

Business Question and Visualization Report

Date	17 Dec 2025
Team ID	PNT2022TMIDxxxxxx
Project Name	Global Energy Trends
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 Visualisation

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 visualisation that provide insights.

Sample

1. How does energy consumption vary across countries over time?

- *Visualization: Line chart showing country-wise energy consumption trends*

2. What are the energy consumption trends across different continents?

- *Visualization: Line chart showing continent-wise energy consumption*

3. Which continent has the highest average energy consumption?

- *Visualization: Card displaying continent average consumption*

4. What is the average energy consumption at the country level?

- *Visualization: Card showing country average consumption*

5. What is the distribution of non-renewable energy sources in total energy consumption?

- *Visualization: Pie chart representing non-renewable energy sources*

6. How has renewable energy generation evolved from 1997 to 2017?

- *Visualization: Clustered column chart showing renewable generation over time*

7. What are the key statistical measures of total energy contribution?

- *Visualization: Cards displaying Sum, Median, Standard Deviation, and Variance*

8. How is renewable energy generation distributed among different sources?

- *Visualization: Donut chart showing renewable energy source distribution*

9. How much energy is contributed by Geothermal, Biofuel, Hydro, and Solar PV individually?

- *Visualization: Individual cards for each renewable source*

10. How do BRICS, OECD, and CIS countries compare in energy consumption and generation?

- *Visualization: Clustered column chart comparing BRICS, OECD, and CIS*

11. How has energy consumption in Africa changed over time?

- *Visualization: Stacked area chart showing energy consumption trends in Africa*

Report Narrative (Ready to Use)

This report analyzes global energy consumption and generation patterns using multiple visualizations. It compares country-wise and continent-wise consumption trends, evaluates renewable and non-renewable energy sources, and highlights statistical variations in energy contribution. The dashboard also provides focused insights into Africa's energy consumption and compares major economic blocs such as BRICS, OECD, and CIS to support data-driven energy and sustainability decisions.

- 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).