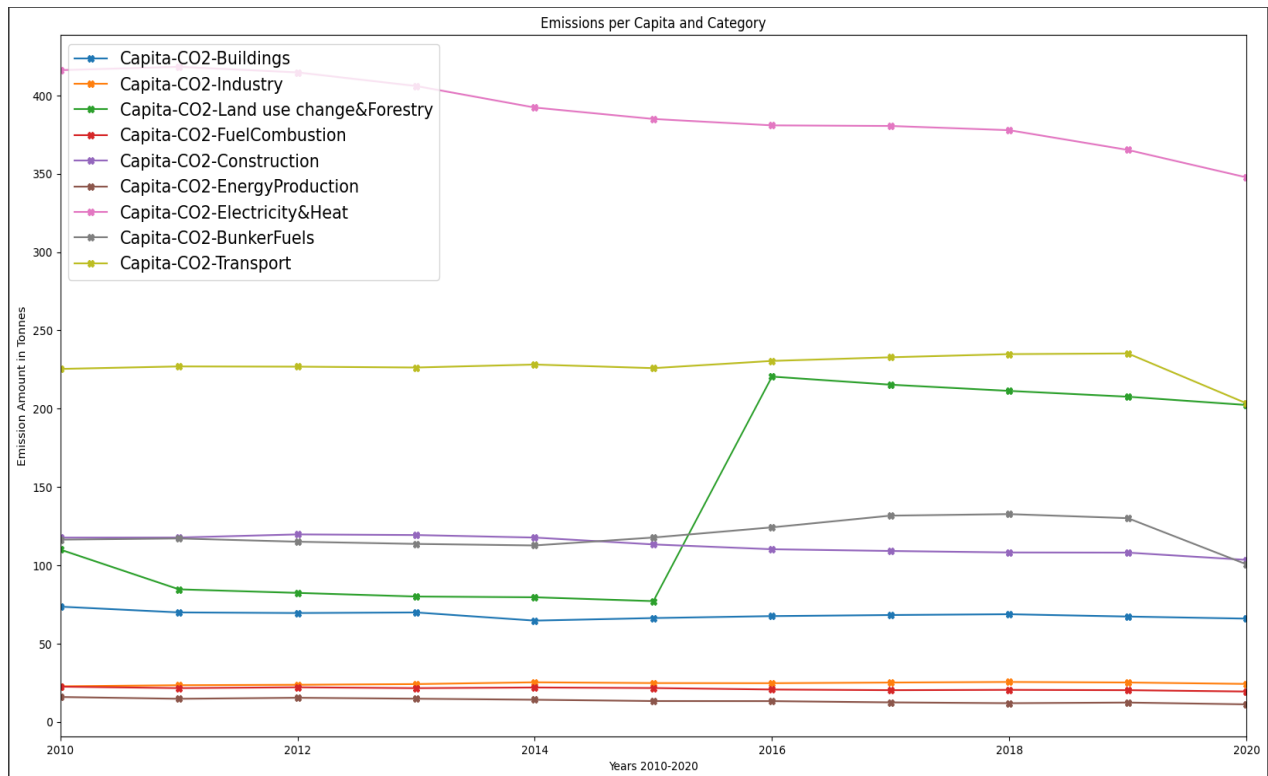# What is the biggest predictor of a large CO2 output per capita of a country.

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


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

Buildings	:	65.947384
Industry	:	24.259225
Land use change & Forestry	:	202.329214
Fuel Combustion	:	19.413346
Construction	:	103.442962
Energy Production	:	11.219815
Electricity & Heat	:	***347.657316***
Bunker Fuels	:	100.633550
Transport	:	203.409840

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 the following 5: **Germany, Italy, France, Spain, Netherlands** in that order.
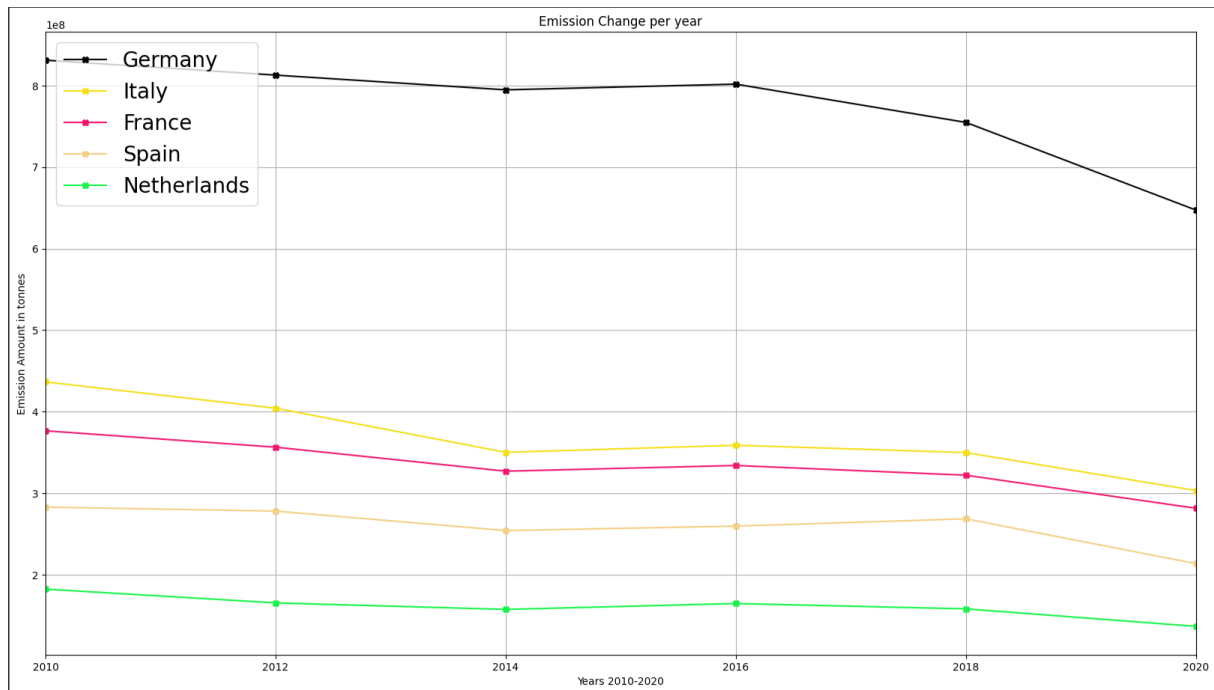
1: Germany going from:
 831129600 tonnes -> 647252300 tonnes which is a decrease of 183877300 tonnes of CO2 Emissions

2: Italy going from:
436534300 tonnes -> 303281280 tonnes which is a decrease of 133253020 tonnes of CO2 Emissions

3: France going from:
376563900 tonnes -> 281539040 tonnes which is a decrease of 95024860 tonnes of CO2 Emissions

4: Spain going from:
282937100 tonnes -> 213625420 tonnes which is a decrease of 69311680 tonnes of CO2 Emissions

5: Netherlands going from:
182358960 tonnes -> 16433888 tonnes which is a decrease of 45674340 tonness of CO2 Emissions

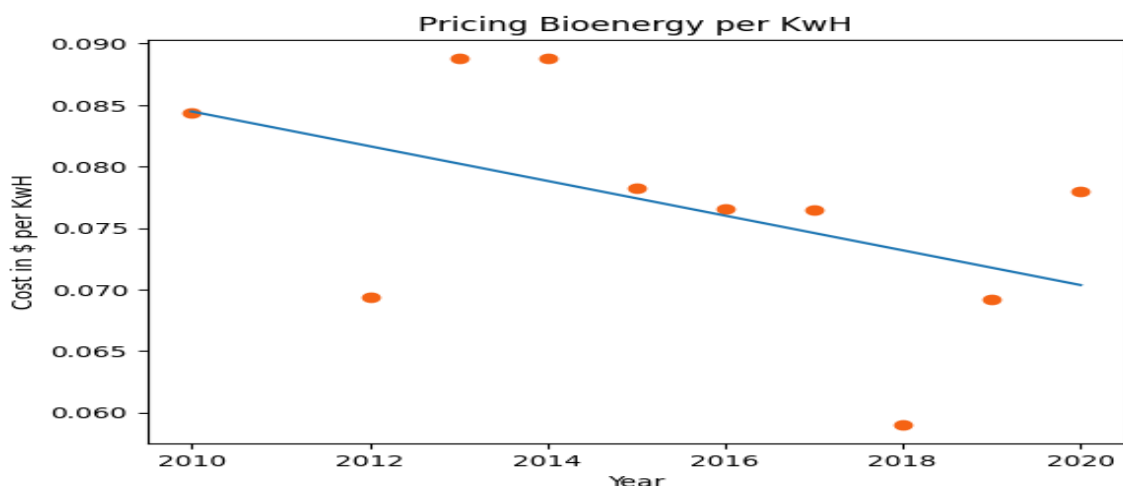# Which non-fossil fuel energy technology will have the best price in the future.

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.
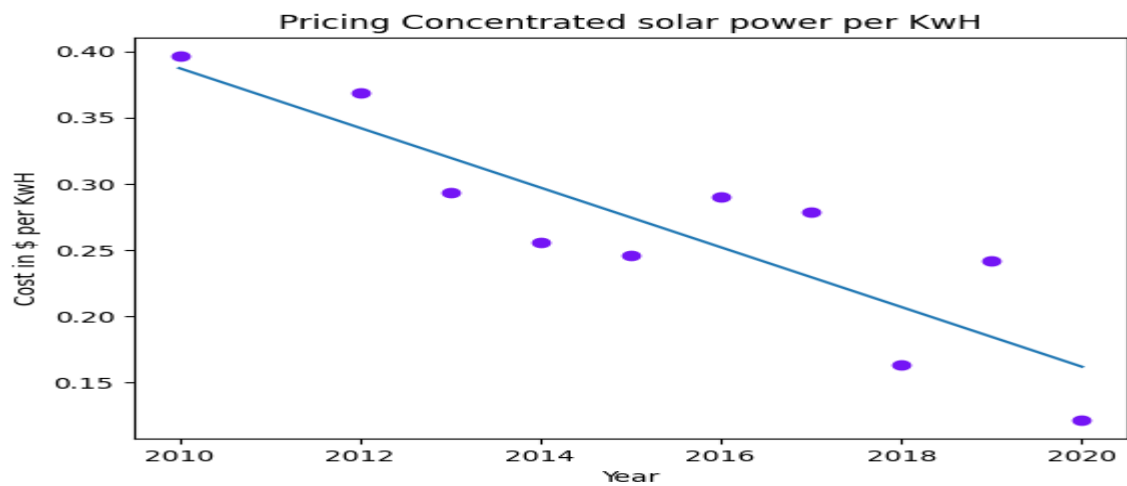
The prices of all non-fossil fuels are:
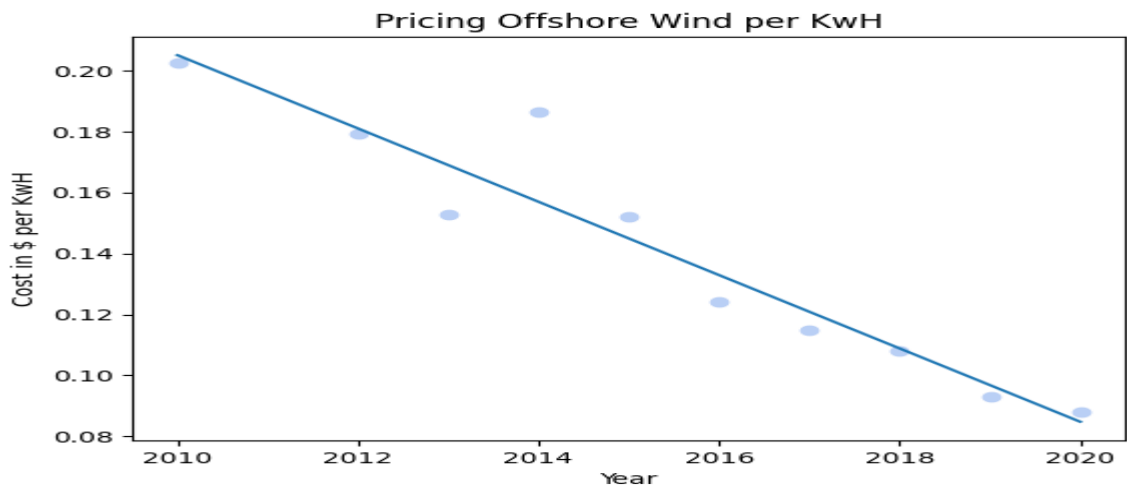
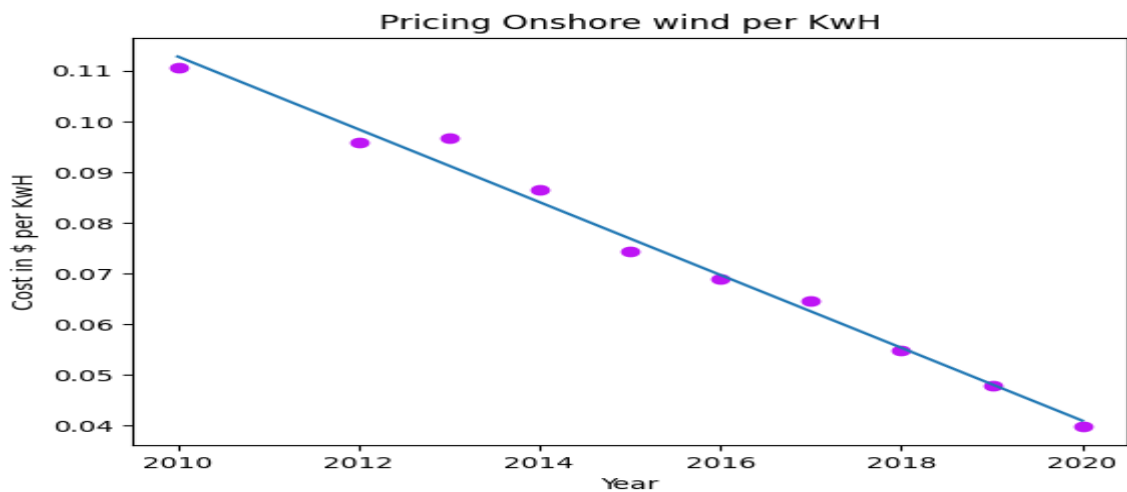- **Solar Photovoltaic - $0.004 per kWh:**
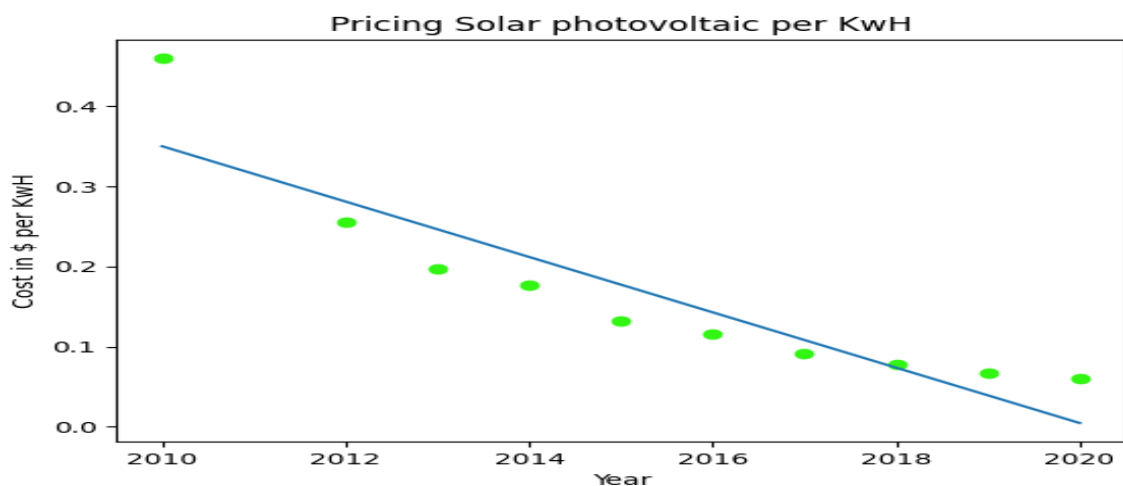
- **Bioenergy - $0.070 per kWh:**
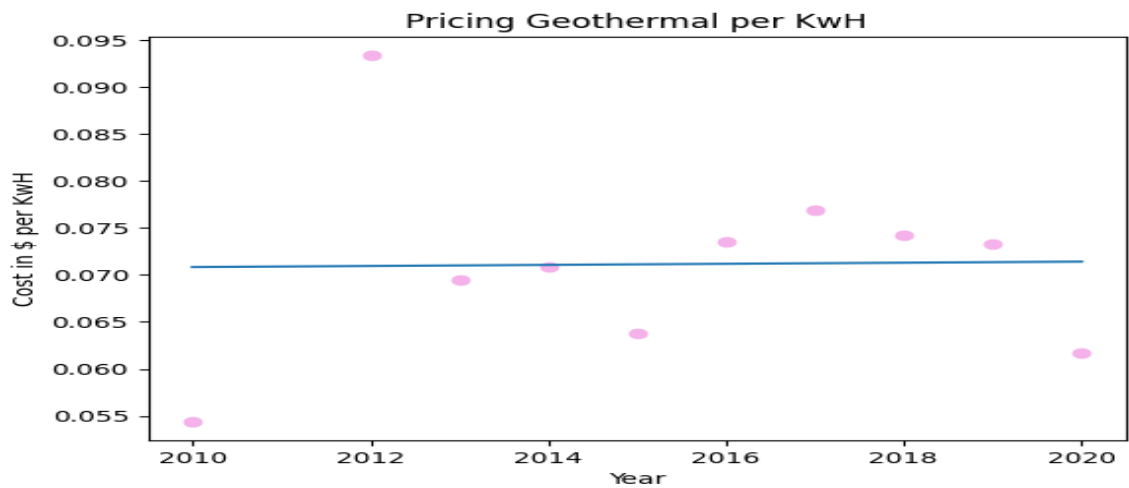
- **Concentrated Solar Power - $0.162 per kWh:**

- **Off-Shore Wind - $0.085 per kWh:**

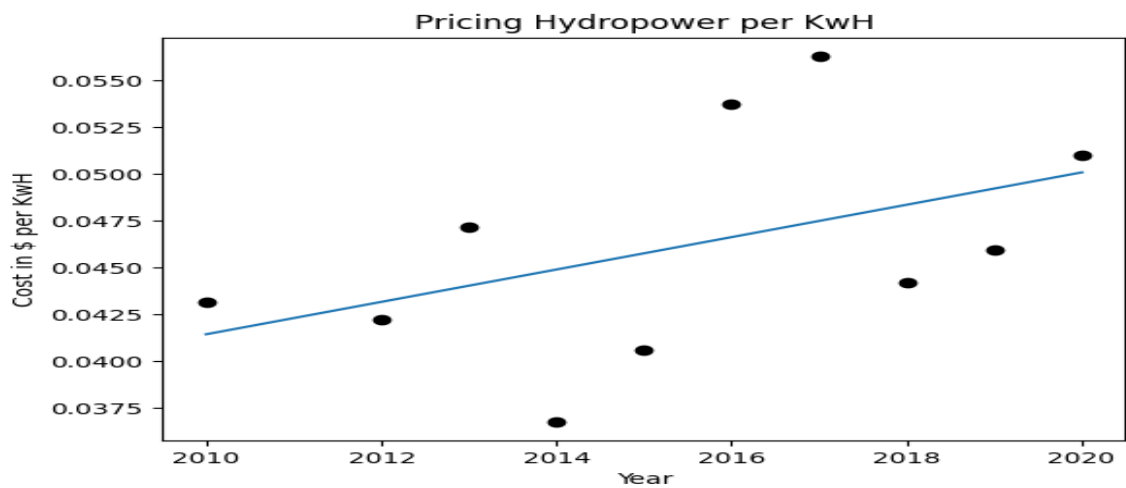- **On-Shore Wind - $0.041 per kWh:**

- **Geothermal - $0.071 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 (shown on the graph) on the linear regression meaning they will likely increase in cost.

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