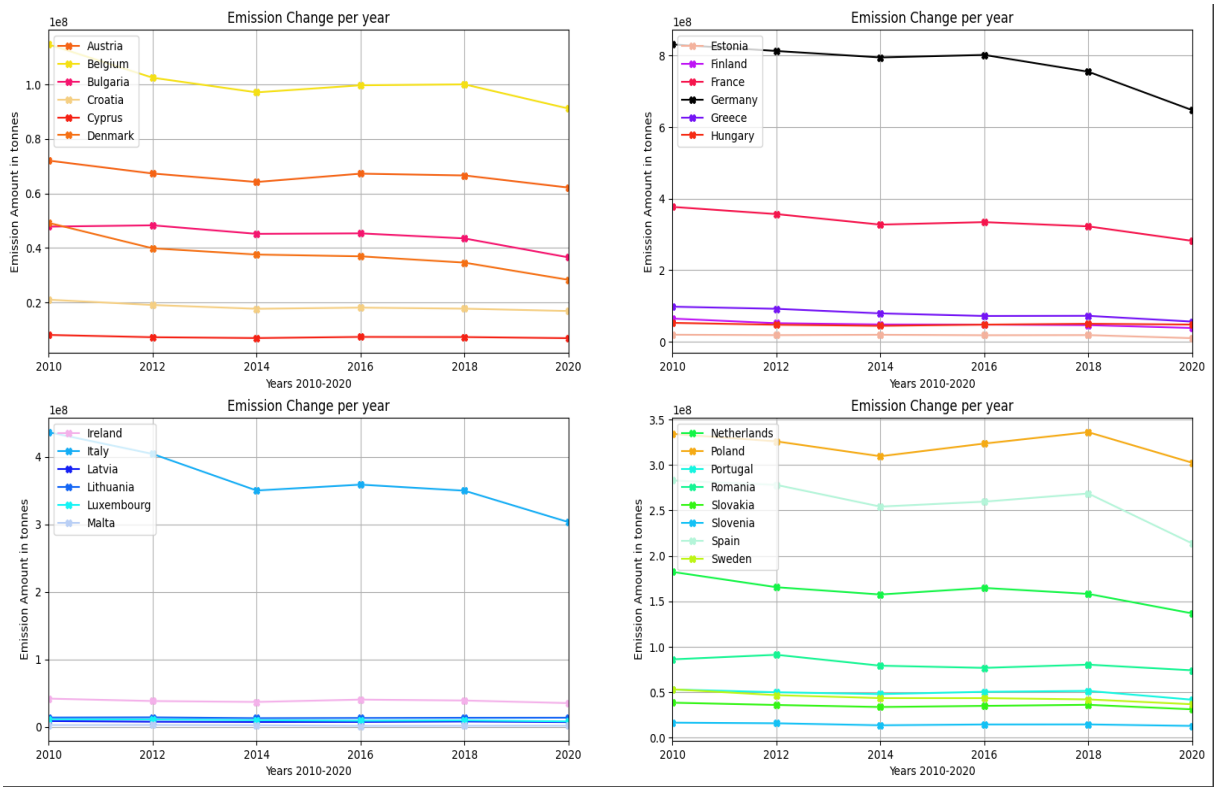
Below are the numbers in tonnes of CO2 per capita per sector of 2020.

Buildings	:	1.246375
Industry	:	0.000000
Land use change & Forestry	:	0.380853
Fuel Combustion	:	0.386588
Construction	:	1.268744
Energy Production	:	0.000574
Electricity & Heat	:	3.091560
Bunker Fuels	:	2.470954
Transport	:	1.480966

Which countries are making the biggest strides in decreasing CO2 output .

For this question I chose to use the EU as my list of countries from 2010 – 2020

After looking at the graphs and calculating the values the countries making the biggest strides in decreasing CO2 output are **Germany** and **Italy**



Both countries that have the biggest decrease in CO2 emissions:

Germany going from:

831129600 tonnes -> 647252300 tonnes which is a decrease of 183877300 tonnes of CO2 Emissions

Italy going from:

436534300 tonnes -> 303281280 tonnes which is a decrease of 133253020 tonnes of CO2 Emissions

Which non-fossil fuel energy technology will have the best price in the future.

After inputting all the data and manipulating it, using linear regression I've come to the conclusion that **Solar photovoltaic energy** will likely have the best price per kWh in the future.

The prices of all non-fossil fuels are:

- **Bioenergy - $0.070 per kWh**
- **Geothermal - $0.071 per kWh**
- **Off-Shore Wind - $0.085 per kWh**
- **On-Shore Wind - $0.041 per kWh**
- **Solar Photovoltaic - $0.004 per kWh**
- **Concentrated Solar Power - $0.162 per kWh**
- **Hydropower - $0.050 per kWh**

Hydropower and Geothermal energy will most likely never be the cheapest sources because they have an increasing slope on the linear regression meaning they will increase in cost.

Source Material:

Q1 = What is the biggest predictor of a large CO2 output per capita of a country

https://colab.research.google.com/drive/11hCz8NM7vA-3ByBgyO6d1P7MX1_tMOJv?usp=sharing

Q2 = Which countries are making the biggest strides in decreasing CO2 output .

https://colab.research.google.com/drive/1eIlG0BCUMG52THHezFNiTAN_xMKPrAJe?usp=sharing

Q3 = Which non-fossil fuel energy technology will have the best price in the future.

https://colab.research.google.com/drive/1IMUsZ9KeJEXK1A-Aep70wLrBWB09NqHk?usp=sharing

Everything that is made in these Notebooks comes from:

Source Data: https://ourworldindata.org/data

(I downloaded the data from here, imported this into Github

got the Raw repository links there to use in my Notebooks).

Github: https://github.com/SophyvZ/Emission