**Project Report**

**Title: Global Energy Trends: Renewable and Non-Renewable Energy**

**1. Introduction**

This project analyzes global energy trends, focusing on renewable and non-renewable energy sources using Power BI. The primary aim is to derive actionable insights from energy generation data collected over the years, enabling stakeholders to understand trends, contributions, and disparities in energy usage across countries and sources. The analysis includes metrics such as renewable energy trends, country-wise contributions, and a comparison between renewable and non-renewable energy generation.

**2. Objectives**

The objectives of this project are:

1. To analyze renewable energy generation trends from 1997 to 2017.
2. To compare renewable energy contributions across the top 20 countries.
3. To calculate the total energy generation from renewable sources.
4. To evaluate the proportional contribution of renewable energy sources.
5. To visualize global trends in renewable versus non-renewable energy.
6. To identify key contributors to renewable and non-renewable energy.

**3. Methodology**

**3.1 Data Collection**

Data on energy generation was collected from publicly available CSV files, including:

* Renewable energy generation from 1997 to 2017.
* Total renewable energy contributions.
* Top 20 countries' energy consuming countries data.
* Top 20 countries' energy consuming Continents data.
* Non-Renewable energy generation from 1997 to 2017.

**3.2 Tools and Software**

* Microsoft Power BI for data visualization.
* Microsoft Excel/CSV files for data preparation and cleaning.

**3.3 Data Preparation**

The datasets were cleansed and standardized into structured columns, including:

* Year
* Country
* Continents
* Renewable Energy Source (Hydro, Biofuel, Solar PV, Geothermal, Fossil Fuels, etc.)
* Total Energy Consumption
* Non- Renewable Energy Source (Nuclear, Oil, Natural gas, Coal etc.)

**4. Results**

1. Renewable energy has grown steadily from 1997 to 2017, with significant contributions from Hydro and Solar PV.
2. Country-level analysis shows that developed nations lead in renewable adoption, with emerging economies showing rapid growth.
3. The share of non-renewable energy has been decreasing globally, indicating a shift towards sustainability.
4. Total energy generation data reveals Hydro as the most utilized renewable source globally.

**5. Conclusion**

This project underscores the global transition towards renewable energy and the critical role of data visualization in understanding energy trends. Using Power BI, actionable insights were derived that emphasize the growing adoption of renewable sources, the countries driving this change, and the declining dependence on non-renewable energy. These insights can inform energy policies and investment strategies for a sustainable future.