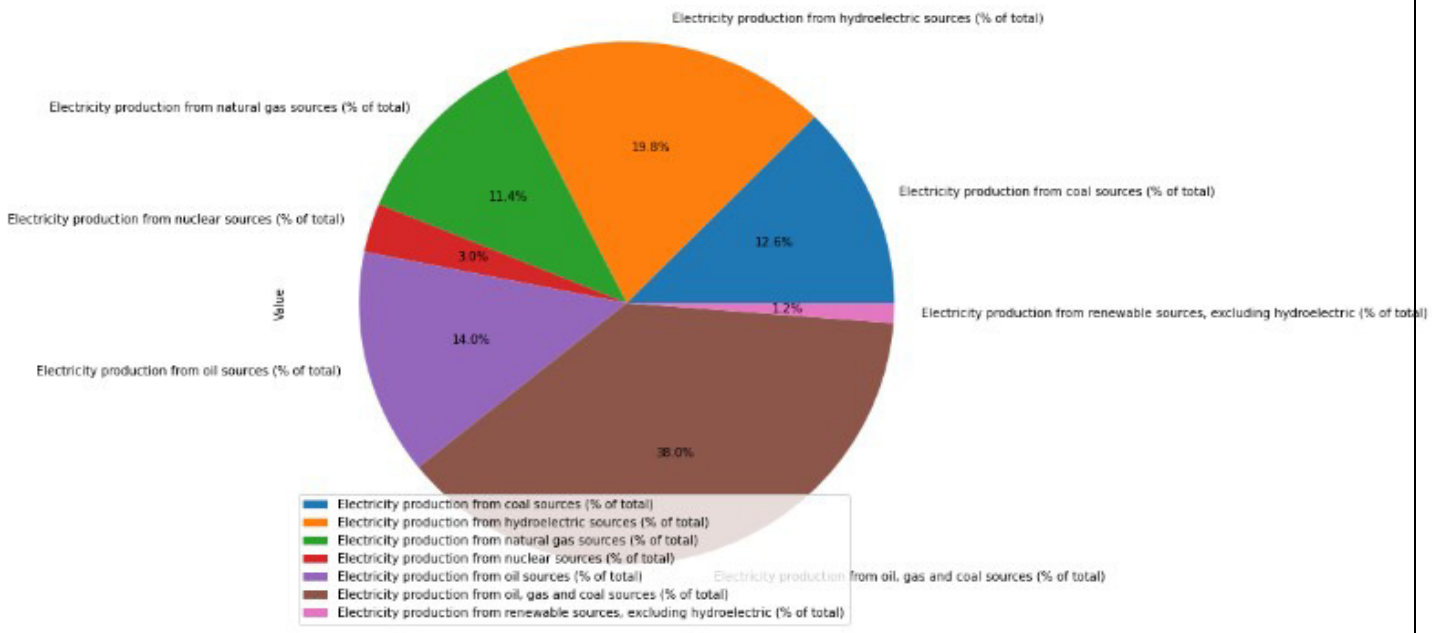
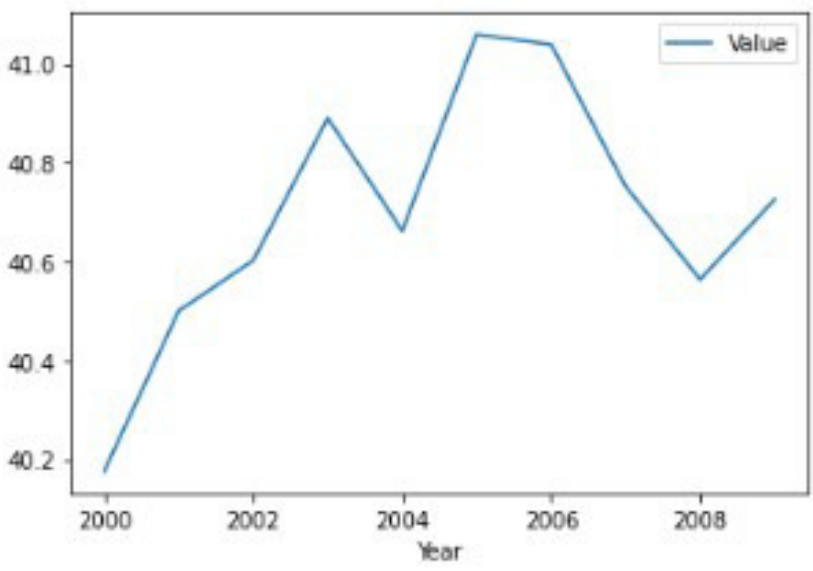
ELECTRICITY PRODUCTION & CONSUMPTION

Electricity is an essential part of the 21st century. Since its discovery electricity production and consumption has always been on the rise. There are multiple ways to generate electricity and among them some are renewal and safe whereas others are exhaustive and unsafe. The distribution of these sources is shown in the figure and depicts the various kinds of electricity sources available in the modern world.



PRODUCTION

Electricity Production from various sources is shown in the above pie chart. Work Bank Data is used for analysis of Electricity production and the graph is drawn for all the different indicators available in the data. Yearly electricity production from the above mentioned indicators are analyzed and few conclusions regarding the statistical values have been drawn. Using the machine learning statistical models , variance, mean , standard deviation etc. are calculated on the Electricity Generated. Values generated from electricity data and production data is shown below:



Electricity Data: mean=1100257281.528 stdv=20232385974.203
Production Data: mean=22.251 stdv=30.049

The correlation factor was calculated using Pearson method and the value derived from electricity data is : Pearsons correlation: 0.055

Two Countries were selected for further correlation comparison with the entire world data and all the statistical parameters were calculated.

The correlation between countries (EAR and CEB). There is 6% change across years

DISTRIBUTION

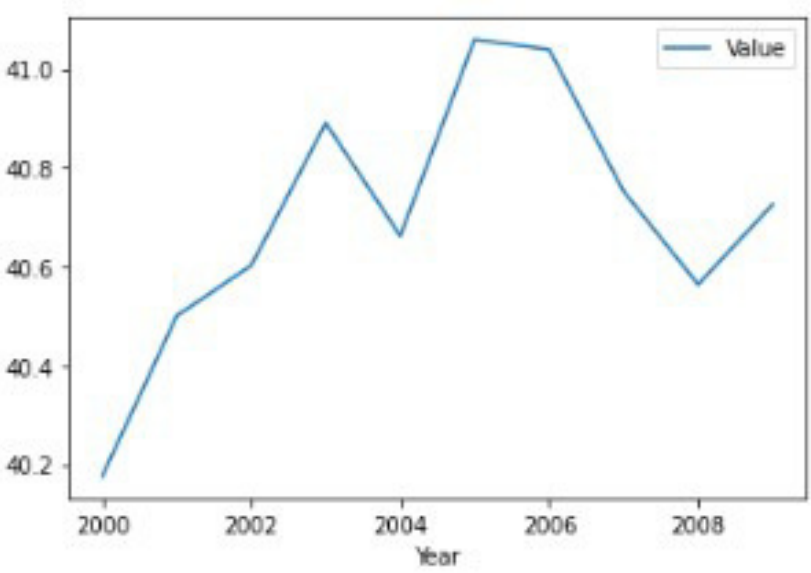
There are many ways to generate electricity and each one has its own advantages and disadvantages. The easier waysoften lead to a lot of emission that is harmful but understanding the distribution will help mitigate the risk caused by excessive generation and also the risk to the environment.

EFFECTS OF PRODUCTION

The production of electricity is not always a clean process and it often involves emission of Co2. The Co2 emitted is a big concern among all the countries of the world as it causes global warming. To reduce the emission it is important to understand the amount emitted by the generation and find clean and safe ways to generate electricity As population grows, so does the electricity consumption and production. This calls for immediate actions to prevent global warming.

The Statistical mean value is derived at for all the above indicators by grouping them into different categories for further analysis of CO2 emissions caused by energy consumption and distribution.

Indicator-wise CO2 emission from electricity and heat production is calculated for the purpose of analysis and the results are visualized for the years from 2000 to 2010.



CONCLUSION

The production and consumption of electricity is a continuous process and essential as well. The best action to be taken is to prevent over production and at the same time find cleaner ways to generate electricity. This report shows the areas of production of electricity and their contributions along with the Co2 emission caused at a whole.

It is generally assumed that graphs offer an effective way to communicate data to the user, by supporting and enhancing the cognitive decoding of information and thinking

Yet, graphic representations can fail if the data visualizations chosen are unsuitable and do not respect the characteristics of human perception and cognition.

visualizations integrate individual measures and serve as a link between data analysis and the users. Visualizations assist in optimization as they allow to identify optimization potentials and enable operators to check whether optimization actions are effective. Furthermore, interactive visualizations can motivate, trigger, and enable energy saving actions.