**GLOBAL DATA ON SUSTAINABLE ENERGY (2000–2020)**

**About Dataset**

**Description**

Uncover this dataset showcasing sustainable energy indicators and other useful factors across all countries from 2000 to 2020. Dive into vital aspects such as electricity access, renewable energy, carbon emissions, energy intensity, financial flows, and economic growth. Compare nations, track progress towards Sustainable Development Goal 7, and gain profound insights into **global energy consumption patterns** over time.

**Key Features:**

* **Entity**: The name of the country or region for which the data is reported.
* **Year**: The year for which the data is reported, ranging from 2000 to 2020.
* **Access to electricity (% of population)**: The percentage of population with access to electricity.
* **Access to clean fuels for cooking (% of population)**: The percentage of the population with primary reliance on clean fuels.
* **Renewable-electricity-generating-capacity-per-capita**: Renewable energy capacity per person
* **Financial flows to developing countries (US $)**: Aid and assistance from developed countries for clean energy projects.
* **Renewable energy share in total final energy consumption (%)**: Percentage of renewable energy in final energy consumption.
* **Electricity from fossil fuels (TWh)**: Electricity generated from fossil fuels (coal, oil, gas) in terawatt-hours.
* **Electricity from nuclear (TWh)**: Electricity generated from nuclear power in terawatt-hours.
* **Electricity from renewables (TWh)**: Electricity generated from renewable sources (hydro, solar, wind, etc.) in terawatt-hours.
* **Low-carbon electricity (% electricity)**: Percentage of electricity from low-carbon sources (nuclear and renewables).
* **Primary energy consumption per capita (kWh/person)**: Energy consumption per person in kilowatt-hours.
* **Energy intensity level of primary energy (MJ/$2011 PPP GDP)**: Energy use per unit of GDP at purchasing power parity.
* **Value\_co2\_emissions (metric tons per capita)**: Carbon dioxide emissions per person in metric tons.
* **Renewables (% equivalent primary energy)**: Equivalent primary energy that is derived from renewable sources.
* **GDP growth (annual %)**: Annual GDP growth rate based on constant local currency.
* **GDP per capita**: Gross domestic product per person.
* **Density (P/Km2)**: Population density in persons per square kilometer.
* **Land Area (Km2)**: Total land area in square kilometers.
* **Latitude**: Latitude of the country's centroid in decimal degrees.
* **Longitude**: Longitude of the country's centroid in decimal degrees.

**Potential Use cases**

* **Energy Consumption Prediction:** Predict future energy usage, aid planning, and track SDG 7 progress.
* **Carbon Emission Forecasting:** Forecast CO2 emissions, support climate strategies.
* **Energy Access Classification:** Categorize regions for infrastructure development, understand sustainable energy's role.
* **Sustainable Development Goal Tracking:** Monitor progress towards Goal 7, evaluate policy impact.
* **Energy Equity Analysis:** Analyze access, density, and growth for equitable distribution.
* **Energy Efficiency Optimization:** Identify intensive areas for environmental impact reduction.
* **Renewable Energy Potential Assessment:** Identify regions for green investments based on capacity.
* **Renewable Energy Investment Strategies:** Guide investors towards sustainable opportunities.

Creating a Power BI dashboard for global data on sustainable energy from 2000 to 2020 involves several key steps. Here's a structured approach to help you design a comprehensive and insightful dashboard:

**1. Data Sources**

Gather relevant datasets, including:

* **Global Renewable Energy Capacity**: Data on solar, wind, hydro, and other renewable sources.
* **CO2 Emissions**: Annual emissions data to analyze the impact of renewable energy adoption.
* **Energy Consumption**: Total energy consumption by type (renewable vs. non-renewable).
* **Investment in Renewable Energy**: Data on global investments in sustainable energy initiatives.

**2. Data Preparation**

* **Clean the Data**: Ensure your data is free from inconsistencies, duplicates, and errors.
* **Transform the Data**: Convert data types as needed, create calculated columns (e.g., growth rates), and establish relationships between tables.

**3. Key Metrics to Include**

* **Total Renewable Energy Capacity (2000–2020)**: Yearly growth in gigawatts (GW).
* **CO2 Emissions Trends**: Comparison of emissions against renewable energy capacity.
* **Investment Trends**: Annual global investments in renewable energy technologies.
* **Energy Mix**: Percentage of energy derived from renewable vs. non-renewable sources.

**4. Visualization Elements**

* **Line Charts**: Show trends over time for renewable capacity and CO2 emissions.
* **Bar Charts**: Compare investments in different types of renewable energy.
* **Pie Charts**: Illustrate the energy mix for specific years.
* **Maps**: Display geographic data showing countries leading in renewable energy adoption.

**5. Interactive Features**

* **Filters**: Allow users to filter by year, region, or energy type.
* **Tooltips**: Provide additional context when hovering over data points.
* **Drill-throughs**: Enable users to click on a data point for more detailed information.

**6. Dashboard Layout**

* **Header**: Title and date range of the data.
* **Main Visuals**: Place key metrics at the top (e.g., total renewable capacity and emissions).
* **Secondary Visuals**: Include investment trends and detailed breakdowns below.
* **Summary Section**: Provide key takeaways or insights based on the visualizations.

**7. Insights and Analysis**

* Highlight trends in renewable energy adoption.
* Analyze the relationship between renewable energy growth and CO2 emissions reduction.
* Identify key regions or countries that have made significant progress.

**8. Share and Collaborate**

* Publish the dashboard to Power BI Service for easy sharing with stakeholders.
* Consider embedding it in reports or presentations for broader visibility.