# Business Question and Visualization Report

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| Date | 16 December 2025 |
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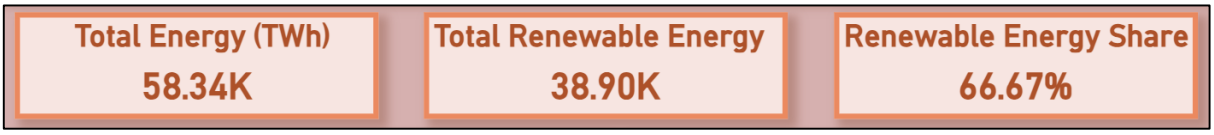
| Project Name | Global Energy Trends: A Comprehensive Analysis of Key Regions and Generation Modes |
| Maximum Marks | 5 Marks |

## Business Questions and Visualisation

This report maps business questions to specific Power BI visualizations designed to answer them using the provided datasets. Each entry below states the question, the chosen visual, the data sources and fields used, any DAX measures required, recommended interactions (slicers) and the concise insight to include beneath the screenshot.

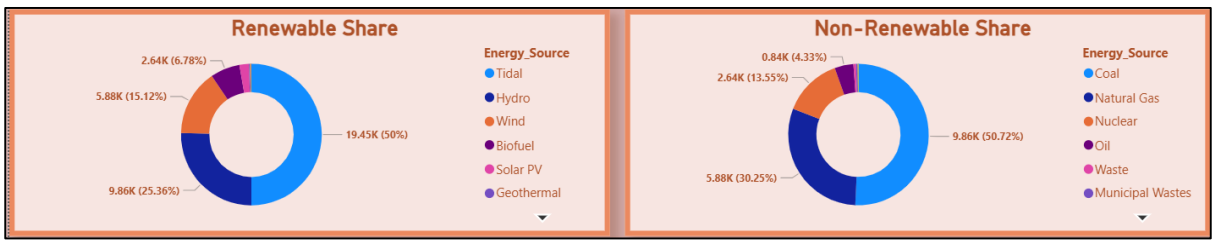
### BQ-1 What is the overall scale of global energy production and how significant is renewable energy within it?

- **Visualization Used:** KPI Cards (Total Energy, Total Renewable Energy, Renewable Energy Share)
- **Insight:** The KPIs provide an immediate snapshot of global energy production, showing that renewable energy forms a substantial and growing share of total energy generation, indicating progress toward sustainability goals.



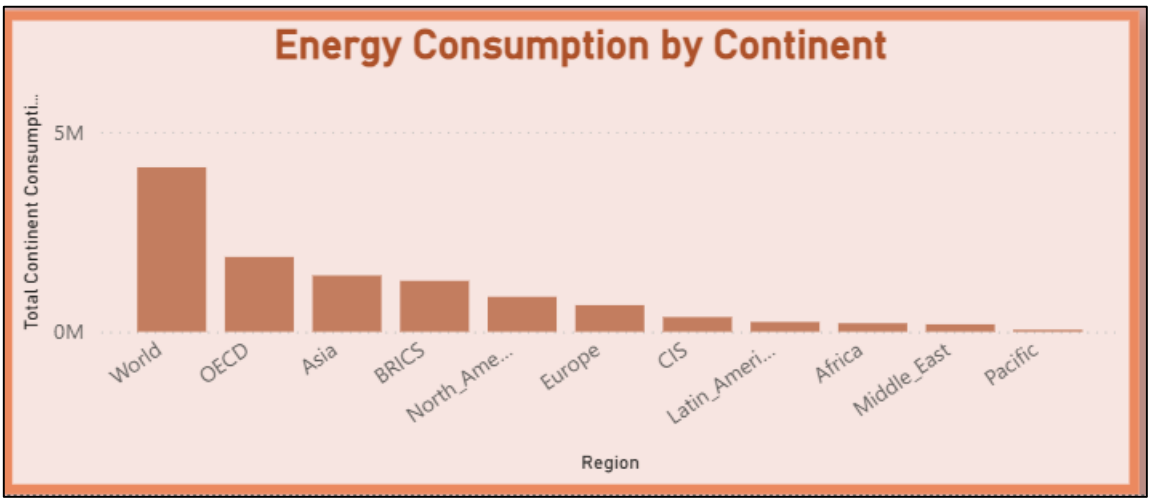

### BQ-2 How is global energy divided between renewable and non-renewable sources?

- **Visualization Used:** Renewable vs Non-Renewable Donut Chart
- **Insight:** The visualization clearly highlights the dominance of renewables in the energy mix while still emphasizing the continued dependence on non-renewable sources, reflecting an ongoing transition phase.



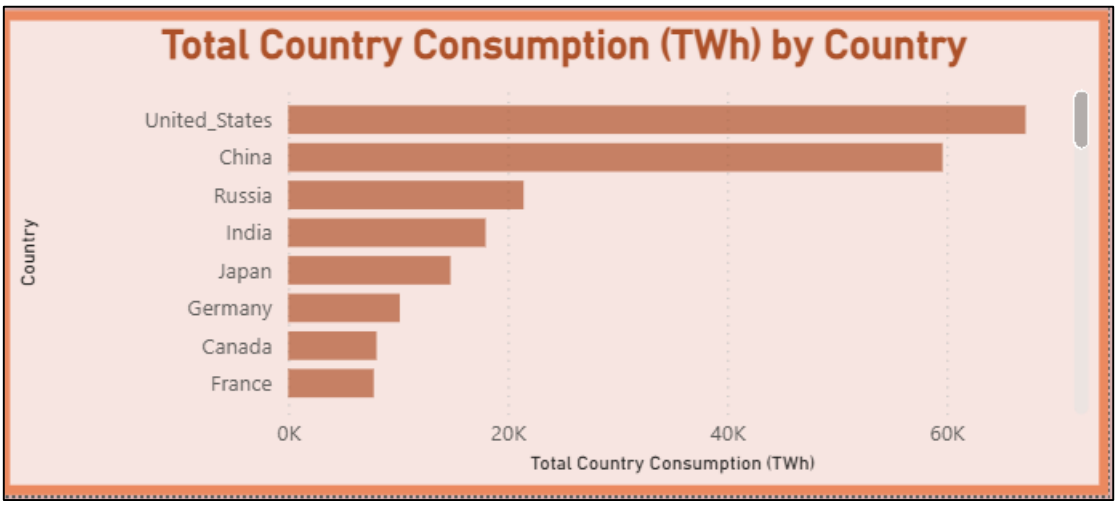
**BQ-3 Which continents consume the most energy globally?**

- **Visualization Used:** Energy Consumption by Continent (Column Chart)
- **Insight:** The chart shows that energy consumption is highly uneven across continents, with Asia and OECD regions leading consumption, driven by population size and industrial activity.



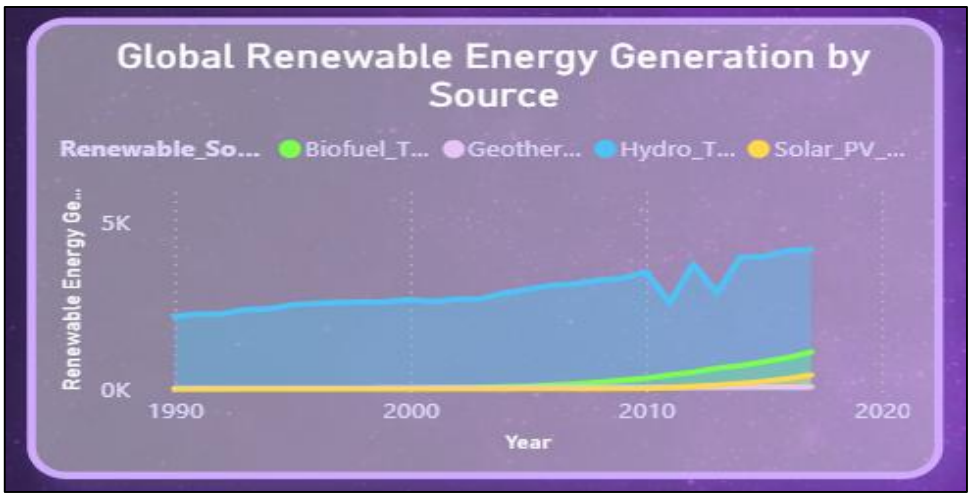

**BQ-4 Which countries are the top energy consumers worldwide?**

- **Visualization Used:** Total Country Consumption by Country (Horizontal Bar Chart - Top Countries)
- **Insight:** A small number of countries dominate global energy consumption, with the United States and China clearly leading, indicating concentrated demand and responsibility in global energy policy.



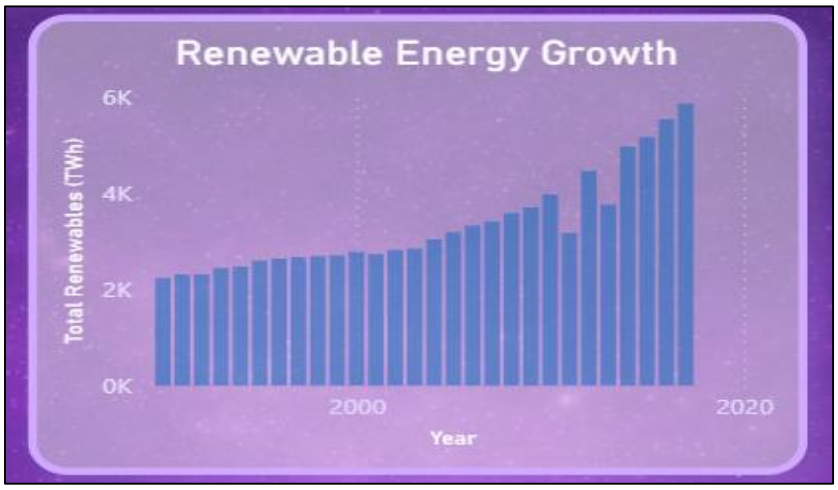
**BQ-5 How has renewable energy generation evolved over time by source?**

- **Visualization Used:** Global Renewable Energy Generation by Source (Area Chart)
- **Insight:** Hydropower has remained the dominant renewable source over time, while solar energy shows rapid growth in recent years, signaling a shift toward newer renewable technologies.



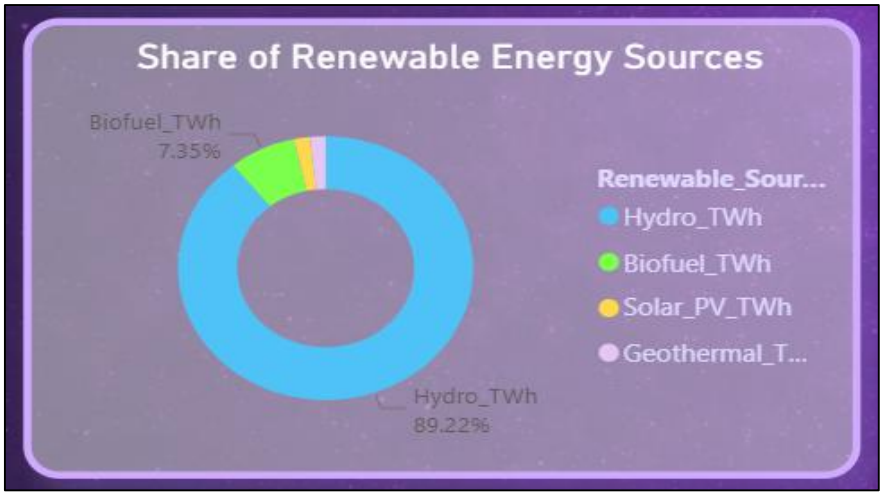

**BQ-6 Is renewable energy generation consistently increasing year over year?**

- **Visualization Used:** Renewable Energy Growth (Yearly Column Chart)
- **Insight:** The chart confirms a steady upward trend in renewable energy generation, with noticeable acceleration in later years, reflecting increased investments and supportive energy policies.



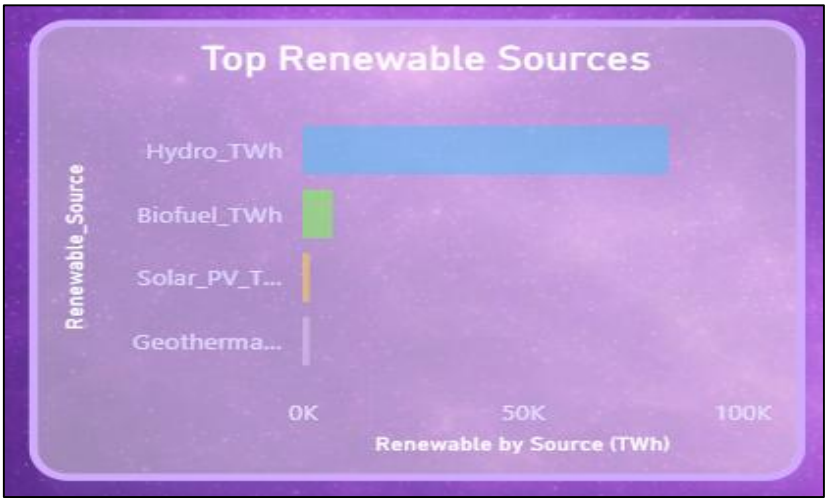
**BQ-7 What is the contribution share of different renewable energy sources?**

- **Visualization Used:** Share of Renewable Energy Sources (Donut Chart)
- **Insight:** Hydropower contributes the largest share of renewable energy, while solar, biofuel, and geothermal have smaller but steadily increasing contributions.




**BQ-8 Which renewable sources contribute the most in absolute energy generation terms?**

- **Visualization Used:** Top Renewable Sources (Bar Chart)
- **Insight:** The bar chart reinforces hydropower's dominance in absolute terms, while highlighting the comparatively lower but growing contributions from solar and bioenergy sources.



**BQ-9 How does energy consumption vary across regions and countries over time?**

- **Visualization Used:** Year Slicer with All Charts
- **Insight:** Temporal filtering reveals consistent growth in energy demand and renewables adoption, while also showing shifts in regional and country-level rankings over different periods.


**BQ-10 How can stakeholders perform focused regional or country-level analysis?**

- **Visualization Used:** Region and Country Filters (Slicers)
- **Insight:** Interactive slicers enable targeted analysis, revealing significant differences in energy mix and consumption patterns, which supports region-specific and country-specific decision-making.