

# Business Question and Visualization Report

Date	30 July 2025
Team ID	xxxxxx
Project Name	<b>Global Energy Trends:</b> A Data-Driven Analysis of Consumption Patterns & Renewable Transition (1990-2020)
Maximum Marks	5 Marks

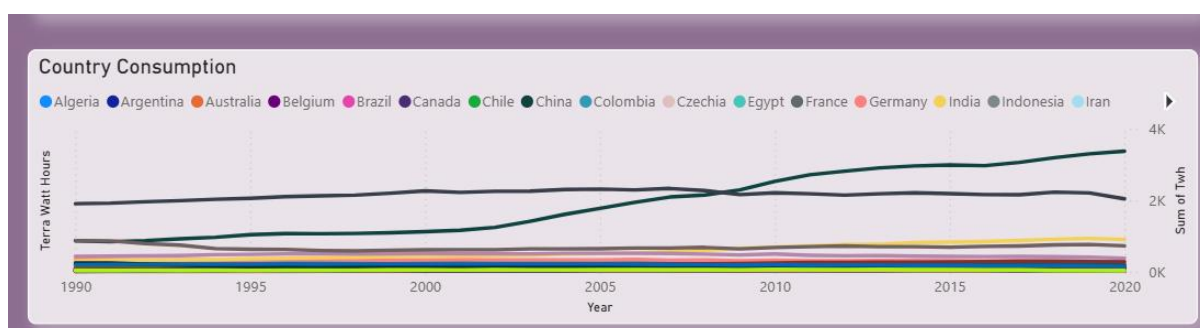
Visualization development refers to the process of creating graphical representations of data to facilitate understanding, analysis, and decision-making. The goal is to transform complex datasets into visual formats that are easy to interpret, enabling users to gain insights and make informed decisions. Visualization development involves selecting appropriate visual elements, designing layouts, and using interactive features to enhance the user experience. This process is commonly associated with data visualization tools and platforms, and it plays a crucial role in business intelligence, analytics and reporting

## Business Questions and Visualization

The process involves defining specific business questions to guide the creation of meaningful and actionable visualizations in Power BI. Well-framed questions help in identifying key metrics, selecting relevant data, and building visualization that provide insights.

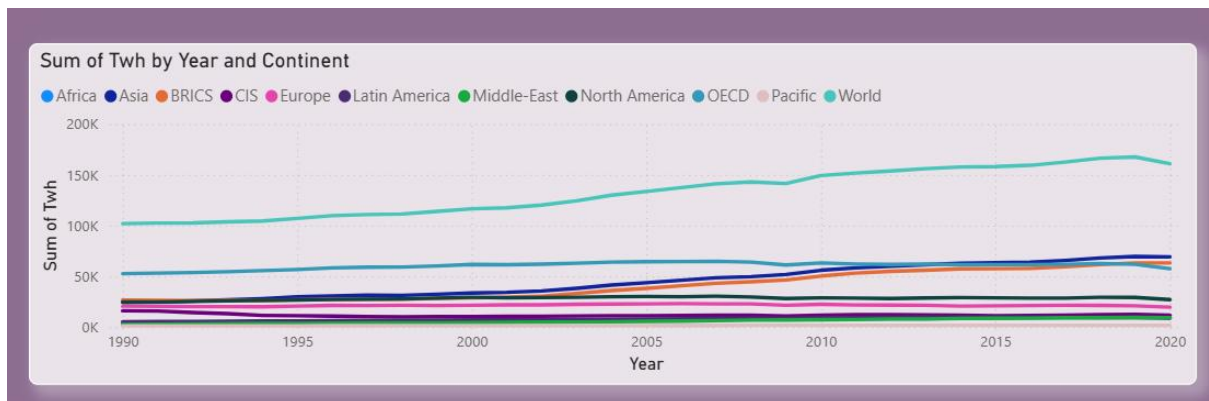
### Q1. How has global energy Country consumption (1990–2020)?

**Visualization:** line chart comparing renewable consumption growth across countries or regions.



### Q2. How has global energy Continent consumption (1990–2020)?

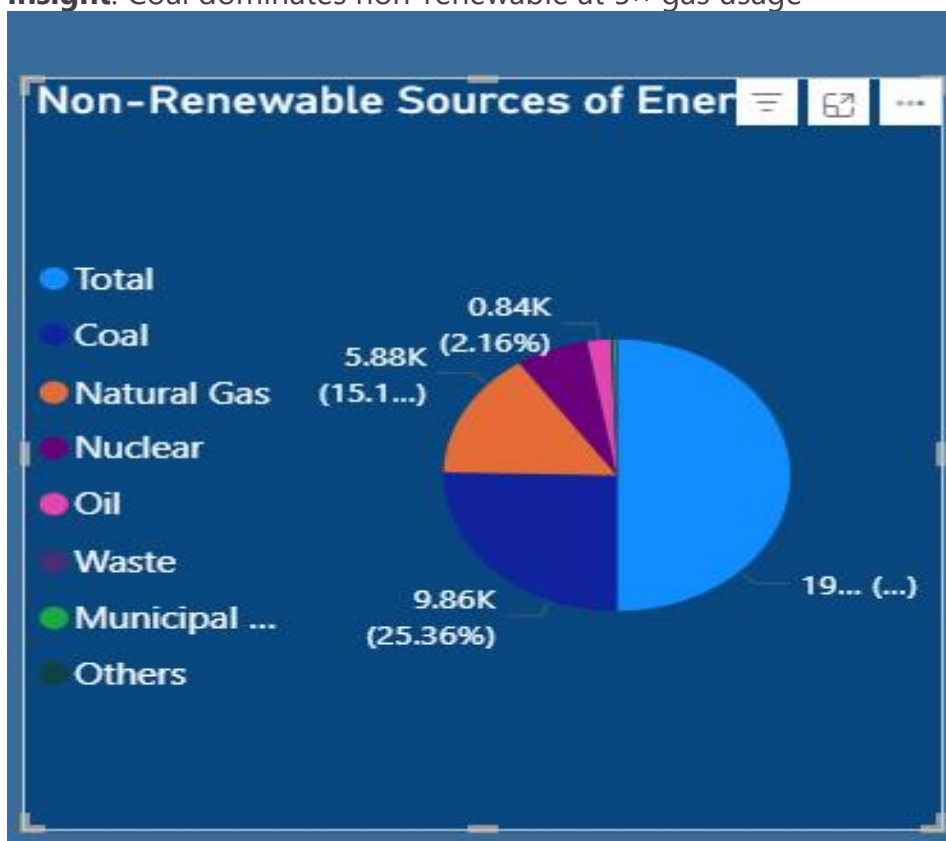
**Visualization:** line chart comparing renewable consumption growth across countries or regions.



**Q3 : What is the composition of global non-renewable energy sources?**

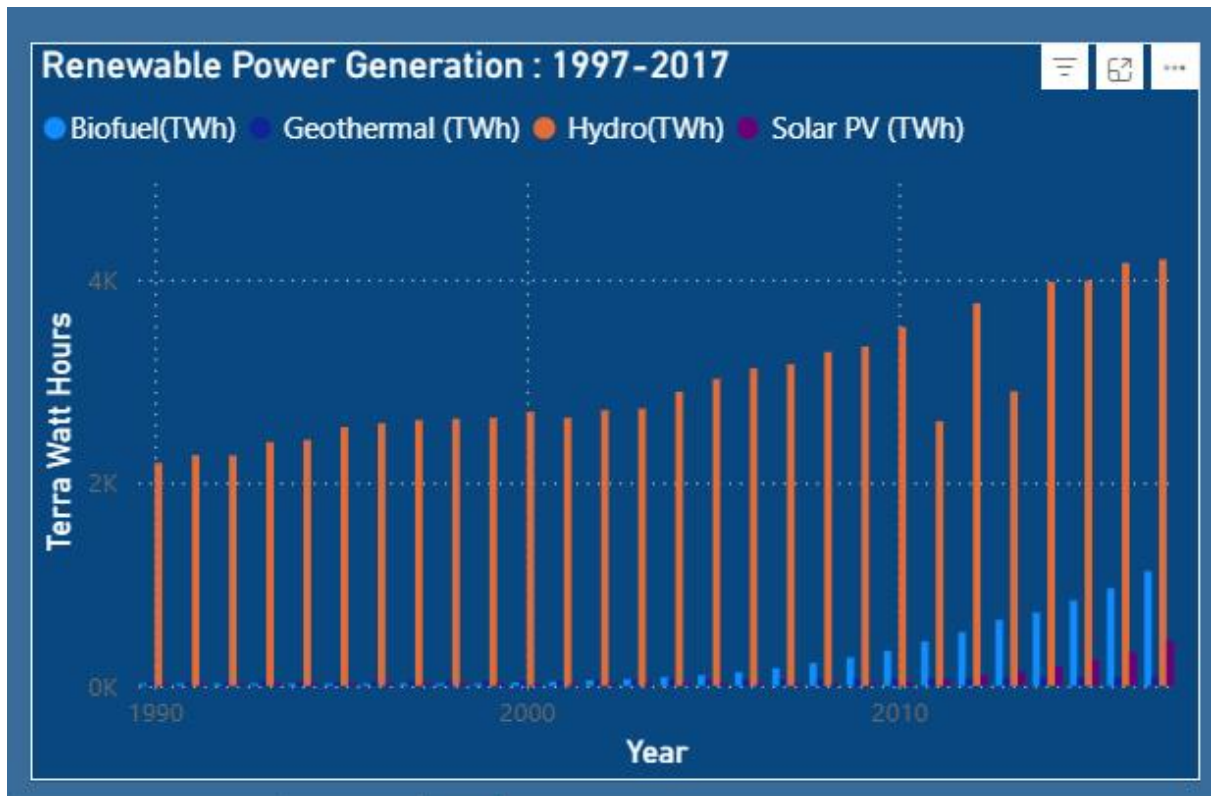
**Pie chart** showing: Coal (84%), Natural Gas (15.8%), Nuclear/Oil/Waste (<1% combined)

**Insight:** Coal dominates non-renewable at 5× gas usage



**Q4 : How has global renewable energy generation grown since 1997?**

**Visualization:** Stacked area chart showing Hydro dominates but solar shows fastest growth (400% increase)



**Q5 : How consistent or volatile is global renewable energy production across different sources and regions?**

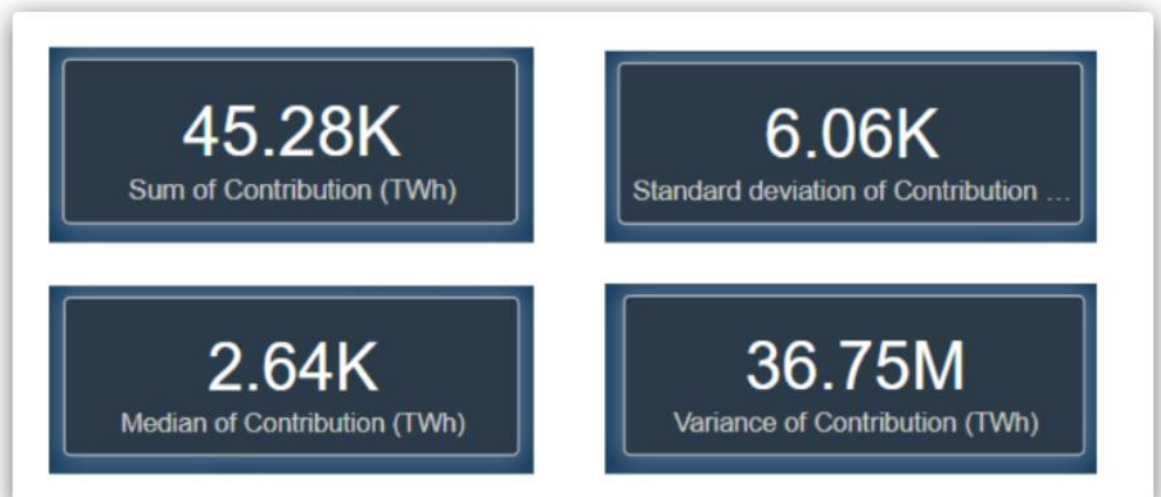
**Insight:** The high variance (36.75M) and standard deviation (6.06K) relative to the median (2.64K) suggest:

**Hydro** likely has stable production (low deviation)

**Solar/Biofuel** may show erratic growth patterns

**Geothermal** probably has minimal but consistent output

Cards- Sum, Median, Standard Deviation And Variance Of Contribution

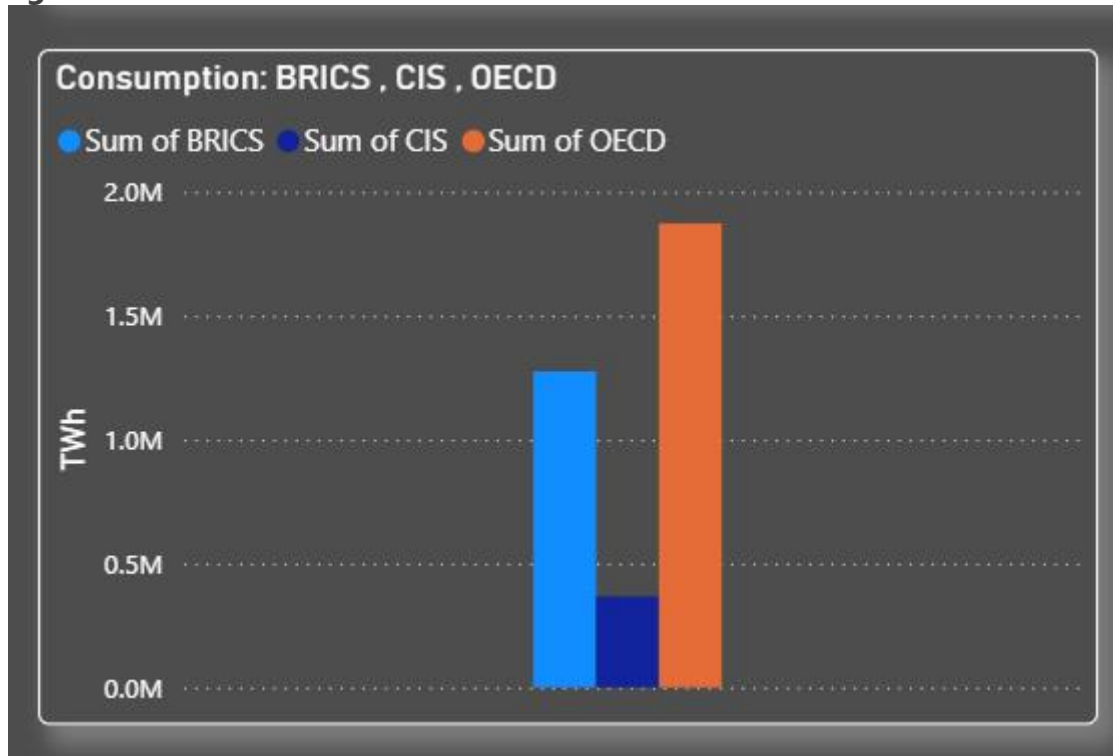


**Q6 : How does per capita energy consumption compare across blocs ?**

**Visualization:** stacked bar chart

-Each bloc's energy mix (fossil/renewable/nuclear)

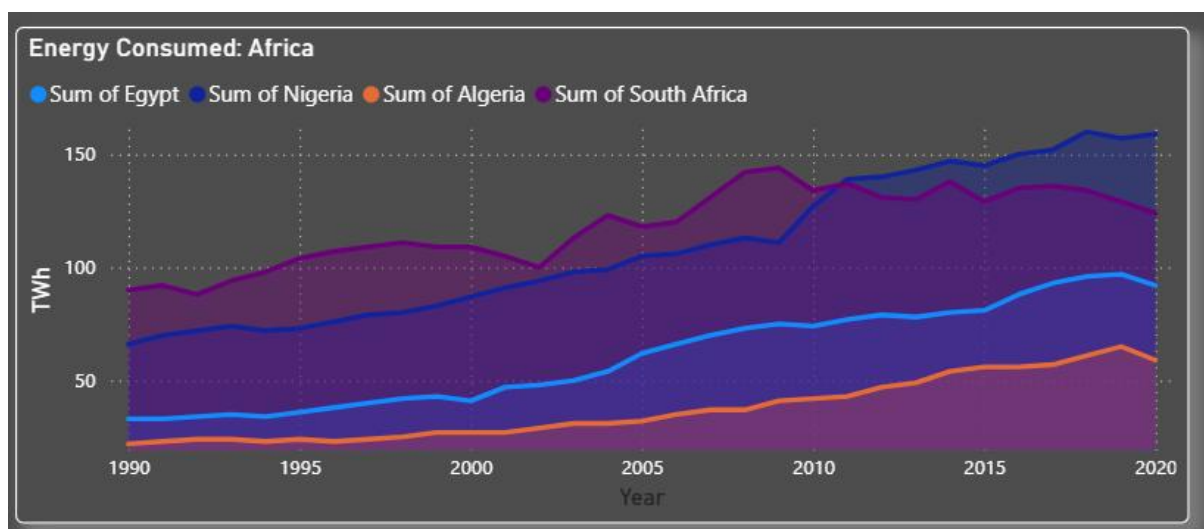
**Insight:** OECD leads at 32% renewable vs BRICS' 18%



**Q7 : How has consumption grown since 1990?**

**Visualization:** Area chart

**Insight:** Egypt's consumption grew 4× faster than Nigeria



## Q8 : What does final reports says ?

### Report on Global Energy Trends

The continent with the highest overall energy consumption is Asia, and China continues to be the top consumer of power among all the countries.

Hydro electricity has been steadily rising over the last 3 decades and continues to be a promising renewable source.

Tidal energy takes up a major share of renewable energy with 42.95% and coal is at the top of non-renewable energy with 50.72%.

Across the Top 20 countries, the Sum of Total (TWh) ranged from 12.40 to 1,819.94.

Biofuel and total Geothermal energy are positively correlated with each other.

In a span of 28 years, Biofuel ranged from 3.88(TWh) to 1,127.31(TWh), Geothermal ranged from 36.42(TWh) to 85.34(TWh), and Hydro ranged from 2,191.67(TWh) to 4,197.29(TWh)