DATA VISUALIZATION

B9DA106 DATA VISUALISATION (B9DA106_2425_TMD2)

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Title & Overview

Renewable Energy Analysis: Trends & Regional Insights

This Tableau visualization outlines the analysis of a publicly available renewable energy dataset(Kaggle). The focus is on understanding global capacity and production trends impacts across different renewable sources and future prediction.

Dataset Description

Source: Kaggle

Scope: Data covering multiple countries over years, including information on renewable energy capacity, production figures, types of renewable sources (solar, wind, hydro and geo biomass and other).

Purpose: To explore how renewable energy is growing worldwide and relationships that could predict the future.

Key Variables

Country: The nation in which data is recorded.

Region: The region in world in which data is recorded.

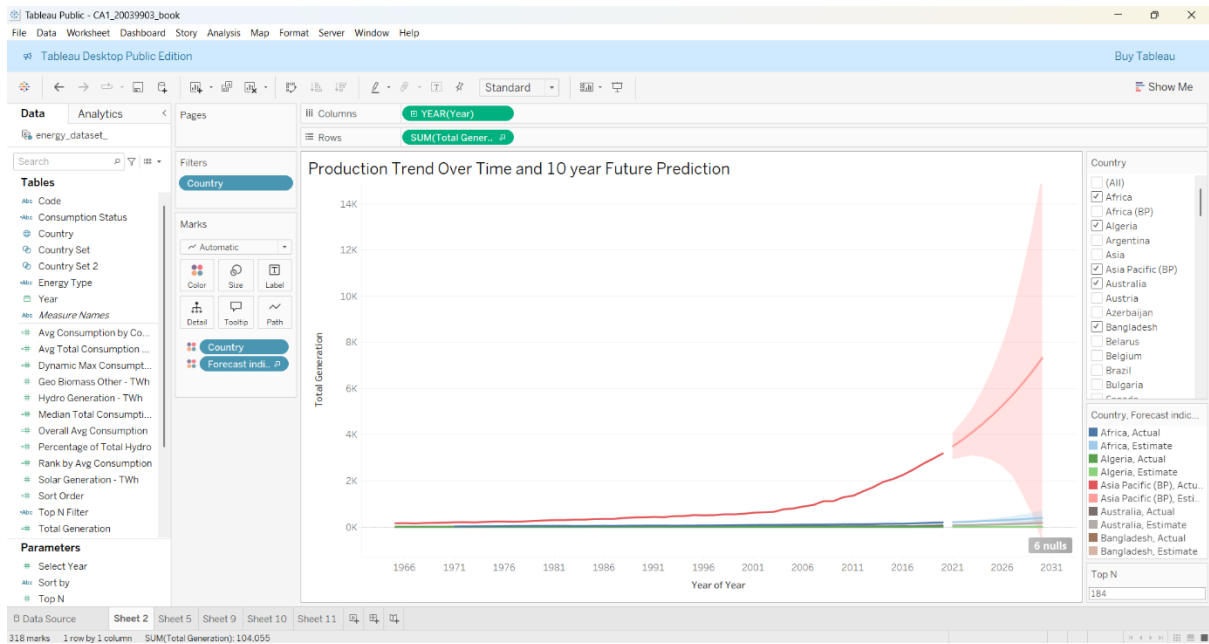**Year:** The time period for each data entry.

Energy Production (TWh): Total energy generated from renewable sources.

Energy Source Type: Categories such as Solar, Wind, Hydro and Geo Biomass and other.
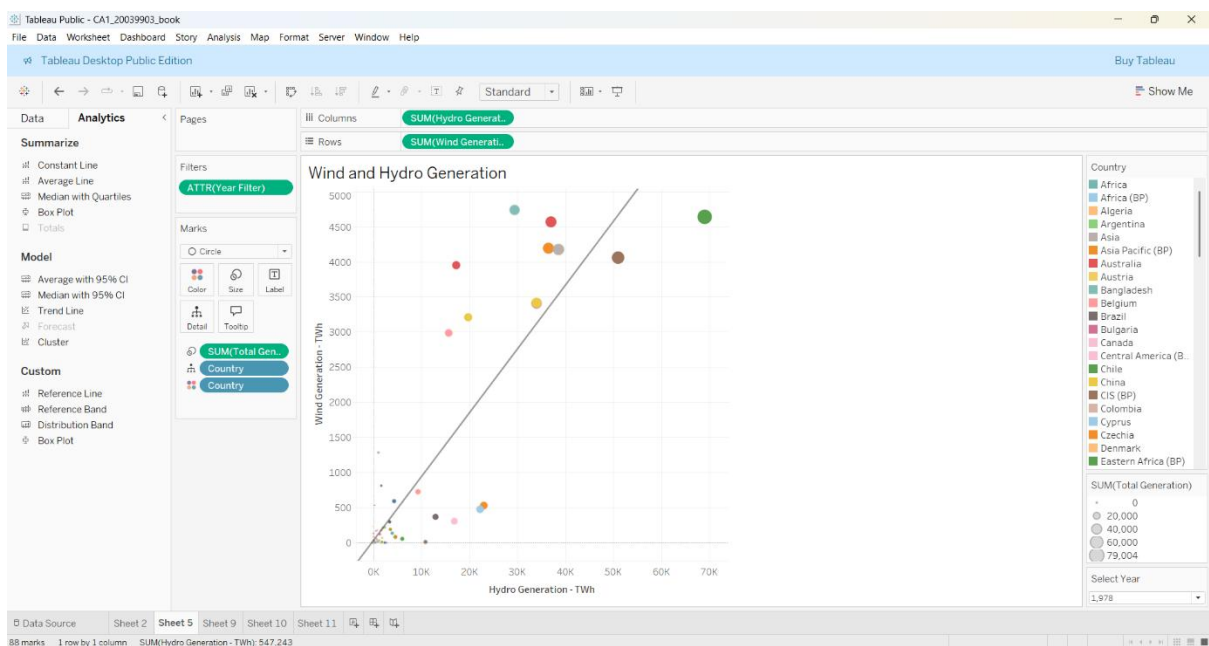
Analytical Questions

1.How have renewable energy production over year and 10 year future prediction?

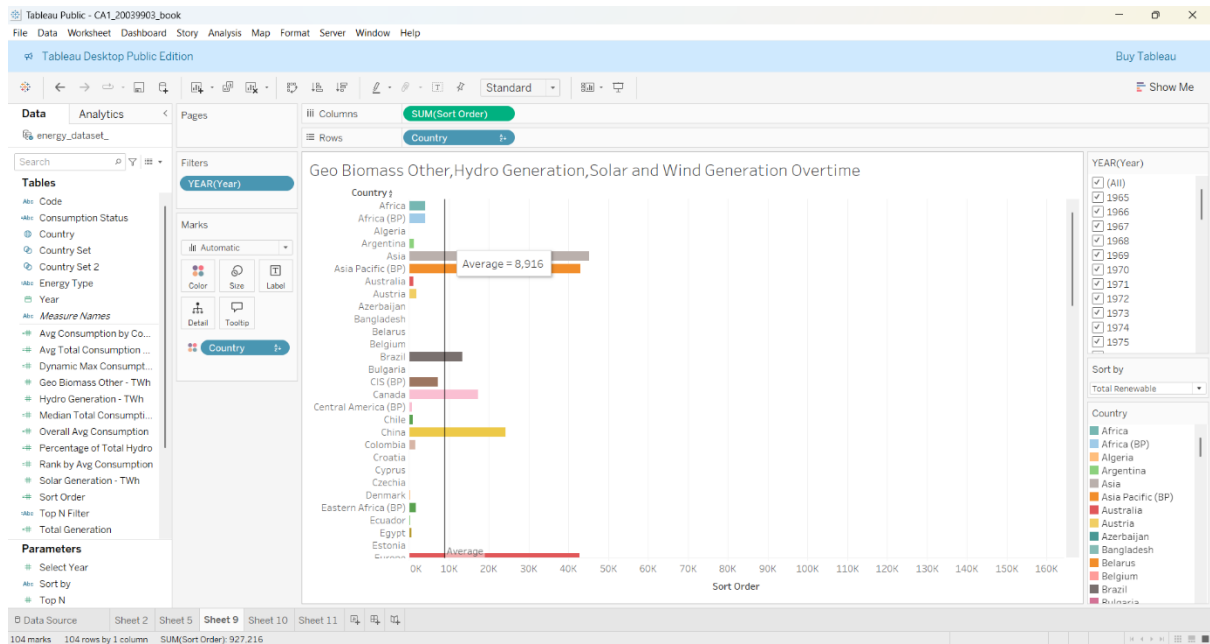*Visualization:* Line Graph

2. Is there a correlation between Wind and Hydro Generation?
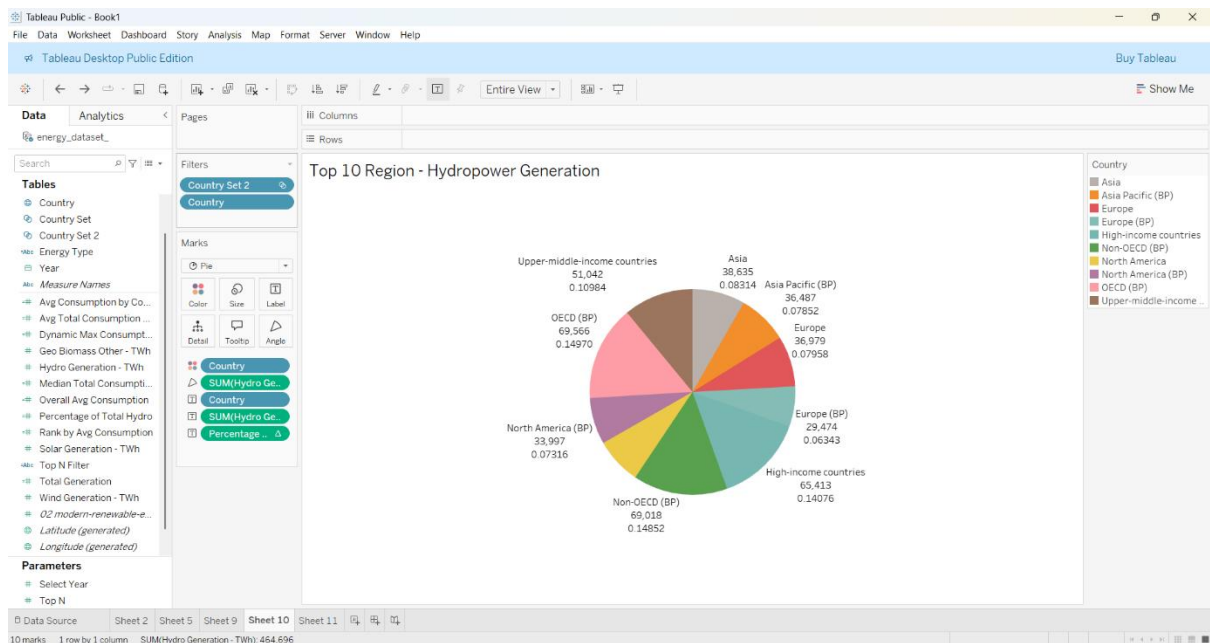
Visualization: Scatter Plot

3. **Which countries lead in renewable energy production?**

Visualization: Bar Chart

4. **What are the top 10 regions in the world for renewable energy generation?**

Visualization: Pie Chart

5. How do renewable energy trends vary ?

Visualization: Stacked Graph

Visualizations & Techniques

Each visualization is designed using Tableau to effectively answer the above questions. Key features include:

- **Quick Filters:** Allow dynamic data exploration by country, year, or energy source.

- **Sets & Parameters:** Enable comparisons between selected groups of countries or time periods.

- **Level of Detail (LOD) Calculations:** Provide deeper insights into aggregated data, ensuring accuracy in trends and correlations.

Conclusion

This analysis gives a clear look at renewable energy trends. It shows how different regions perform energy generation. The results can help guide investment strategies in renewable energy production.