DATA VISUALIZATION

B9DA106 DATA VISUALISATION (B9DA106_2425_TMD2) NEERAJ JHA

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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.

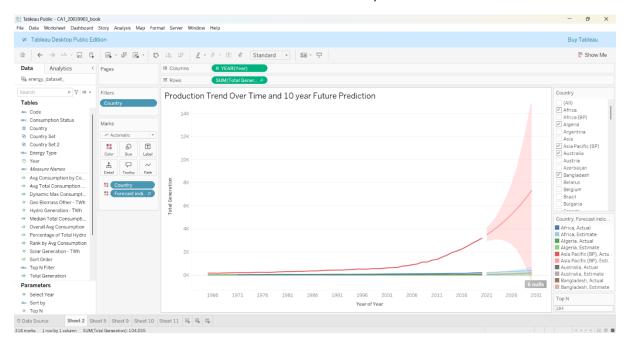
Energy Production (TWh): Total energy generated from renewable sources.

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

Analytical Questions

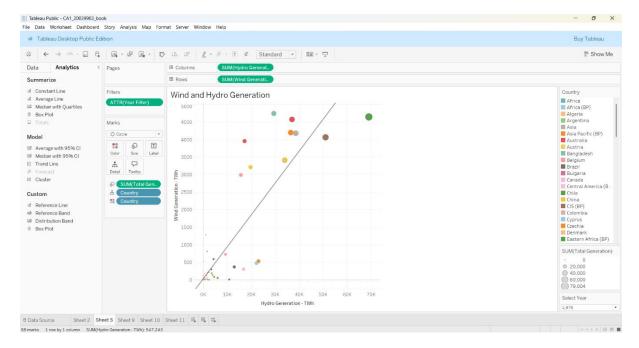
1. How have renewable energy production over year and 10 year future prediction?

Visualization: Line Graph



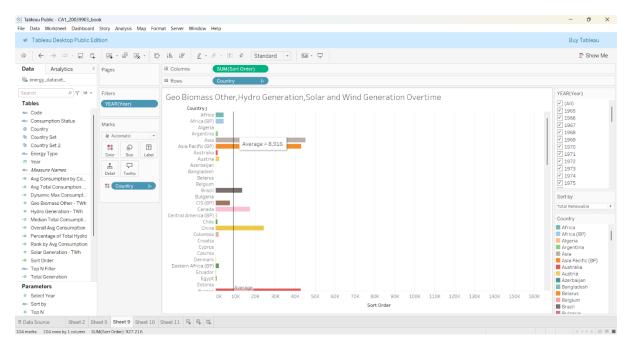
2. Is there a correlation between Wind and Hydro Generation?

Visualization: Scatter Plot



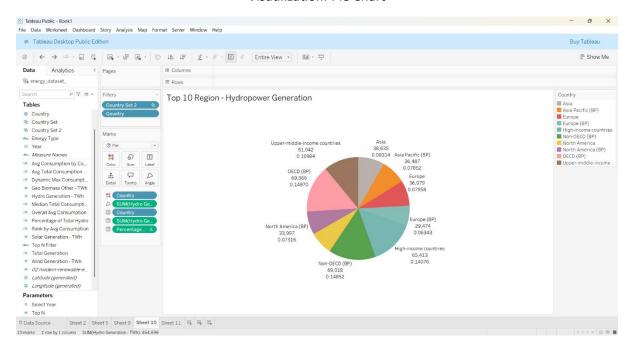
3. Which countries lead in renewable energy production?

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?

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help Buy Tableau Show Me Analytics < Pages & energy_dataset_ Renewable Energy Growth Tables 400 Ab: Energy Type 200 Ab: Measure Names ili SUM(Solar Gene.. Avg Consumption by Co... Avg Total Consumption ... Dynamic Max Consumpt... 600 III SUM(Hydro Gen... Geo Biomass Other - TWh Hydro Generation - TWh Median Total Consumpti... Overall Avg Consumption •• Rank by Avg Consumption \Box 1K # Solar Generation - TWh Top N Filter 0.5K 300 Latitude (generated) Longitude (generated)
 Measure Values

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

Parameters

□ Data Source Sheet 2 Sheet 5 Sheet 9 Sheet 10 Sheet 11 □ □ □ □

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.