Team Enterpernures

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Exploratory Data Analysis (CO2 Emissions from Different Energy Sectors)

Data Source: Food and Agriculture Organisation of the UN

Introduction

In recent years climate change has gained significant momentum. The one key sources of CO2 emissions has been from energy usage. In this project the CO2 emissions fm specific energy sectors will be investigated.

About the Dataset:

Provided by the Food and Agriculture Organisation of the UN, the dataset used in this EDA has records
covering approx. 50 years from 1970 to 2019. It holds a breakdown of CO2 emissions for a number of
energy sectors from a myriad of countries. As it will become apparent, CO2 emissions from energy
industries fluctuates over time and country to country.

Methodolgy:

- First of all whole data was explored. Redundent Data was removed to simplify the analysis. There were
 no missing values however distribution of data is not evenly distributed due to multiple reasons i.e
 energy usage fluctuations in differents seasons and different parts of the globe, similarly there is huge
 difference in energy usage of different sectors.
- We Divide our EDA into two parts.
 - Part 1 is EDA on whole data
 - Part 2 is EDA on Subcontinent Countries only

Part-1: EDA on Whole DataSet

Step-1: Importing neccesary Libraries

importing libraries

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

Step-2: Importing Dataset

```
df = pd.read_csv('energy_use_data_11-29-2021.csv')
df.head().T
```

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	0	1	2	3	4
Domain Code	GN	GN	GN	GN	GN
Domain	Energy Use				
Area Code (ISO3)	AFG	AFG	AFG	AFG	AFG
Area	Afghanistan	Afghanistan	Afghanistan	Afghanistan	Afghanistan
Element Code	7273	7273	7273	7273	7273
Element	Emissions (CO2)	Emissions (CO2)	Emissions (CO2)	Emissions (CO2)	Emissions (CO2)
Item Code	6801	6801	6801	6801	6801
Item	Gas-Diesel oil				
Year Code	1990	1991	1992	1993	1994
Year	1990	1991	1992	1993	1994
Unit	kilotonnes	kilotonnes	kilotonnes	kilotonnes	kilotonnes
Value	231.4918	188.5317	47.9904	38.6116	31.4465
Flag	F	F	F	F	F
Flag Description	FAO estimate				

Step-3: Data Shape

Shape function tells us number of Observations and columns. In this dataset we have 14 columns and 46131 records or obervations

```
# Shape of Dataset
row, col=df.shape
print('Total number of observations/rows/entries:', row)
print('Total number of columns:', col)
```

```
Total number of observations/rows/entries: 46131
Total number of columns: 14
```

Extracting Basic Dataset Information:

- Our dataset contain
 - o RangeIndex: 0 to 46131
 - o Total Columns: 14
 - No of Non-Null Values: Zero
 - Dtypes: float64(1), int64(4), object(9)
 - o memory usage: 4.9+ MB

```
df.info()
```

Output:

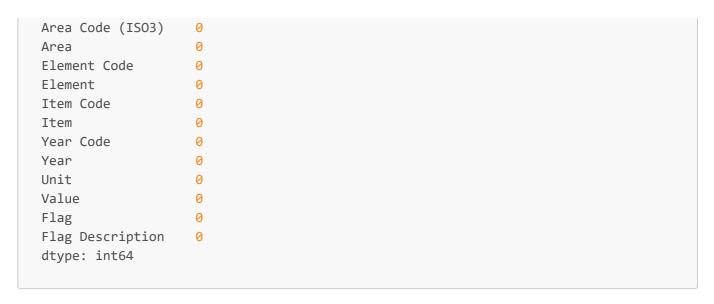
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 46131 entries, 0 to 46130
Data columns (total 14 columns):
             Non-Null Count Dtype
# Column
                   -----
                 46131 non-null object
46131 non-null object
Domain Code
1 Domain
2 Area Code (ISO3) 46131 non-null object
3 Area
                   46131 non-null object
4 Element Code 46131 non-null int64
5 Element 46131 non-null object
6 Item Code
                  46131 non-null int64
7 Item
                   46131 non-null object
8 Year Code 46131 non-null int64
9 Year
                   46131 non-null int64
10 Unit
                   46131 non-null object
11 Value
                   46131 non-null float64
12 Flag
                    46131 non-null object
13 Flag Description 46131 non-null object
dtypes: float64(1), int64(4), object(9)
memory usage: 4.9+ MB
```

Step-5: Finding Missing Values

DataSet is cleaned as far as missing values are concerned

```
df.isnull().sum()
```

```
Domain Code 0
Domain 0
```



Step-6: Summary Statistics

```
df.describe()
```

Output:

	Year	Value
count	46131	46131
mean	1998.988814	863.132722
std	13.111035	5274.730687
min	1970	0
25%	1990	3.37075
50%	2000	21.4899
75%	2010	165.7289
max	2019	197674.5593

Step-7: Value Counts

```
df.Item.value_counts()
```

```
Motor Gasoline 8756
Gas-Diesel oil 8160
Liquefied petroleum gas (LPG) 7431
Fuel oil 6418
```

```
Electricity 6061
Coal 4304
Natural gas (including LNG) 3787
Gas-diesel oils used in fisheries 747
Fuel oil used in fisheries 467
Name: Item, dtype: int64
```

unique values in each column

```
df.nunique
```

Output:

```
```python
Domain Code
 1
Domain
 1
Area Code (ISO3)
 229
 229
Area
Element Code
 1
Element
 1
Item Code
 9
Item
 9
Year Code
 50
Year
 50
Unit
 1
Value
 34024
 3
Flag
 3
Flag Description
dtype: int64
```

# Step-8: Feature Selection

• "Domain Code", "Domain", "Element Code" and "Element" contain only one variable. Similarly "YearCode", "Area Code" and "Flag" columns does not provide any useful insights. Therefore these can be removed from the dataset with no loss of understanding/ distorting the overall dataset.

#### Clean data - exclude unnecessary data improved readability

```
df_clean = pd.read_csv("energy_use_data_11-29-2021.csv")
x = ["Area Code (ISO3)", "Domain Code", "Domain", "Element Code", "Element", "Year
Code", "Flag"]
df_clean.drop(x, inplace = True, axis =1)
df_clean.head()
```

```
Item Code
 Item
 Year
 Unit
 Value
 Flag Description
 Afghanistan 6801 Gas-Diesel oil 1990
 kilotonnes 231.4918
 FA0
estimate
 kilotonnes 188.5317
 Afghanistan 6801
 Gas-Diesel oil 1991
1
 FAO
estimate
2
 Afghanistan 6801
 Gas-Diesel oil 1992
 kilotonnes 47.9904 FAO estimate
 Afghanistan 6801
 Gas-Diesel oil 1993
 kilotonnes 38.6116 FAO estimate
 Afghanistan 6801
 Gas-Diesel oil 1994
 kilotonnes 31.4465 FAO estimate
```

# Step-9: Distribution of Data

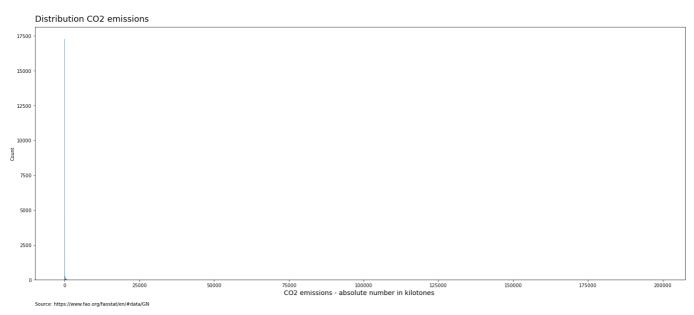
• The data is extremely broadly distributed with many values in the range of 0 to 25000 with a strong skew to the right.

#### Overall Data Distribution

```
plt.figure(figsize = (25,10))
sns.histplot(x = "Value", data = df_clean)

#customisation
plt.xlabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.title("Distribution CO2 emissions", fontsize = 18, loc='left', y=1.01)
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords = 'axes fraction')

plt.show()
```



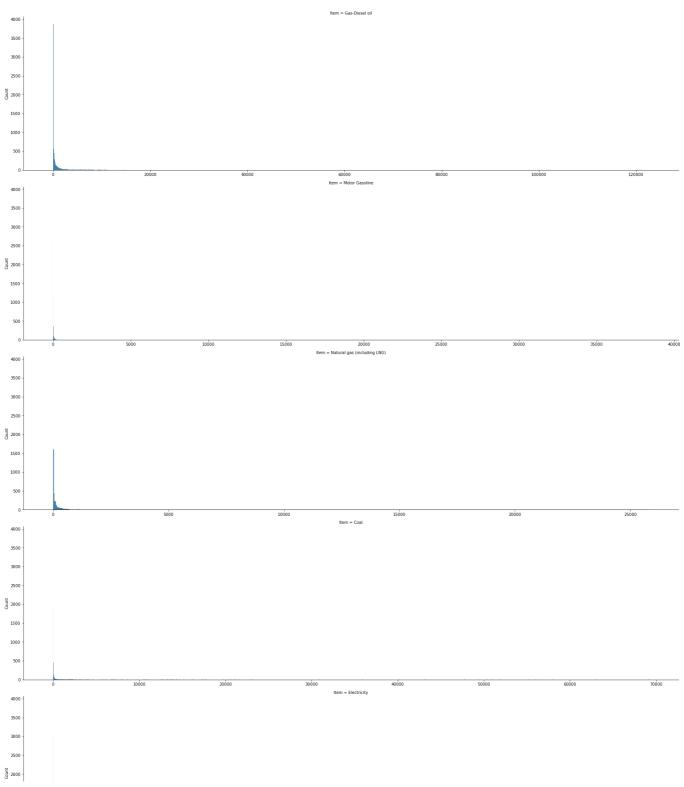
• This distribution remains relatively unchanged when each energy industry is examined individually.

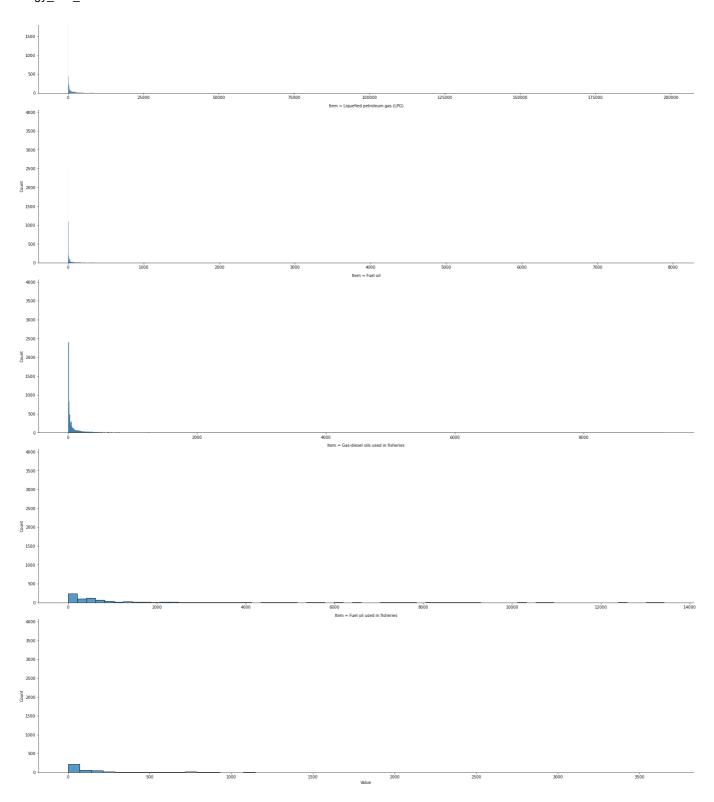
#### Data Distribution by Energy Sector

```
g= sns.FacetGrid(data = df_clean, col = "Item", col_wrap = 1,margin_titles= False,
height = 6,aspect = 4, sharex=False)
g.map(sns.histplot, "Value",)

#customisation
g.fig.suptitle('Distribution of CO2 emissions separated by energy ',fontsize = 18,
horizontalalignment='right', y = 1.03)
plt.show()
```

Distribution of CO2 emissions separated by energy



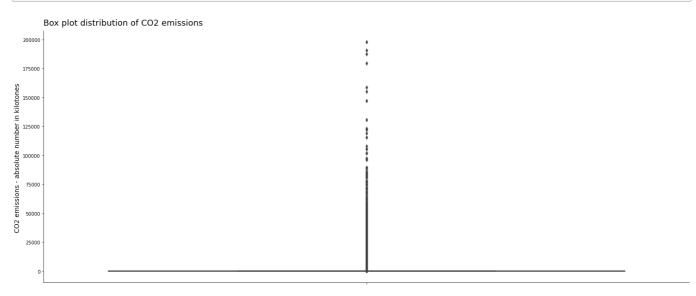


• In other words, the data contains a high number of mathematical outliers as further emphasised by the following boxplots.

```
Boxplot of CO2 emissions
plt.figure(figsize = (25,10))
sns.boxplot(y = "Value", data = df_clean)

#customisation
sns.despine(top = True, right = True, left = False, bottom = False)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.title("Box plot distribution of CO2 emissions", fontsize = 18, loc='left',
```

```
y=1.01)
plt.show()
```

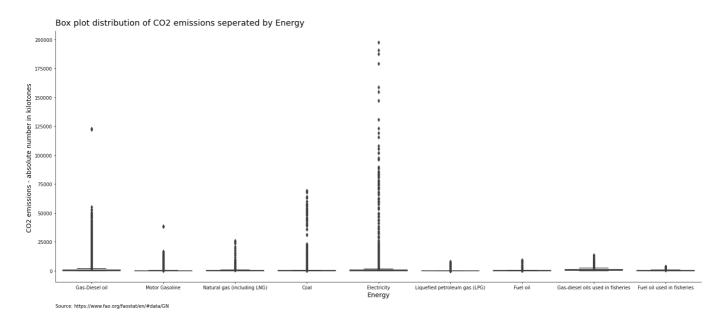


# Boxplot of CO2 emissions by Energy Sector

```
plt.figure(figsize = (25,10))
sns.boxplot(data= df_clean, x= "Item", y = "Value")

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
sns.despine(top = True, right = True, left = False, bottom = False)
plt.title("Box plot distribution of CO2 emissions seperated by Energy", fontsize =
18, loc='left', y=1.01)

plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.xlabel("Energy", fontsize=14)
```



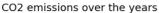
Step-10: Visualization of Data

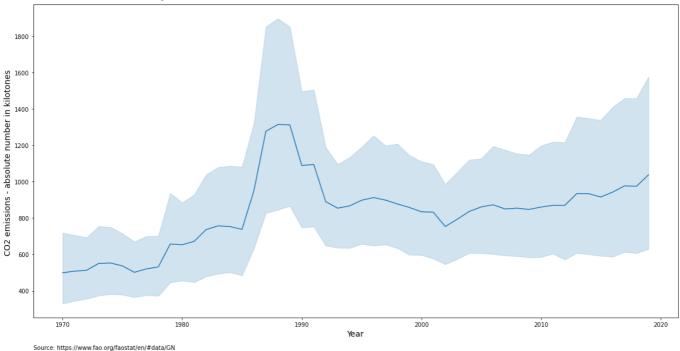
# Visualization of CO2 emissions over the years

#### visualization of CO2 emissions over the years

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_clean)

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Energy usage over the years", fontsize = 18, loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```



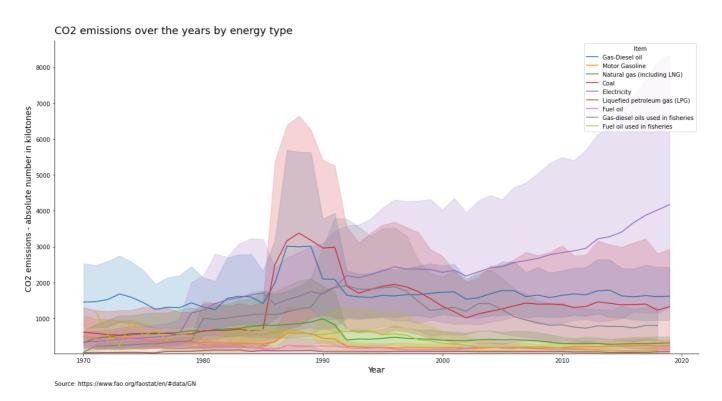


## visualization of CO2 emissions over the years

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_clean, hue = "Item")

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.ylim(10,)
sns.despine(top = True, right = True, left = False, bottom = False)
plt.title("C02 emissions over the years by energy type", fontsize = 18,
loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("C02 emissions - absolute number in kilotones ", fontsize=14)

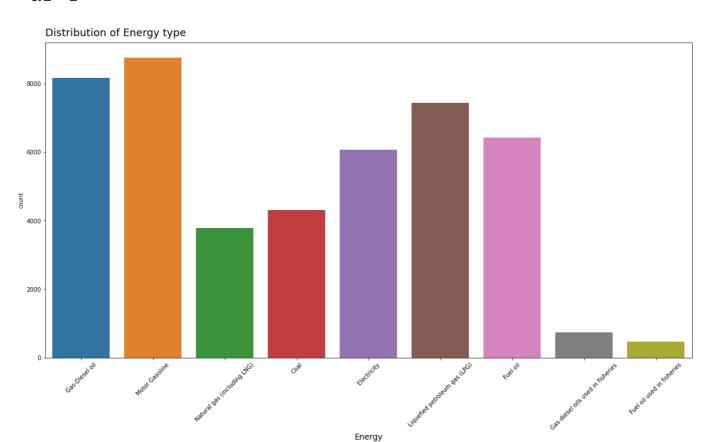
plt.show()
```



# Distribution of Energy type

```
plt.figure(figsize = (20,10))
sns.countplot(x = "Item", data = df_clean)

#customisation
plt.xlabel("Energy", fontsize=14)
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.3), xycoords
='axes fraction')
plt.title("Distribution of Energy type", fontsize = 18, loc='left', y=1.01)
plt.xticks(rotation=45)
plt.show()
```



# Top 10 Countries with maximum CO2 Emissions

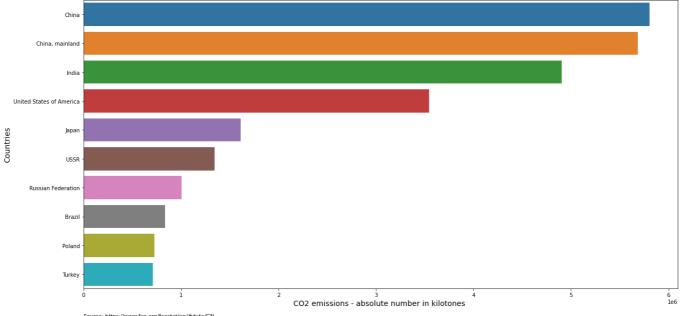
Source: https://www.fao.org/faostat/en/#data/GN

```
s = df_clean.groupby(["Area"]).sum().sort_values(by="Value",
ascending=False).head(10)

plt.figure(figsize = (20,10))
sns.barplot(y=s.index,x='Value',data=s)

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Top 10 Countries with maximum CO2 Emissions", fontsize = 18,
loc='left', y=1.01)
plt.ylabel("Countries", fontsize=14)
plt.xlabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```





• This graph show that to 10 countries which are emitting highest value of value of Carbon. China, China mainland, and India are the top country.

```
df_clean1 = df_clean.drop(["Year",'Item Code'], axis=1)
s1 = df_clean1.groupby(["Area"]).sum().sort_values(by="Value",
ascending=False).head(10)
s1.head(10)
```

#### Value

- Area
- China 5.804601e+06
- China, mainland 5.686551e+06
- India 4.906070e+06
- United States of America 3.544757e+06
- Japan 1.613227e+06
- USSR 1.342590e+06
- Russian Federation 1.006218e+06
- Brazil 8.381262e+05
- Poland 7.275216e+05
- Turkey 7.107471e+05

```
value_count1 = df_sub.groupby("Item")["Value"].sum()
value_count1
```

• Item

- Coal 8.465990e+05
- Electricity 3.542233e+06
- Fuel oil 7.315993e+04
- Gas-Diesel oil 6.778946e+05
- Liquefied petroleum gas (LPG) 3.354174e+03
- Motor Gasoline 1.541632e+03
- Natural gas (including LNG) 4.146732e+04

# Part-2: EDA on Subcontinent

CO2 Emissions from Subcontinent In this section subcontinent countries will be examined. the list of countries are as follows:

- Bangladesh,
- India,
- Pakistan

# Feature Selection and Data Insights

# Selecting Subcontinents countries

```
df_sub = df_clean[df_clean["Area"].isin(["India", "Pakistan", 'Bangladesh'])]
df_sub.head()
```

	Area	ltem Code	ltem	Year	Unit	Value	Flag Description
2915	Bangladesh	6801	Gas- Diesel oil	1972	kilotonnes	31.8630	International reliable sources
2916	Bangladesh	6801	Gas- Diesel oil	1973	kilotonnes	38.2356	International reliable sources
2917	Bangladesh	6801	Gas- Diesel oil	1974	kilotonnes	149.7561	International reliable sources
2918	Bangladesh	6801	Gas- Diesel oil	1975	kilotonnes	168.8739	International reliable sources
2919	Bangladesh	6801	Gas- Diesel oil	1976	kilotonnes	178.4328	International reliable sources

# Shape of selected subcontinents countries dataframe

df\_sub.shape

#### **OutPut:**

```
(1019, 7)
```

Summary Statistics of selected subcontinents countries dataframe

```
df_sub.describe()
```

## **OutPut:**

	Item Code	Year	Value
count	1019.000000	1019.000000	1019.000000
mean	6803.989205	1995.056919	5089.548264
std	3.036271	14.077065	19611.971126
min	6800.000000	1970.000000	0.052800
25%	6801.000000	1983.000000	7.789800
50%	6804.000000	1995.000000	185.034800
75%	6807.000000	2007.000000	817.537500
max	6809.000000	2019.000000	197674.559300

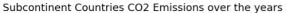
Visualizing Subcontinents Countries Role in CO2 emissions

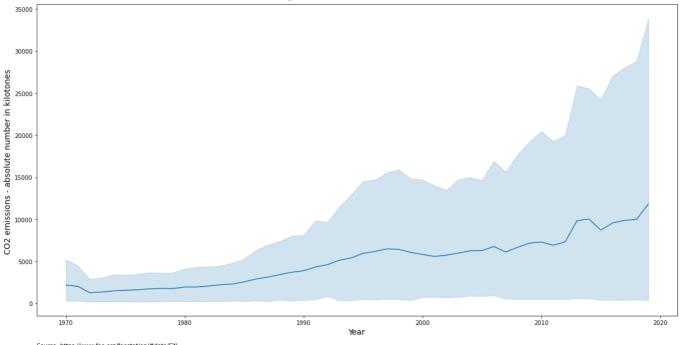
#### Subcontinent Countries (Combine) CO2 Emissions usage over the years

Energy usage by subcontinents countries

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_sub)

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Subcontinent Countries CO2 Emissions over the years", fontsize = 18,
loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```





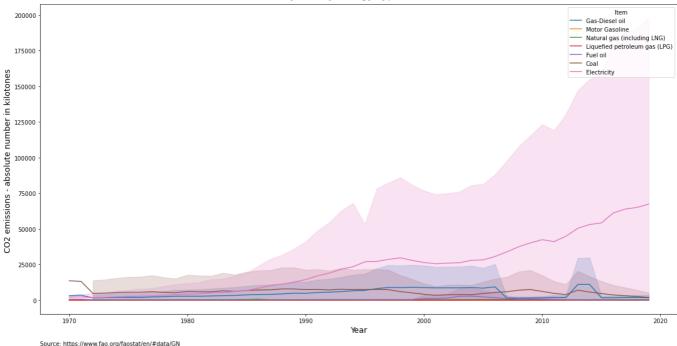
# Subcontinent Countries (Combine) CO2 Emissions over the years by Energy Type

# Energy usage by subcontinents countries

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_sub, hue = "Item")

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Subcontinent Countries CO2 Emissions over the years by Energy Type",
fontsize = 18, loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```





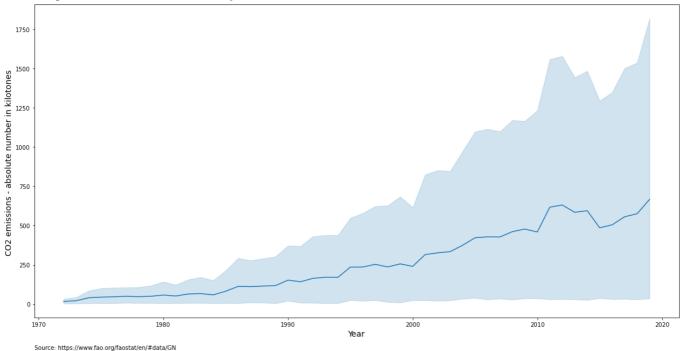
#### **Bangladesh**

## Contruct visualisation for Bangladesh CO2 Emissions over the years

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_sub[df_sub["Area"]=="Bangladesh"])

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Bangladesh: CO2 Emissions over the years", fontsize = 18, loc='left',
y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```

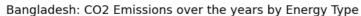


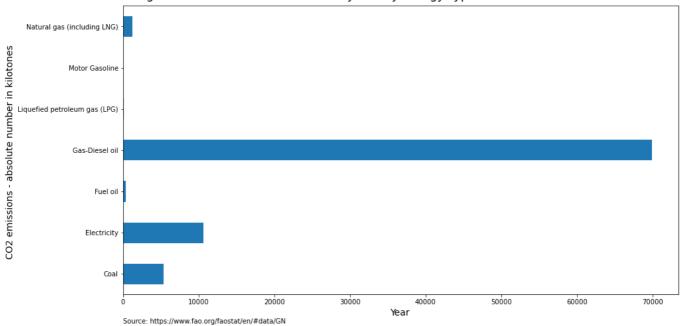


# Groupby Bangladesh and Item and plot the mean in horizontal bar chart

```
df_sub[df_sub["Area"]=="Bangladesh"].groupby("Item")
["Value"].sum().plot(kind="barh", figsize=(15,8))

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Bangladesh: CO2 Emissions over the years by Energy Type", fontsize =
18, loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```





df\_sub[df\_sub["Area"]=="Banglasedh"].groupby("Item")["Value"].sum()

#### **OutPut:**

- Value in Kilotone
- Coal 5370.3701
- Electricity 10654.8759
- Fuel oil 378.0197
- Gas-Diesel oil 69889.1326
- Liquefied petroleum gas (LPG) 123.7708
- Motor Gasoline 35.0041
- Natural gas (including LNG) 1290.6937

#### India

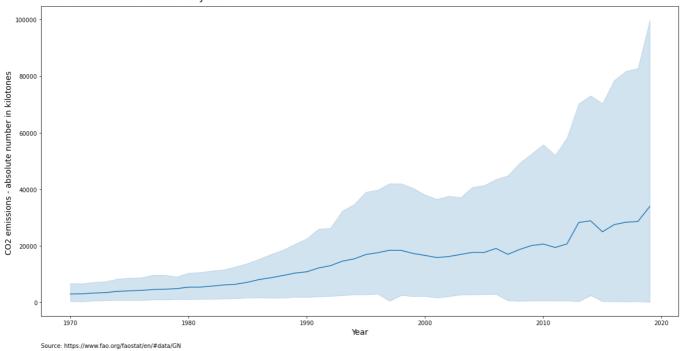
# Contruct visualisation for India CO2 Emissions over the years

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_sub[df_sub["Area"]=="India"])

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("India: CO2 Emissions over the years", fontsize = 18, loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
```

```
plt.show()
```

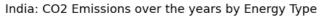


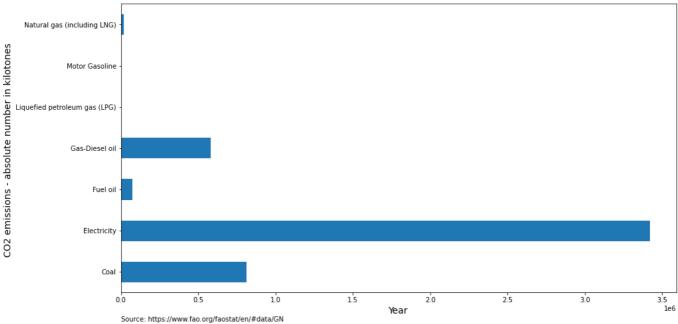


# Groupby India and Item and plot the mean in horizontal bar chart

```
df_sub[df_sub["Area"]=="India"].groupby("Item")["Value"].sum().plot(kind="barh",
 figsize=(15,8))

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("India: CO2 Emissions over the years by Energy Type", fontsize = 18,
 loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```





df\_sub[df\_sub["Area"]=="India"].groupby("Item")["Value"].sum()

#### **OutPut:**

- Value in Kilotone
- Coal 8.133342e+05
- Electricity 3.420779e+06
- Fuel oil 7.242071e+04
- Gas-Diesel oil 5.801133e+05
- Liquefied petroleum gas (LPG) 3.277531e+02
- Motor Gasoline 1.217229e+03
- Natural gas (including LNG) 1.787776e+04

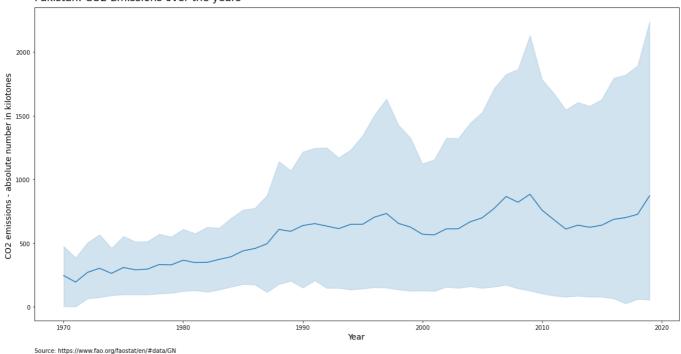
#### **Pakistan**

# Contruct visualisation for Pakistan CO2 Emissions over the years

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_sub[df_sub["Area"]=="Pakistan"])

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Pakistan: CO2 Emissions over the years", fontsize = 18, loc='left',
y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```



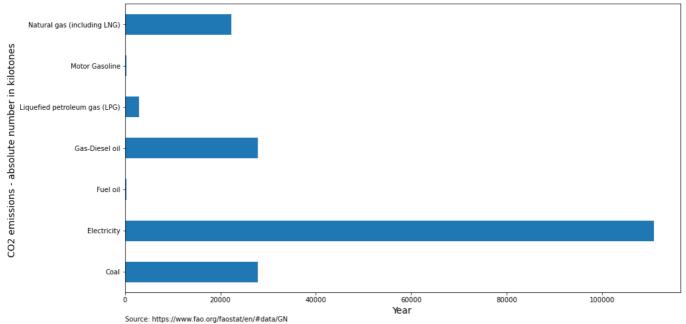


# Groupby Pakistan and Item and plot the mean in horizontal bar chart

```
df_sub[df_sub["Area"]=="Pakistan"].groupby("Item")
["Value"].sum().plot(kind="barh", figsize=(15,8))

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Pakistan: CO2 Emissions over the years by Energy Type", fontsize = 18,
loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```





df\_sub[df\_sub["Area"]=="Pakistan"].groupby("Item")["Value"].sum()

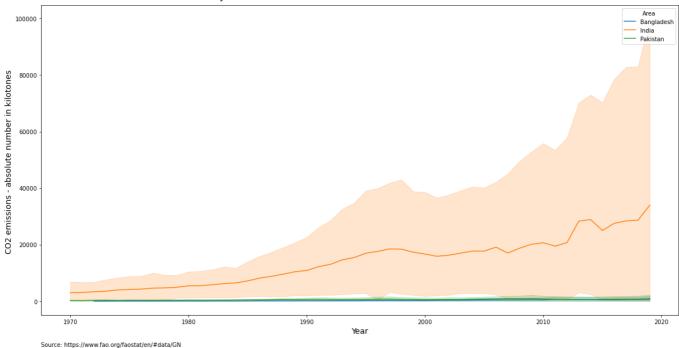
#### **OutPut:**

- Value in Kilotone
- Coal 27894.4824
- Electricity 110799.5409
- Fuel oil 361.2075
- Gas-Diesel oil 27892.1467
- Liquefied petroleum gas (LPG) 2902.6501
- Motor Gasoline 289.3997
- Natural gas (including LNG) 22298.8643

# CO2 Emissions over the years

```
plt.figure(figsize = (20,10))
sns.lineplot(x = "Year", y = "Value", data = df_sub, hue = "Area")
#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Combine: CO2 Emissions over the years", fontsize = 18, loc='left',
y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```



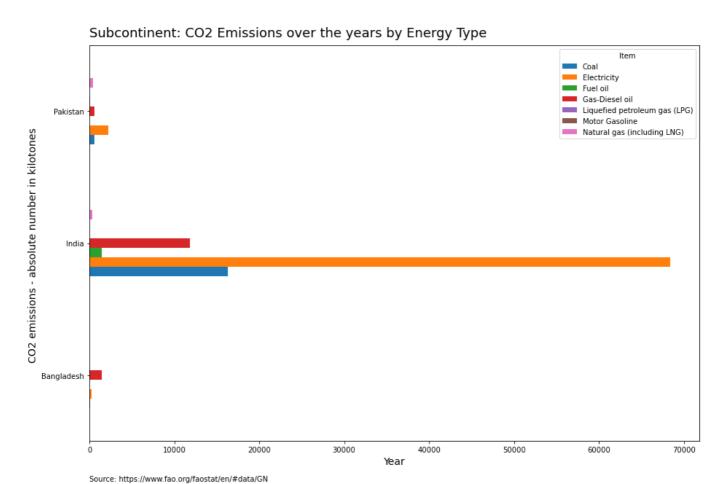


#### **Combine**

## Comparison of CO2 emissions between subcontinents countries

```
df_sub.groupby(['Area', 'Item'])['Value'].mean().unstack().plot(kind='barh',
 figsize=(15, 10))

#customisation
plt.annotate('Source: https://www.fao.org/faostat/en/#data/GN', (0,-.1), xycoords
='axes fraction')
plt.title("Subcontinent: CO2 Emissions over the years by Energy Type", fontsize =
 18, loc='left', y=1.01)
plt.xlabel("Year", fontsize=14)
plt.ylabel("CO2 emissions - absolute number in kilotones ", fontsize=14)
plt.show()
```

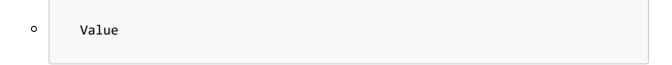


# Conclusion

This has been an extensive examination of the global CO2 emissions for the energy sector for roughly a 50 year period. It highlights the fluctuations in CO2 overall as well as for specific energy sectors. In addition, different countries recorded varying levels of CO2 emissions from different energy types.

# 1. CO2 emission World

- China is the most affected country in the with value of 5.804601e Million kilotonnes
- Niue sless affected country in the world with the Value of 1.6 kilotonnes
- From 1995 Most of the CO2 is emmit by Electricty, and in 2019 the value of approx 8000 Kiloton.
- From 1885 we also see the spik in emmission of CO2 with Motor Gasoline and LPG.
- Most of the CO2 emmitted by Electricity in the world With the Value of 3.542233 Million kilotone
- least of the CO2 emmitted by Motor Gsoline in the world With the Value of 1000.5 kilotone
- Top 10 Country by emission of CO2



- Area
- o China 5.804601e+06
- China, mainland 5.686551e+06
- o India 4.906070e+06
- United States of America 3.544757e+06
- Japan 1.613227e+06
- USSR 1.342590e+06
- Russian Federation 1.006218e+06
- o Brazil 8.381262e+05
- o Poland 7.275216e+05
- Turkey 7.107471e+05
- Top Item by emission
  - Item
  - Coal 8.465990e+05
  - Electricity 3.542233e+06
  - o Fuel oil 7.315993e+04
  - o Gas-Diesel oil 6.778946e+05
  - Liquefied petroleum gas (LPG) 3.354174e+03
  - o Motor Gasoline 1.541632e+03
  - Natural gas (including LNG) 4.146732e+04

# 2. In the Subcontinent

- India is the most affected country from Subcontinent with value of 4.906070e+06 Million Kilotone
  - Value in Kilotone
  - o Coal 8.133342e+05
  - Electricity 3.420779e+06
  - Fuel oil 7.242071e+04
  - o Gas-Diesel oil 5.801133e+05
  - o Liquefied petroleum gas (LPG) 3.277531e+02
  - o Motor Gasoline 1.217229e+03
  - o Natural gas (including LNG) 1.787776e+04
- Pakistan is second affected country from Sub continent with value of 0.0924383 Million kilotone
  - Value in Kilotone
  - o Coal 27894.4824
  - o Electricity 110799.5409
  - o Fuel oil 361.2075
  - o Gas-Diesel oil 27892.1467
  - Liquefied petroleum gas (LPG) 2902.6501
  - o Motor Gasoline 289.3997
  - Natural gas (including LNG) 22298.8643
- Bangladesh is least affected country from Sub continent with value of .008774187e Million kilotone
  - Value in Kilotone
  - o Coal 5370.3701

- Electricity 10654.8759
- Fuel oil 378.0197
- o Gas-Diesel oil 69889.1326
- Liquefied petroleum gas (LPG) 123.7708
- Motor Gasoline 35.0041
- Natural gas (including LNG) 1290.6937
- Most of the CO2 emmited by Electricity in Subcontinent With the Value of 3.542233 Million kilotone
- least of the CO2 emmited by Motor Gasoline in Subcontinent With the Value of 1000.5 kilotone