PROJECT REPORT

1. INTRODUCTION

1.1 OVERVIEW

Analysis of Global Carbon dioxide is the Moto of our project.
Global emissions of carbon dioxide have more than doubled since 1971, increasing on average 2% per year. In 1971, the current OECD countries were responsible for 67% of world CO2 emissions.
As a consequence of rapidly rising emissions in the developing world, the OECD contribution to the total fell to 37% in 2013.
By far, the largest increase in non-OECD countries occurred in Asia, where China's emissions of CO2 from fuel combustion have risen, on average, by 6% per annum between 1971 and 2013.
Driven primarily by increased use of coal, CO2 emissions from fuel combustion in China increased over tenfold between 1971 and 2013.

1.2 PURPOSE

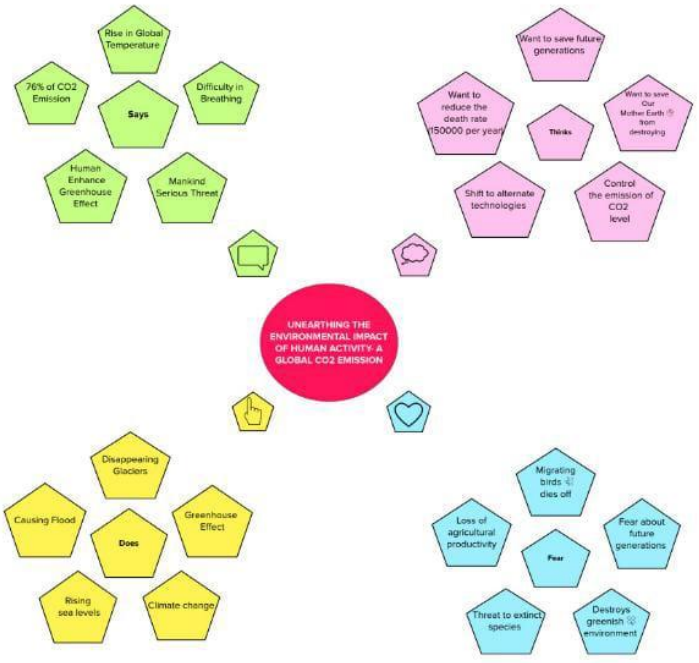
This Analysis determines the exclusive global amount of carbon dioxide and other greenhouse gases accumulated over the full lifecycle of a product, service, or operation.

2. DEFINITION AND DESIGN THINKING

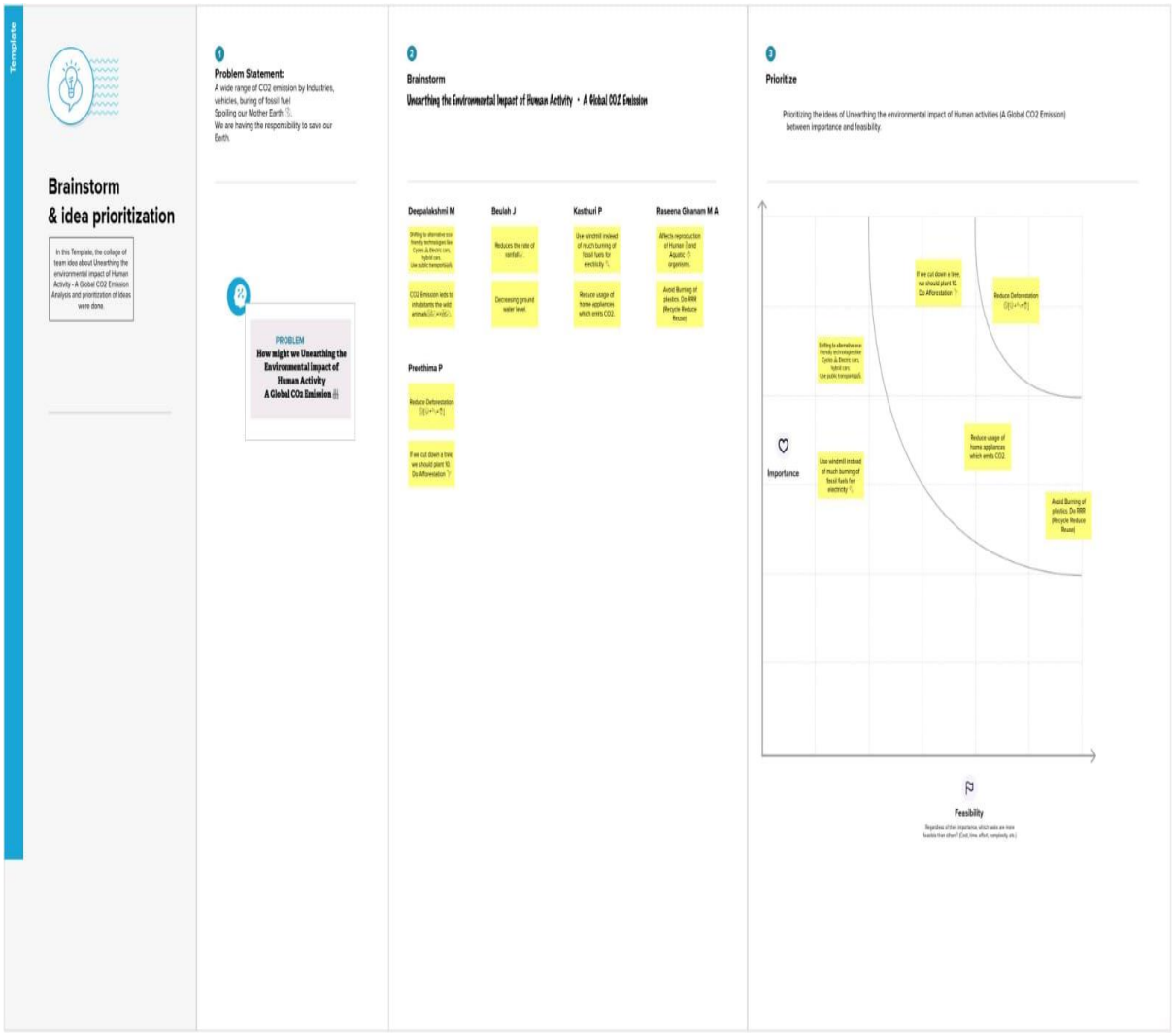
2.1EMPATHY MAP

EMPATHY MAP:

UNEARTHING THE ENVIRONMENTAL IMPACT OF HUMAN ACTIVITY - A GLOBAL CO_2 EMISSION



2.2 IDEATION AND BRAINSTROMING MAP



3.RESULT

Top Co2 Emitting Countries For Past 10 Years

- China is the highest Co2 emitting country among the other countries.
- United States is the second highest Co2 emitting country.
- India is the third Co2 emitting country.

Continents Contribution towards Co2 emission

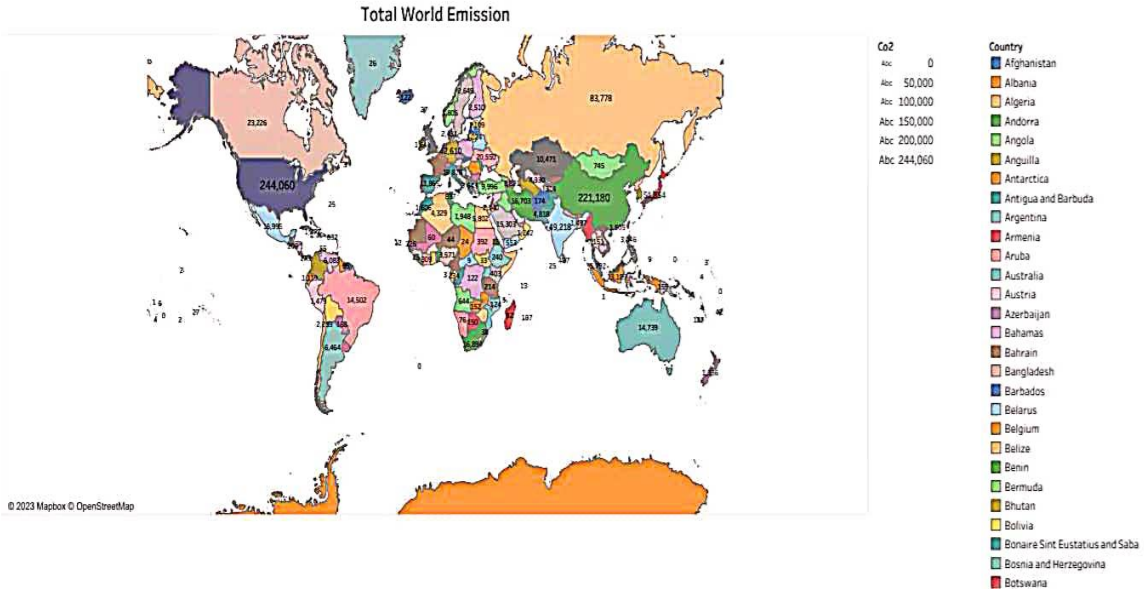
- Asian is the largest Co2 emitting continent among other continents.
- Europe is the second largest Co2 emitting continent.
- Antarctica is the lowest Co2 emitting continent because of low humane activity/ existence in the continent.

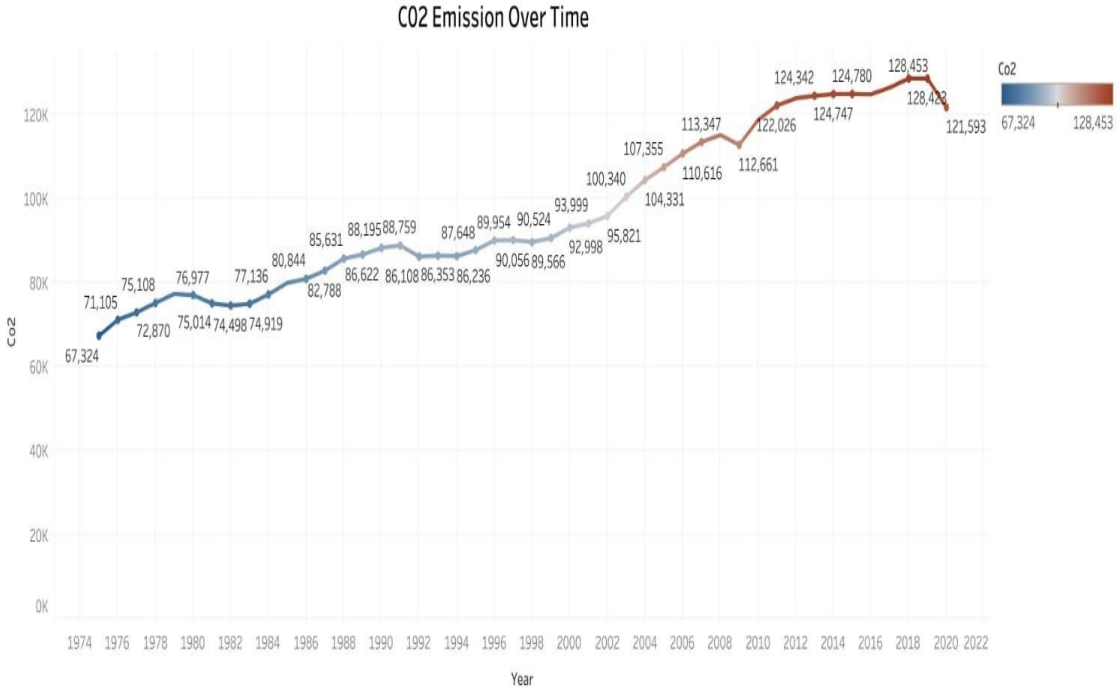
Overall India contribution towards Co2 emission

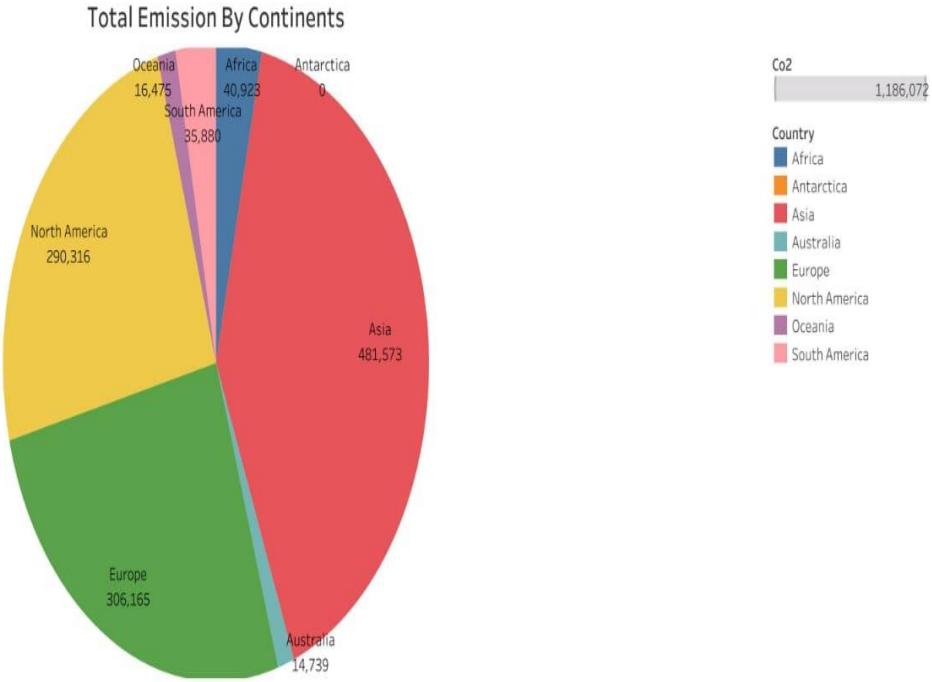
- **C**oal is the highest factor of Co2 emission.
- Oil is the second highest Co2 emitting factor.

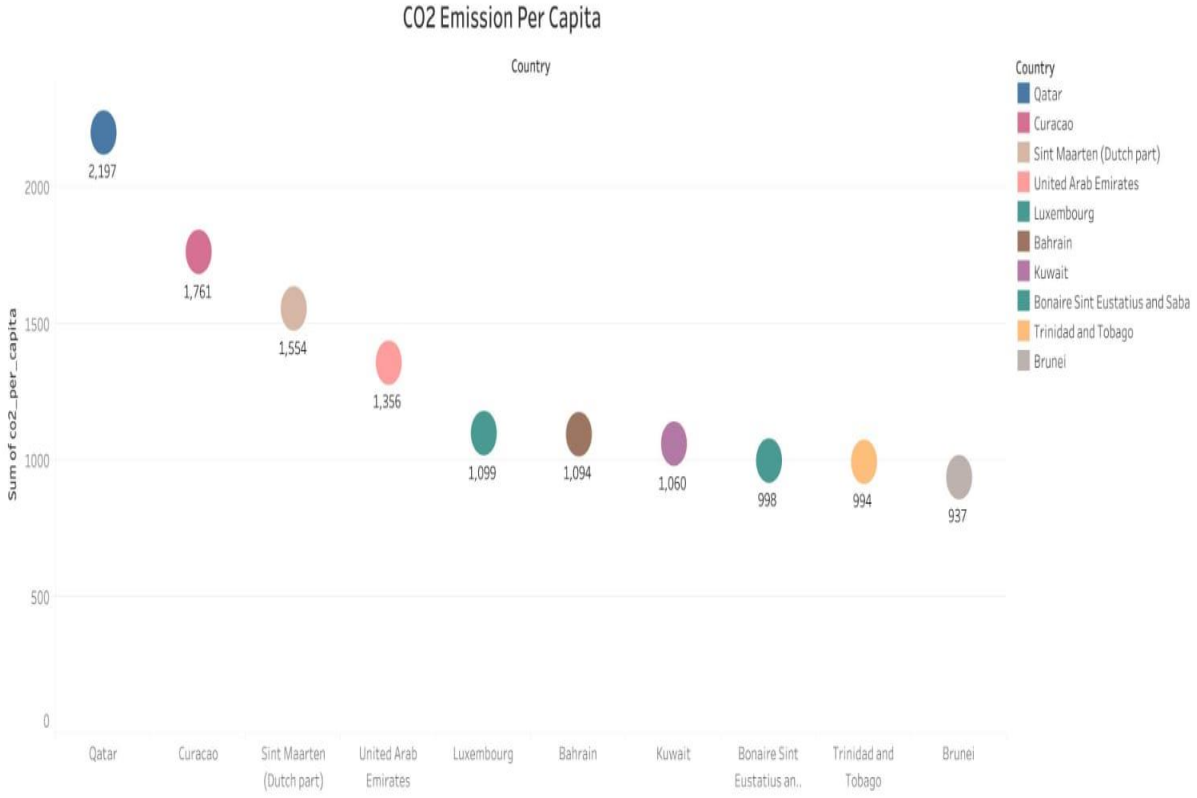
Over all Co2 emission over time

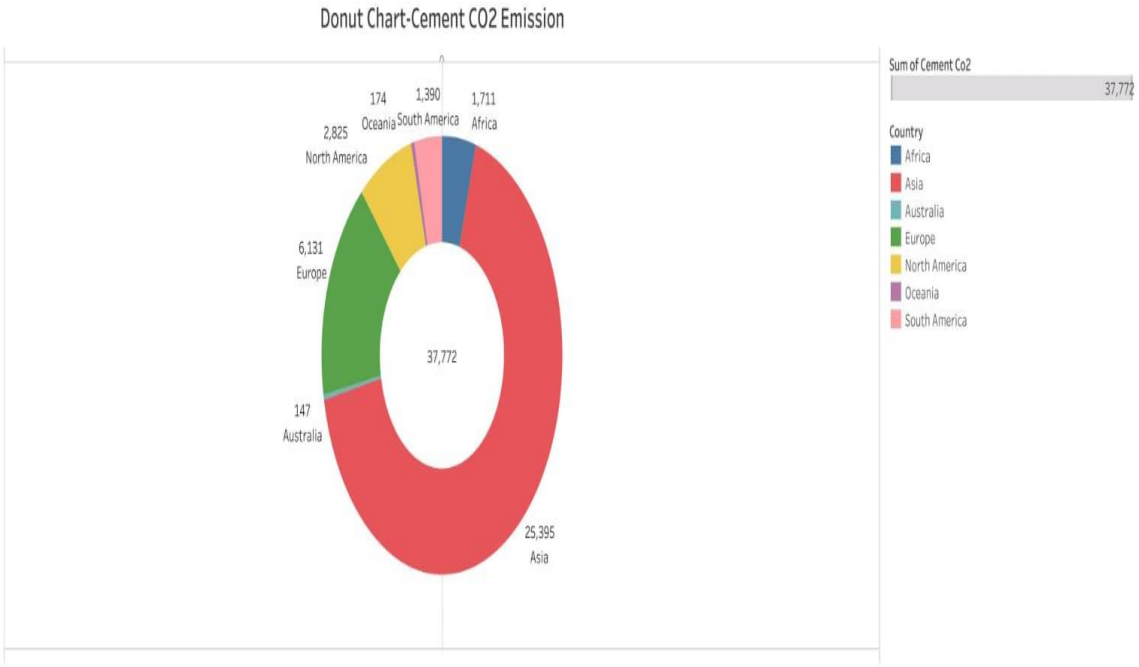
- Co2 emission in 197 was 67324(in metric tons).
- Co2 emission in 2019 was 128423(in metric tons).
- Co2 emission in 2020 was found to be 12193(in metric tons).



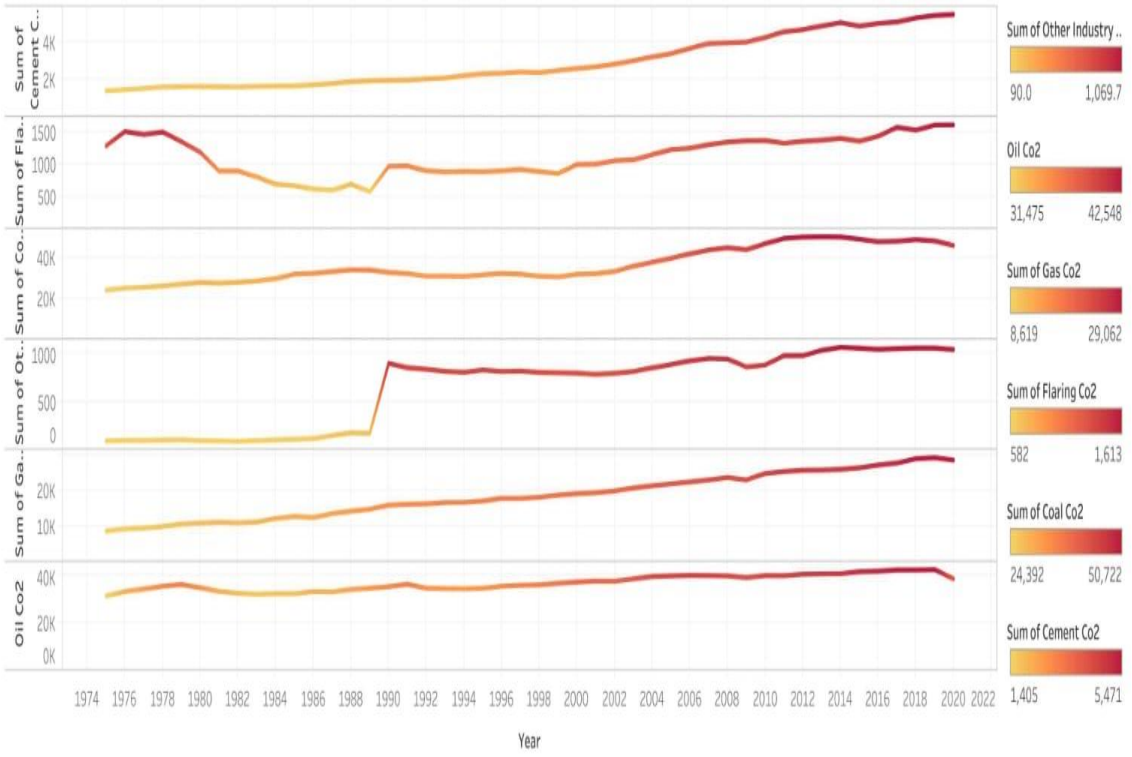

C02 Emission Over Time
Co2
67,324
128,453
120K
100K
80K
60K
40K
20K
0K
Co2
67,324
71,105
75,108
72,870
76,977
75,014
77,136
74,498
74,919
80,844
82,788
85,631
86,622
88,195
86,108
88,759
86,353
87,648
86,236
89,954
90,056
90,524
89,566
93,999
92,998
95,821
100,340
104,331
107,355
110,616
113,347
112,661
122,026
124,342
124,747
124,780
128,453
128,422
121,593
1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Year


Total Emission By Continents
Africa
40,923
Antarctica
0
Asia
481,573
Australia
14,739
Europe
306,165
North America
290,316
Oceania
16,475
South America
35,880
Co2
1,186,072
Country
Africa
Antarctica
Asia
Australia
Europe
North America
Oceania
South America

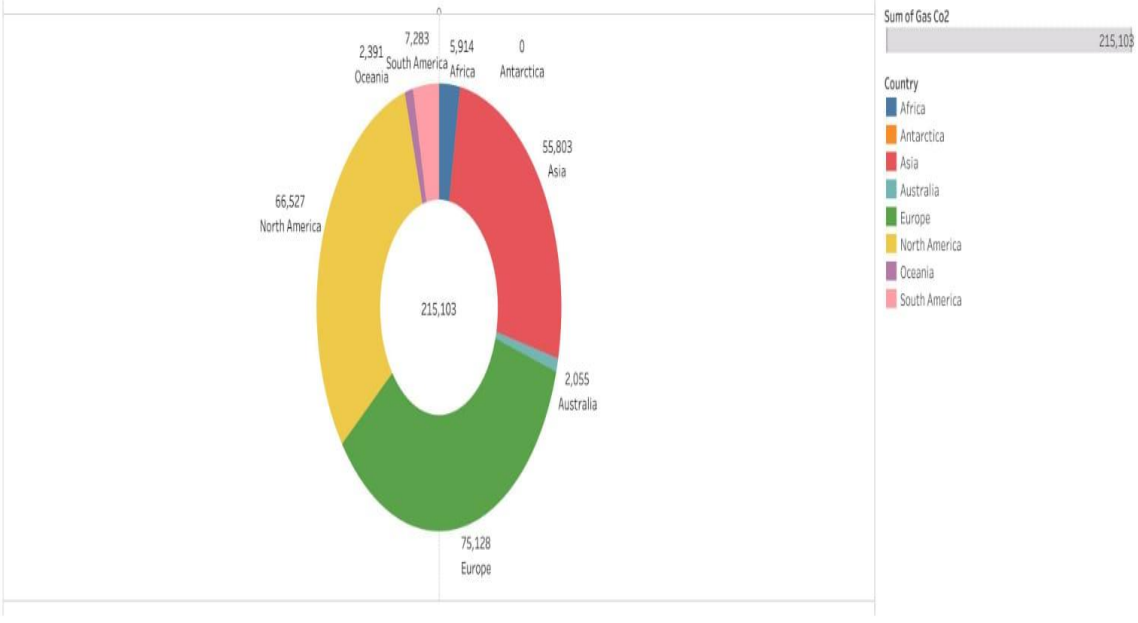

CO2 Emission Per Capita
Country
Sum of co2_per_capita
2000
1500
1000
500
0
2,197
1,761
1,554
1,356
1,099
1,094
1,060
998
994
937
Qatar
Curacao
Sint Maarten (Dutch part)
United Arab Emirates
Luxembourg
Bahrain
Kuwait
Bonaire Sint Eustatius an..
Trinidad and Tobago
Brunei
Country
Qatar
Curacao
Sint Maarten (Dutch part)
United Arab Emirates
Luxembourg
Bahrain
Kuwait
Bonaire Sint Eustatius and Saba
Trinidad and Tobago
Brunei

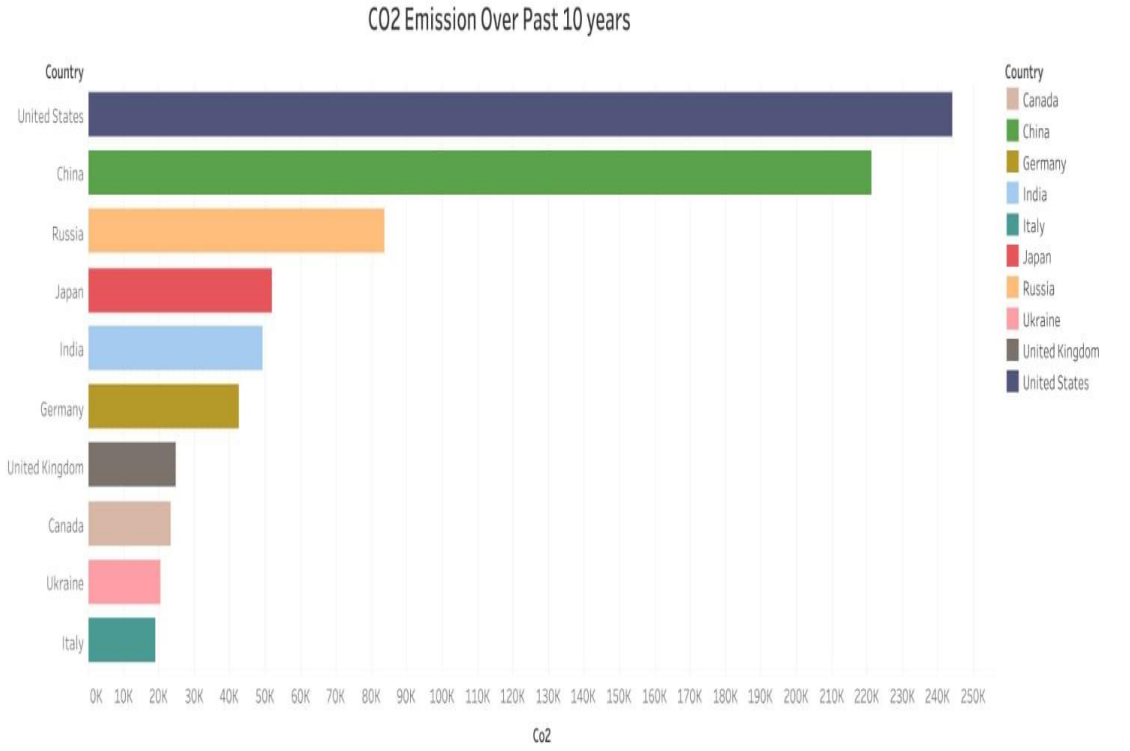

Donut Chart-Cement CO2 Emission
174
Oceania
1,390
South America
1,711
Africa
2,825
North America
6,131
Europe
37,772
147
Australia
25,395
Asia
Sum of Cement Co2
37,772
Country
Africa
Asia
Australia
Europe
North America
Oceania
South America

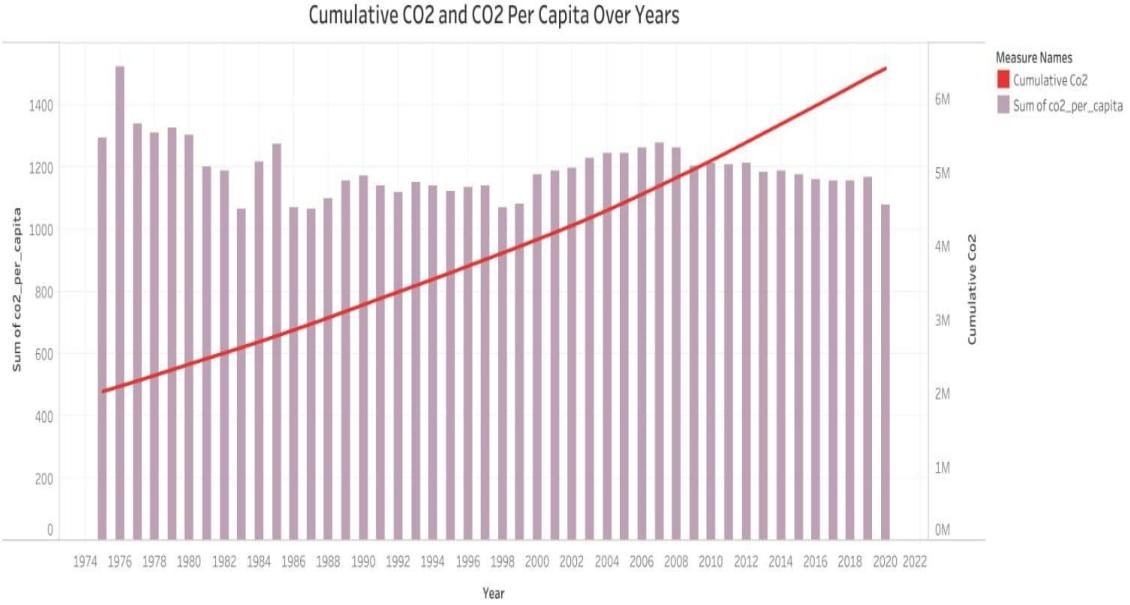
Emission Rate by Internal Factors Over Years



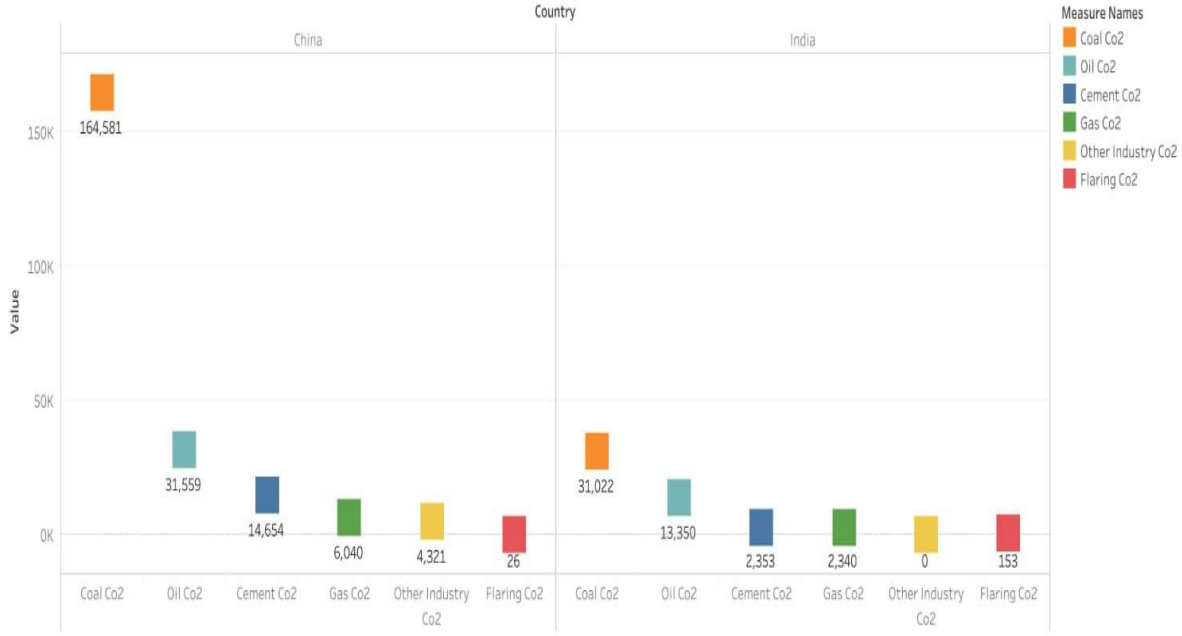
Donut Chart-Gas CO2 Emission



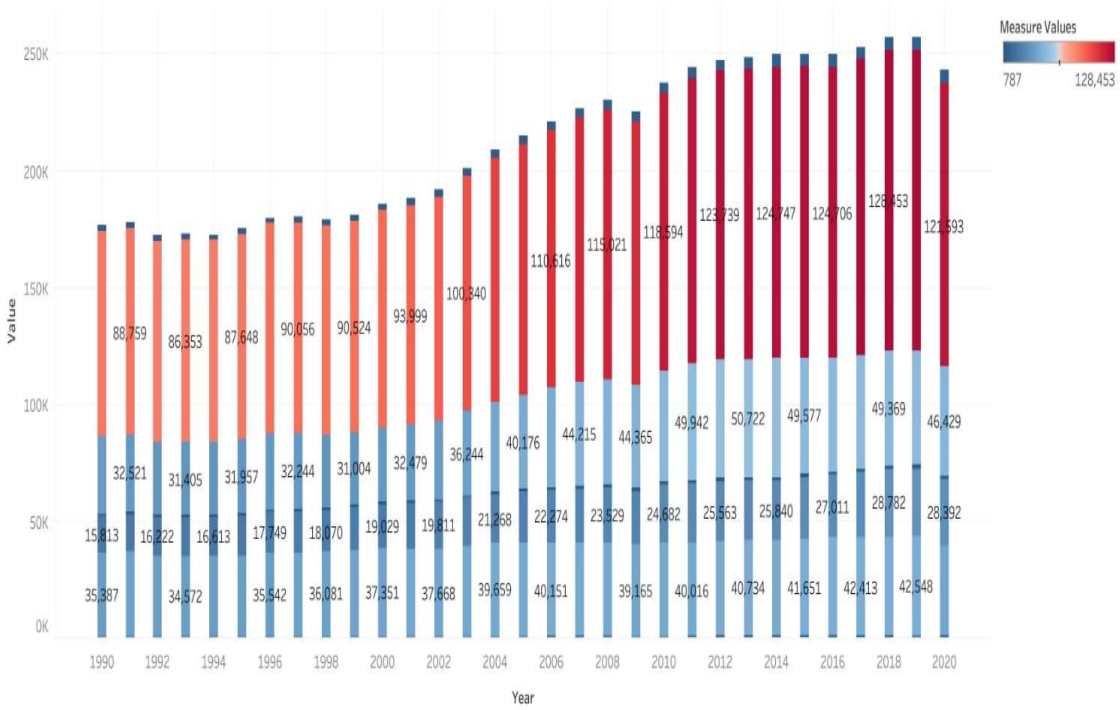

CO2 Emission Over Past 10 years
Country
United States
China
Russia
Japan
India
Germany
United Kingdom
Canada
Ukraine
Italy
0K 10K 20K 30K 40K 50K 60K 70K 80K 90K 100K 110K 120K 130K 140K 150K 160K 170K 180K 190K 200K 210K 220K 230K 240K 250K
Co2
Country
Canada
China
Germany
India
Italy
Japan
Russia
Ukraine
United Kingdom
United States

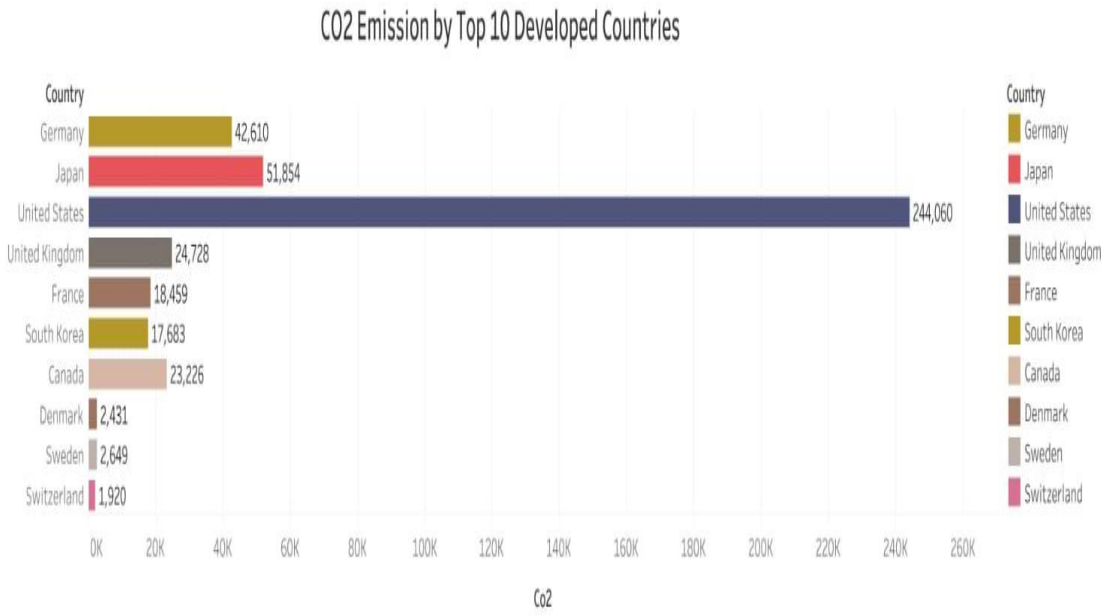

Cumulative CO2 and CO2 Per Capita Over Years
Sum of co2_per_capita
0
200
400
600
800
1000
1200
1400
Cumulative Co2
0M
1M
2M
3M
4M
5M
6M
1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Year
Measure Names
Cumulative Co2
Sum of co2_per_capita

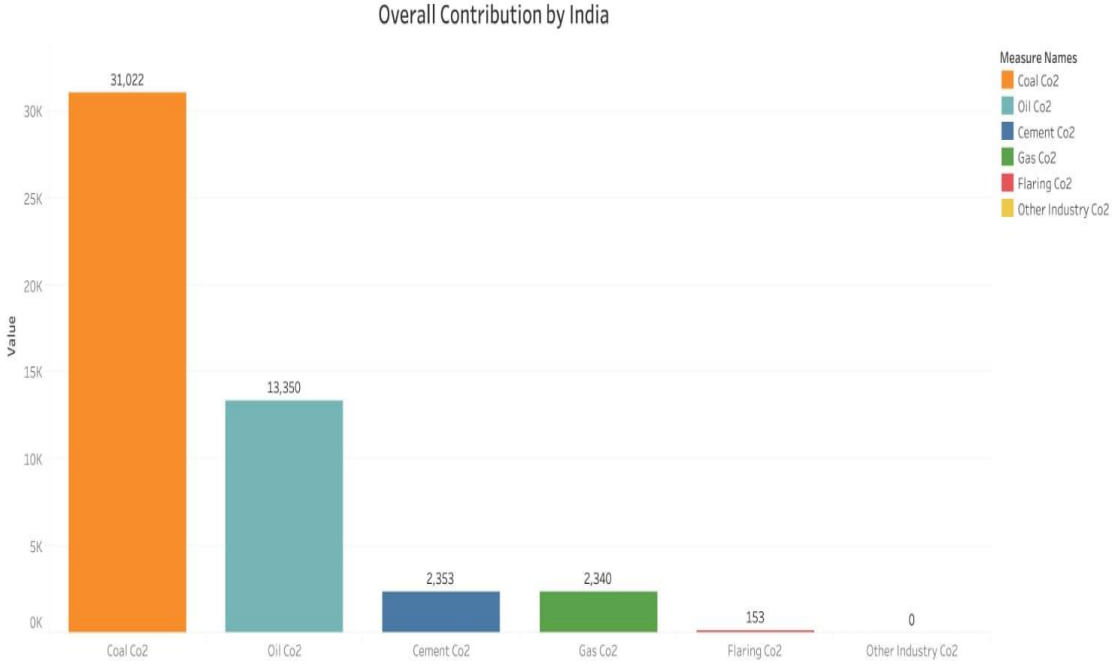
China vs India Internal Factors

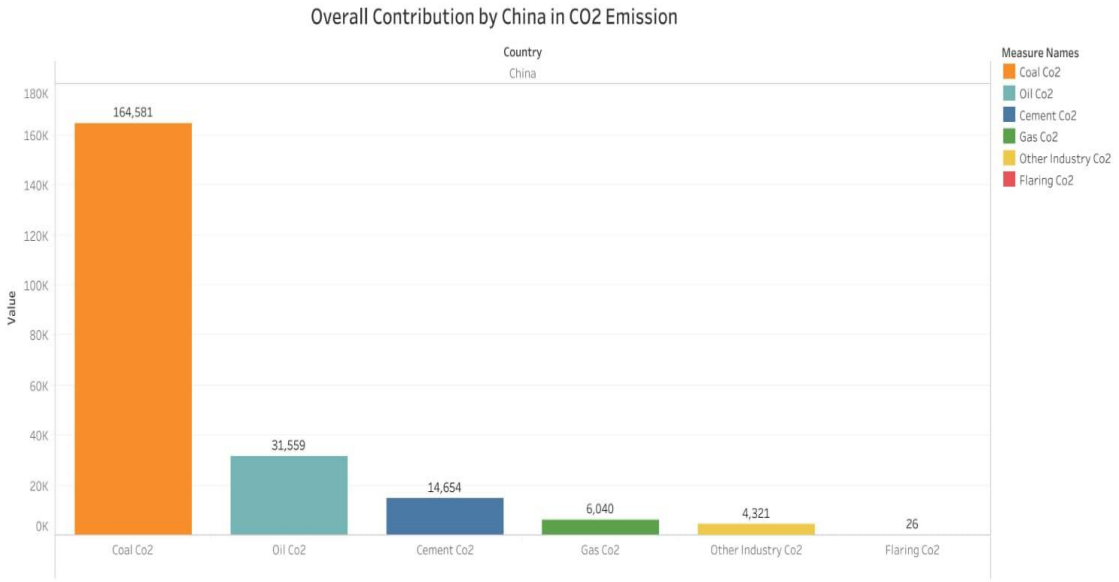


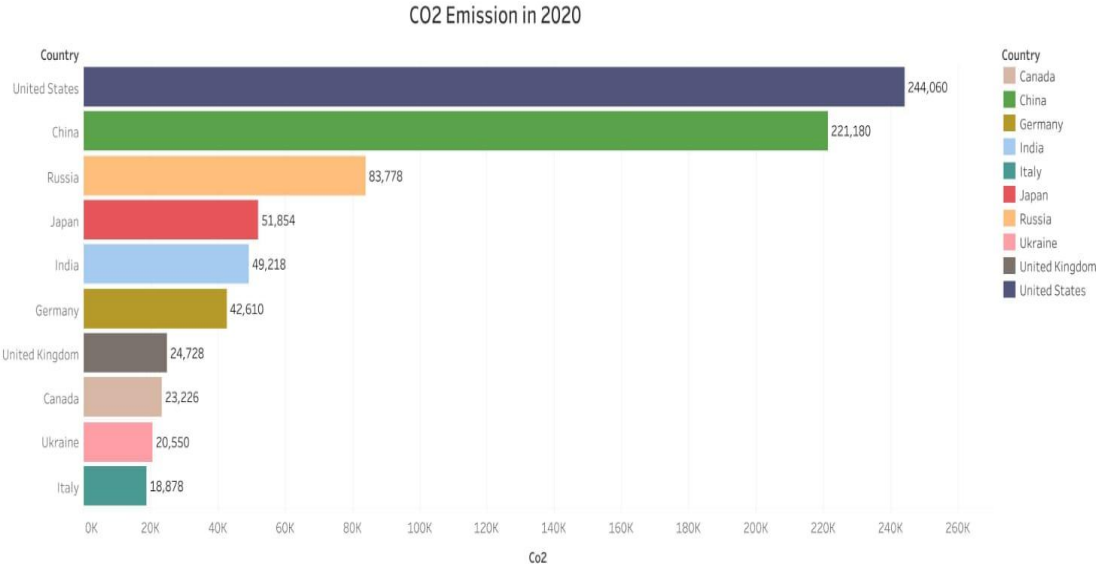
CO2 Emission by Internal Factors from 1990 to 2020

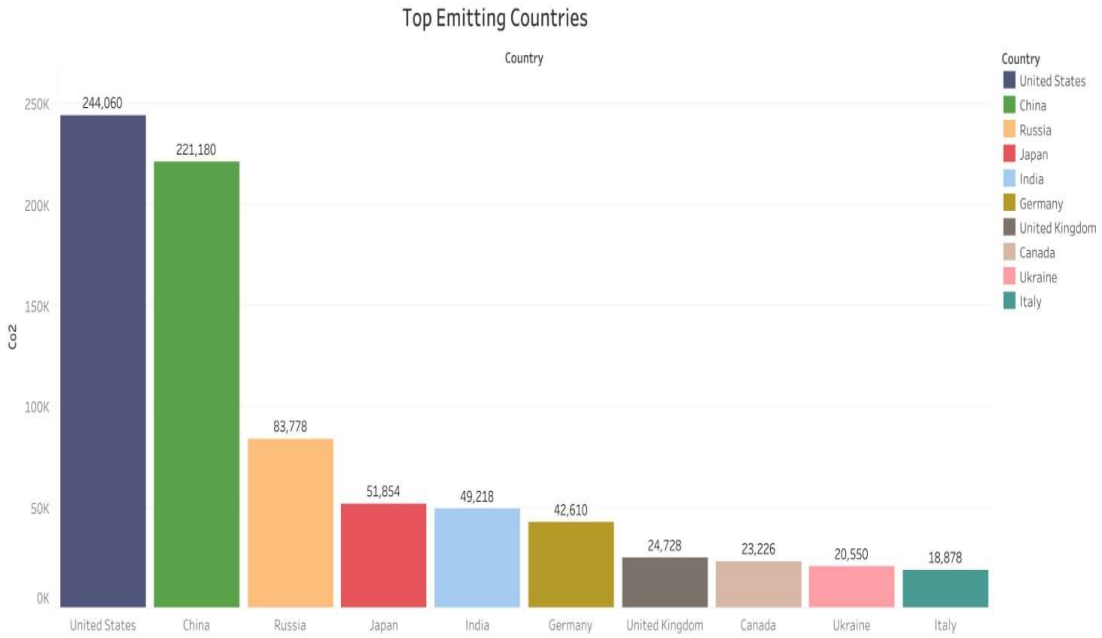


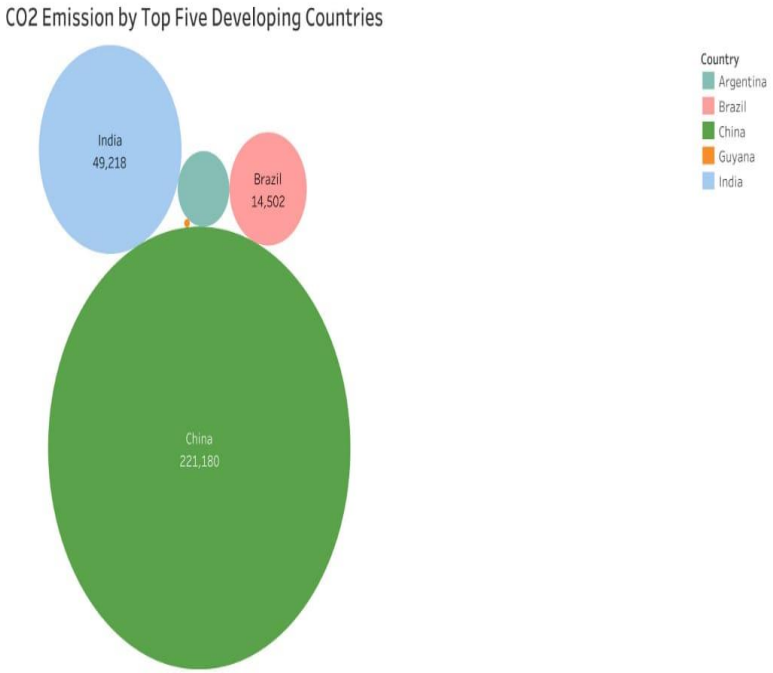

CO2 Emission by Top 10 Developed Countries
Country
Germany
Japan
United States
United Kingdom
France
South Korea
Canada
Denmark
Sweden
Switzerland
42,610
51,854
244,060
24,728
18,459
17,683
23,226
2,431
2,649
1,920
0K
20K
40K
60K
80K
100K
120K
140K
160K
180K
200K
220K
240K
260K
Co2


Overall Contribution by India
Measure Names
Coal Co2
Oil Co2
Cement Co2
Gas Co2
Flaring Co2
Other Industry Co2
Value
30K
25K
20K
15K
10K
5K
0K
31,022
13,350
2,353
2,340
153
0
Coal Co2
Oil Co2
Cement Co2
Gas Co2
Flaring Co2
Other Industry Co2


Overall Contribution by China in CO2 Emission
Country
China
Measure Names
Coal Co2
Oil Co2
Cement Co2
Gas Co2
Other Industry Co2
Flaring Co2
Value
180K
160K
140K
120K
100K
80K
60K
40K
20K
0K
164,581
31,559
14,654
6,040
4,321
26
Coal Co2
Oil Co2
Cement Co2
Gas Co2
Other Industry Co2
Flaring Co2


CO2 Emission in 2020
Country
United States
China
Russia
Japan
India
Germany
United Kingdom
Canada
Ukraine
Italy
244,060
221,180
83,778
51,854
49,218
42,610
24,728
23,226
20,550
18,878
0K
20K
40K
60K
80K
100K
120K
140K
160K
180K
200K
220K
240K
260K
Co2
Country
Canada
China
Germany
India
Italy
Japan
Russia
Ukraine
United Kingdom
United States


Top Emitting Countries
Country
Co2
250K
200K
150K
100K
50K
0K
244,060
221,180
83,778
51,854
49,218
42,610
24,728
23,226
20,550
18,878
United States
China
Russia
Japan
India
Germany
United Kingdom
Canada
Ukraine
Italy
Country
United States
China
Russia
Japan
India
Germany
United Kingdom
Canada
Ukraine
Italy


CO2 Emission by Top Five Developing Countries
India
49,218
Brazil
14,502
China
221,180
Country
Argentina
Brazil
China
Guyana
India

4. ADVANTAGES AND DISADVANTAGES

- By this Analysis we can calculate the world wide co2 emission rate.
- By knowing such statistical data we can ensure some techniques to reduce this co2 emissions by several methods.
- The main and foremost technique is CARBON CAPTURE technique. Was the most efficient way to control and reduce the co2 emission Worldwide.

- The methods and CCS technologies that are necessary for carbon capture have some cost implications attached to them.
- Therefore, it can be very costly for power plants to generate electricity through fossil fuels.
- There are several concerns with respect to the safety of the storage of carbon dioxide in huge volumes at a single location due to the possibility of leakages, which can lead to environmental contamination .

5. APPLICATION

Measuring Co2 in the engine exhaust using a fuel gas analyzer alao be useful in the evaluation of engine efficiency.

In the agriculture and food storage industries, Co2 plays the critical role in the growth of plants and the storage of the produce.

6. CONCLUSION

Technologies for the capture of CO2 are relatively well understood today based on industrial experience in a variety of applications.

Similarly, there are no major technical or knowledge barriers to the adoption of pipeline transport, or to the adoption of geological storage of captured CO2.

However, the integration of capture, transport and storage in full-scale projects is needed to gain the knowledge and experience required for a more widespread deployment of CCS technologies.

7. FUTURE SCOPES

In the Annual Energy outlook 2022 Reference case, which assumes no changes to current laws of regulations, the U.S Energy Information Administration (EIA) projects that U/S Energy-related Co2 emissions will fall to 4.5 Billion metric tons in 2037. So we can analysis the future co2 emission rate.