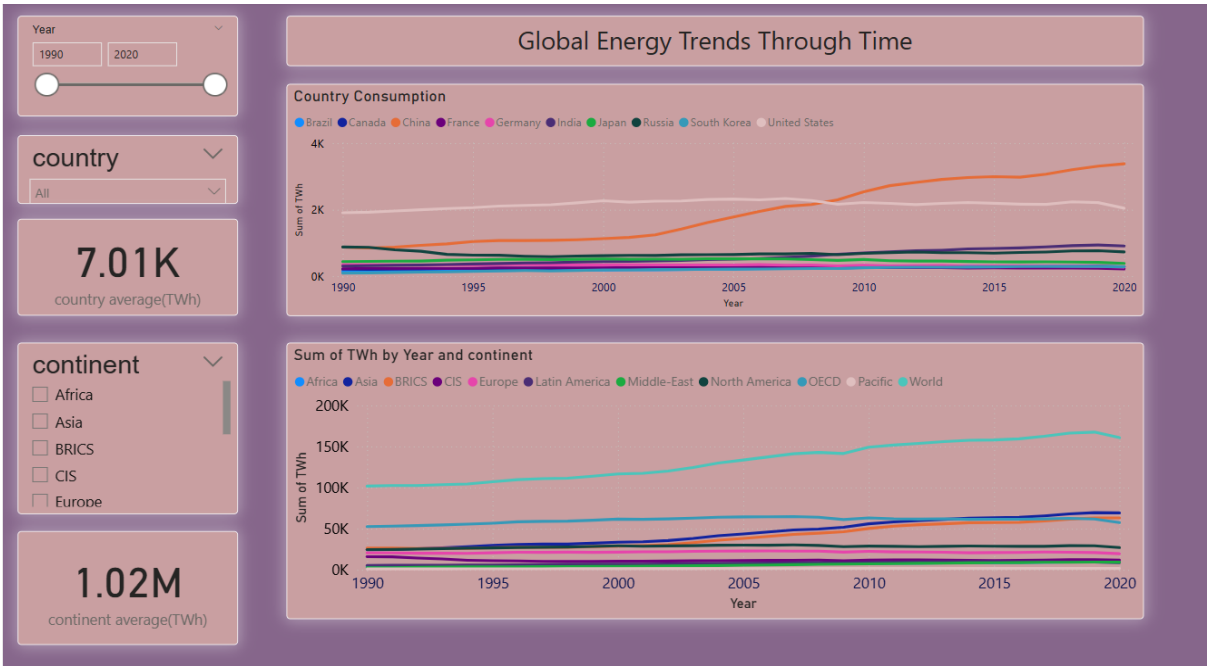
Dashboard Design

Date	01 July 2025
Team ID	NA
Project Name	Global Energy Trends: a comprehensive analysis of key regions and generation modes using Power BI
Maximum Marks	5 Marks

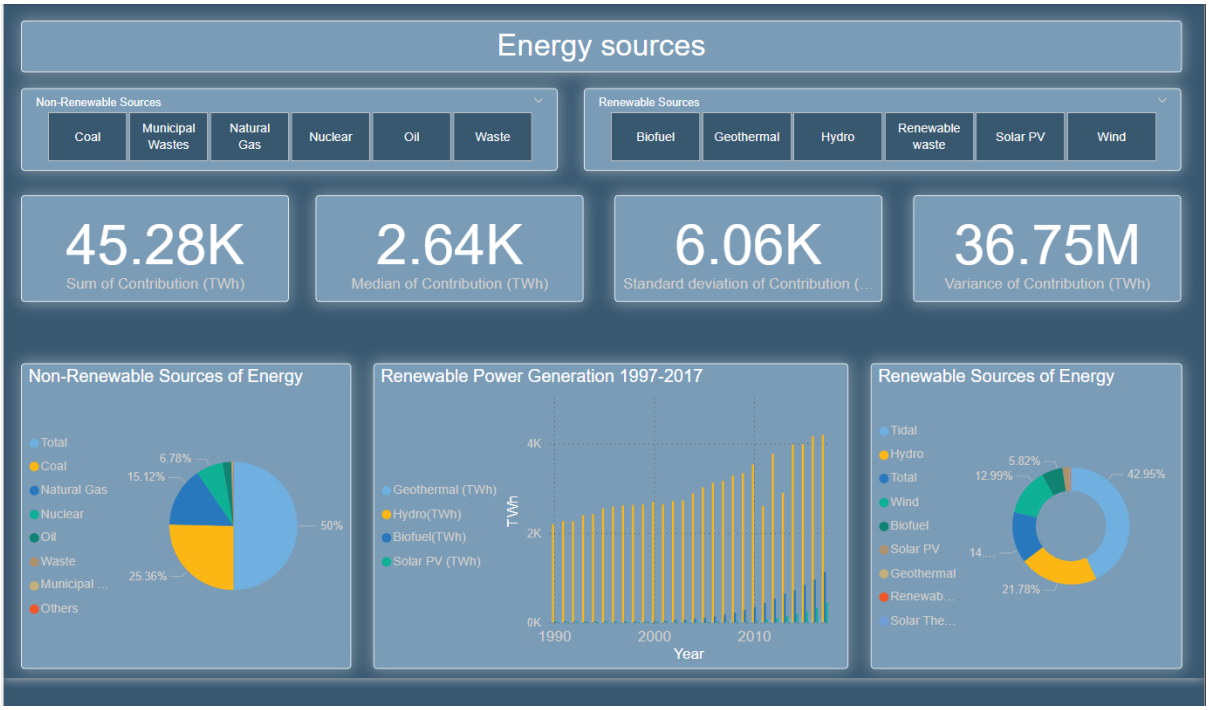
Dashboard 1:



Major Outcomes:

- China has shown the steepest increase in electricity consumption from 1990 to 2020, leading all other countries.
- North America and Asia are the top consuming continents, consistently driving global energy demand.
- Electricity consumption has increased steadily across all continents over the 30-year period.
- The average electricity consumption per country is 7.01 TWh, while the continent-level average is significantly higher at 1.02 million TWh.
- OECD and BRICS region account for a major share of global energy usage highlighting the influence of developed and developing economies.

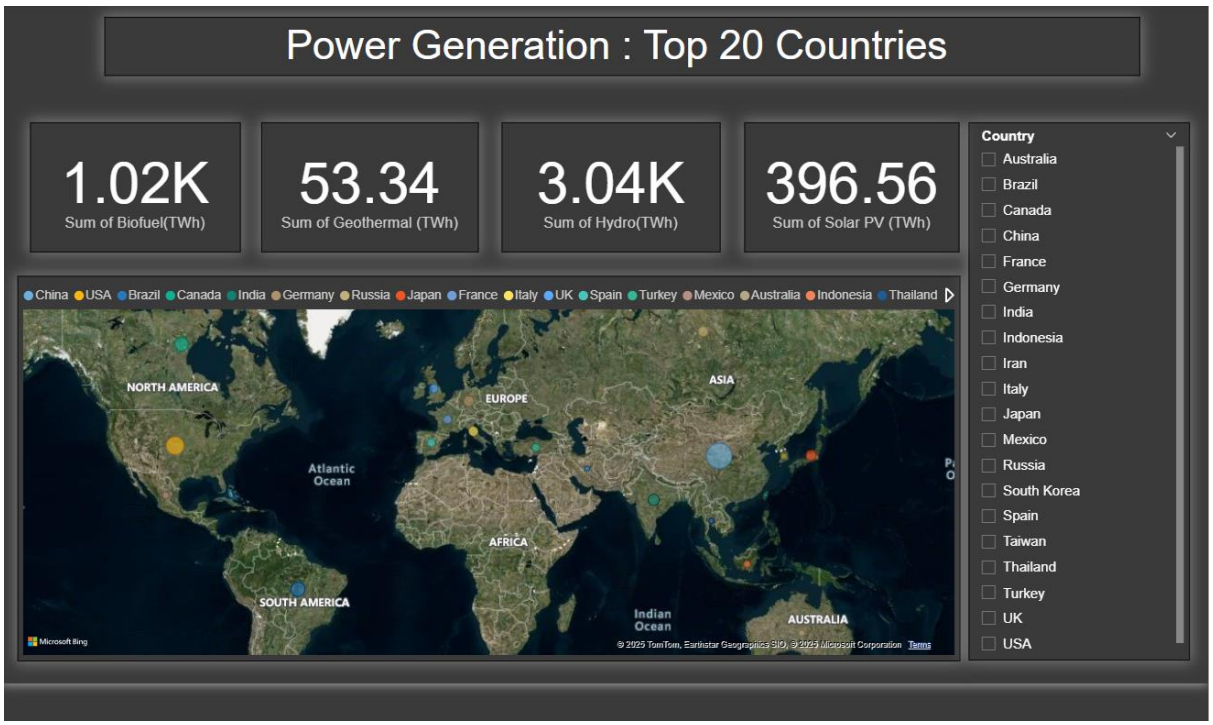
Dashboard 2:



Major Outcomes:

- Non-renewable sources like nuclear and oil are the dominant contributors, with nuclear alone accounting for 50% of non-renewable energy generation.
- The total contribution of all energy sources combined is 45.28K TWh, with a median of 2.64K TWh, indicating a skewed distribution likely driven by a few high-volume contributors.
- Among renewable sources, geothermal (21.78%), wind (14.44%), and hydro (12.99%) represent the most significant shares in the renewable energy mix.
- Renewable power generation has steadily increased from 1997 to 2017, with notable growth across solar PV, hydro, and biofuel, based on the bar chart trends.
- The standard deviation (6.06K TWh) and variance (36.75M) in total contributions reflect high variability in generation capacity across sources, both renewable and non-renewable.

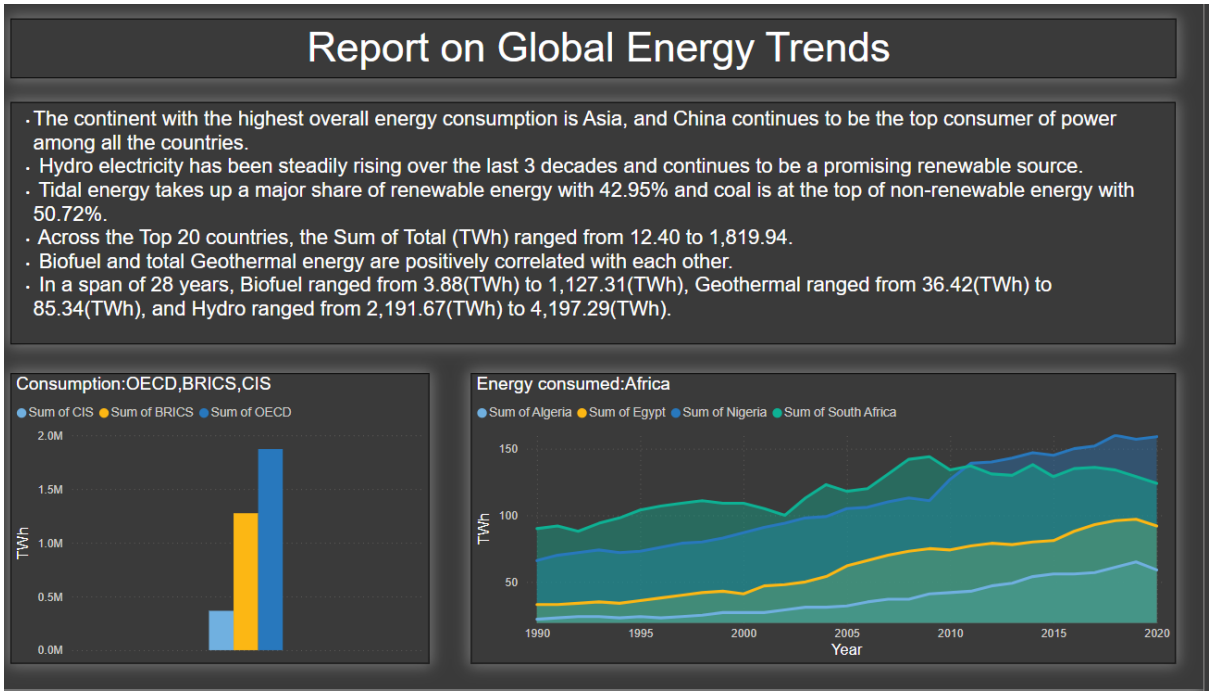
Dashboard 3:



Major Outcomes:

- China leads all countries in renewable power generation, with the highest cumulative output across Hydro, Biofuel, and Solar PV.
- Hydropower contributes the largest share among the top 20 countries, totaling 3.04K TWh, indicating its global dominance in renewable generation.
- Biofuel generation stands at 1.02K TWh across the selected countries, showing its growing role in the energy mix.
- Solar PV generation has reached 396.56 TWh, with visible contributions from technologically advanced nations like Germany, USA, and India.
- Geothermal energy generation remains limited among these countries, totaling just 53.34 TWh, suggesting geographic or infrastructural limitations in deployment.

Dashboard 4:



Major Outcomes:

- Asia leads global electricity consumption, with China consistently ranking as the top energy-consuming nation.
- Hydroelectric power has shown steady growth over three decades and remains a strong pillar among renewable sources.
- Tidal energy accounts for the largest share of renewable generation at 42.95%, while coal dominates non-renewables with 50.72%.
- Among the top 20 countries, total renewable generation ranges widely — from as low as 12.40 TWh to as high as 1,819.94 TWh.
- There's a positive correlation between biofuel and geothermal generation, both showing growth trends over the last 28 years.