APPLIED DATA SCIENCE 1

STATISTICS AND TRENDS – REPORT

Topic: Climate Change data analysis based on world bank data

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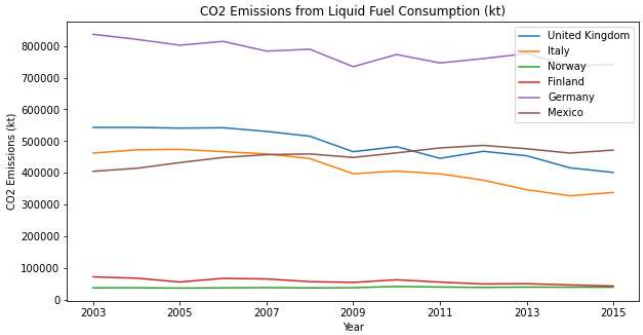
LINK TO GITHUB: 7shivakumar/Assignment2_ADS (github.com)

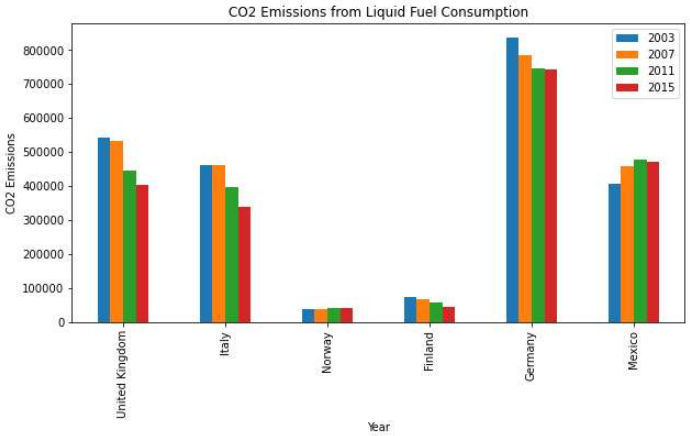
The report inspects the relation between electricity production from coal sources and CO2 emissions from liquid fuel consumption

In many parts of the World, coal is the primary energy source for producing electricity. Nonetheless, its use contributes significantly to greenhouse gas emissions, especially carbon dioxide (CO2), a key driver of climate change.

On the other hand, using liquid fuels, especially in the transportation sector, is a significant source of CO2 emissions. Many studies have examined the relationship between these two variables to determine how reductions in coal-based electricity production and liquid fuel consumption can help mitigate climate change.

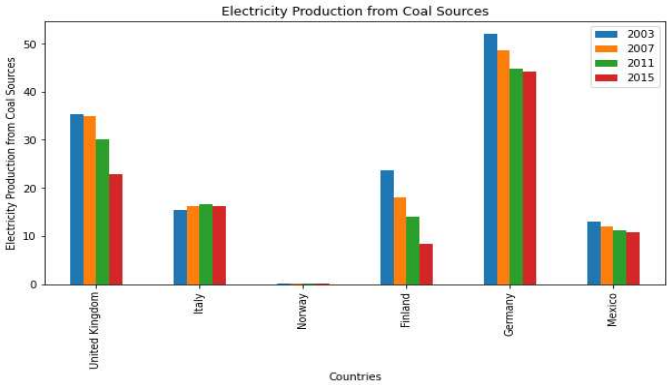
Line and Bar Graph for CO2 Emission among various countries during 2003 - 2015

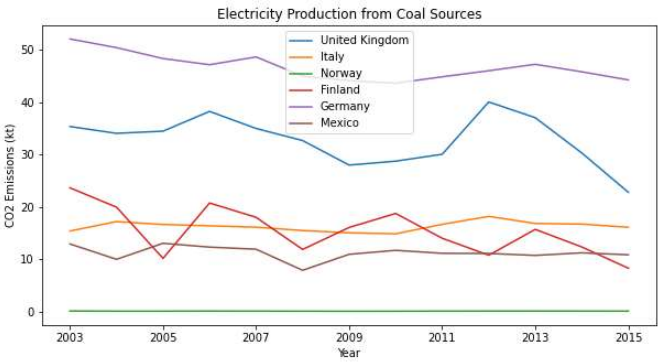




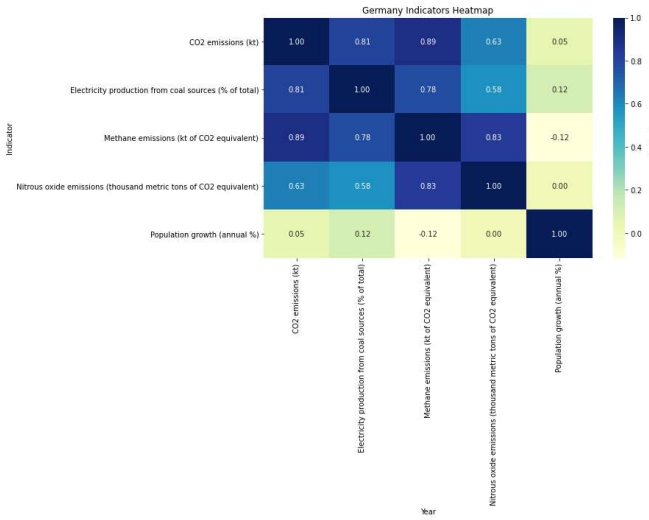
The above bar graph shows the CO2 emissions of 6 countries, we can see that Germany is the most significant contributor emission of CO2 compared to the other countries in the diagram and Norway and Finland are the minor contributors to the emission of CO2. From 2003 to 2015 UK, Italy, Finland, and Germany tried to control and gradually reduce the emission of co2 but not by a considerable margin. Norway increased their emission slightly, and Mexico increased their emission from 2003 to 2011. Finally, the bar graph demonstrates the significant differences in CO2 emissions across nations. It highlights the significance of investing in renewable energy technologies to reduce our dependence on fossil fuels. It also demonstrates that, while some countries have attempted to control and reduce their CO2 emissions, there is still a long way to go in achieving meaningful reductions in global greenhouse gas emissions.

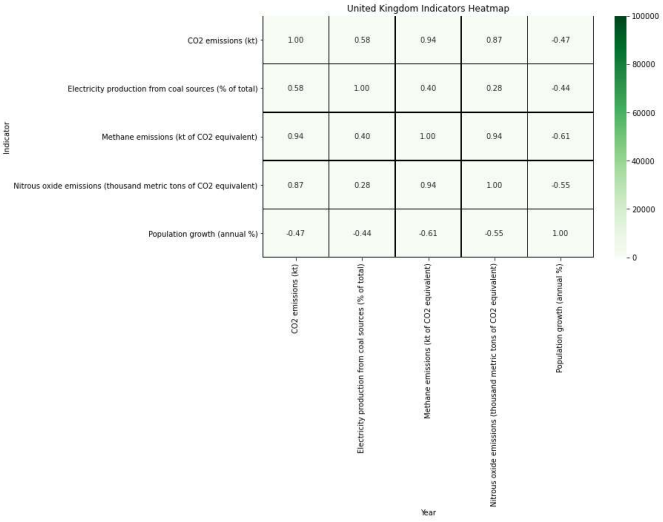
Line and Bar Graph for Electricity Production from Coal Sources among various countries during 2003 - 2015





The electricity production from the coal sources graph shows that Germany produces most of the electricity from coal sources, followed by the UK, Italy, and Finland. It is also worth noting that while coal consumption has decreased slightly in some nations over the years, it remains a dominant source of electricity production. Norway uses the least amount of coal source for electricity production compared to other countries. By 2015, every country has tried to reduce the use of coal sources for electricity production. To summarize, while coal has played an essential role in meeting our energy needs, it is critical to continue promoting renewable energy sources and decreasing our dependence on fossil fuels like coal. By doing so, we can mitigate the adverse effects of climate change and build a moresustainable future for ourselves and future generations.





The above Heat map shows the correlation between various indicators such as CO2 emission, Electricity production, Menthane gas emission, Nitrous oxide emission, Population growth for the countries Germany and United Kingdom respectively. As per the above both charts it is observed most of the values are positive which indicates that they ate directly related to each other except Methane gas vs Population growth shows negative for Germany heat map. Whereas for united kingdom they are certain contributing factors where indicators relate to each other but Population growth is not directly related to any of the considered indicators as per the given stats.