A PROJECT REPORT

on Global Energy Trends A Comprehensive Analysis of Key Regions and Generation Modes using Power BI

Submitted for fulfilment of

Experiential Project Based Learning (EPBL)

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I want to take a moment to express my sincere appreciation for the dedication, effort, and teamwork each of you has shown throughout this project. Your commitment to excellence, problem-solving skills, and collaboration have truly made a difference.

Every challenge we faced was met with determination, and your ability to support one another has been inspiring. It is because of your hard work that we have been able to achieve great results. I am grateful for the contributions each of you has made, and I look forward to continuing this journey together.

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"Thank you for your hard work and for being such an amazing team"!

Project Report Format:

1.Project Flow.

2. Data Collection & Extraction from Database.

Data collection is the process of gathering and measuring information on variables of interest,

in an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

2.1. Downloading the dataset.

2.2. Understand the data.

Data contains all the meta information regarding the columns described in the Excel files.

3. Data Preparation.

Preparing the data for visualization involves cleaning the data to remove irrelevant or,

missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring that the data is accurate and complete.

3.1. Prepare the Data for Visualization.

3.2. Data Transformation.

4. Data Visualization.

Data visualization is the process of creating graphical representations of data to help people understand information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualization can help people identify patterns, trends, and outliers quickly in the data.

4.1. Number of unique visualizations.

4.2. Country wise consumption

4.3. Continent Consumption

4.4. Continent Average

4.5. Country Average

4.6. Non-Renewable Sources

4.7. Renewable Generation 1997-2017

4.8. Cards- Sum, Median, Standard Deviation and Variance of Contribution

4.9. Renewable Sources

4.10. Cards - Geothermal, Biofuel, Hydro and Solar PV

4.11. Report Narrative

4.12. BRICS, OECD and CIS

4.13. Energy Consumption in Africa

5. Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an,

organized and easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data. They are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

5.1. Responsive and Design of Dashboard

6. Report

A report is a way of presenting data and analysis in a narrative format, with the goal of making information more engaging and easier to understand. It typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of media, such as reports, presentations, interactive visualizations, and videos.

6.1. Design of Report

7.Performance Testing

For the aforementioned energy project focusing on incorporating renewable energy sources and optimizing energy usage, performance testing plays a critical role in ensuring the effectiveness and reliability of the implemented systems. Performance testing involves assessing various aspects, including the

efficiency of energy generation from renewable sources, the effectiveness of energy distribution through smart grids or microgrids, and the accuracy of data analytics algorithms in identifying optimization opportunities.

7.1. Application of Data Filters

Selections within the data allow users to filter data based on individual fields or dimensions. Users can choose specific values within a field to include or exclude from analysis. Complex filters based on predefined conditions and logic can also be created.

7.2. Use of Measures/Calculated Columns

Power BI allows the creation of reusable filter objects like Measures, and Calculated Columns which can simplify the process of applying consistent filters across multiple visualizations and dashboards.

7.3. Number of Graphs/ Visualizations

8. Project Demonstration & Documentation

9. Customer Journey Map:

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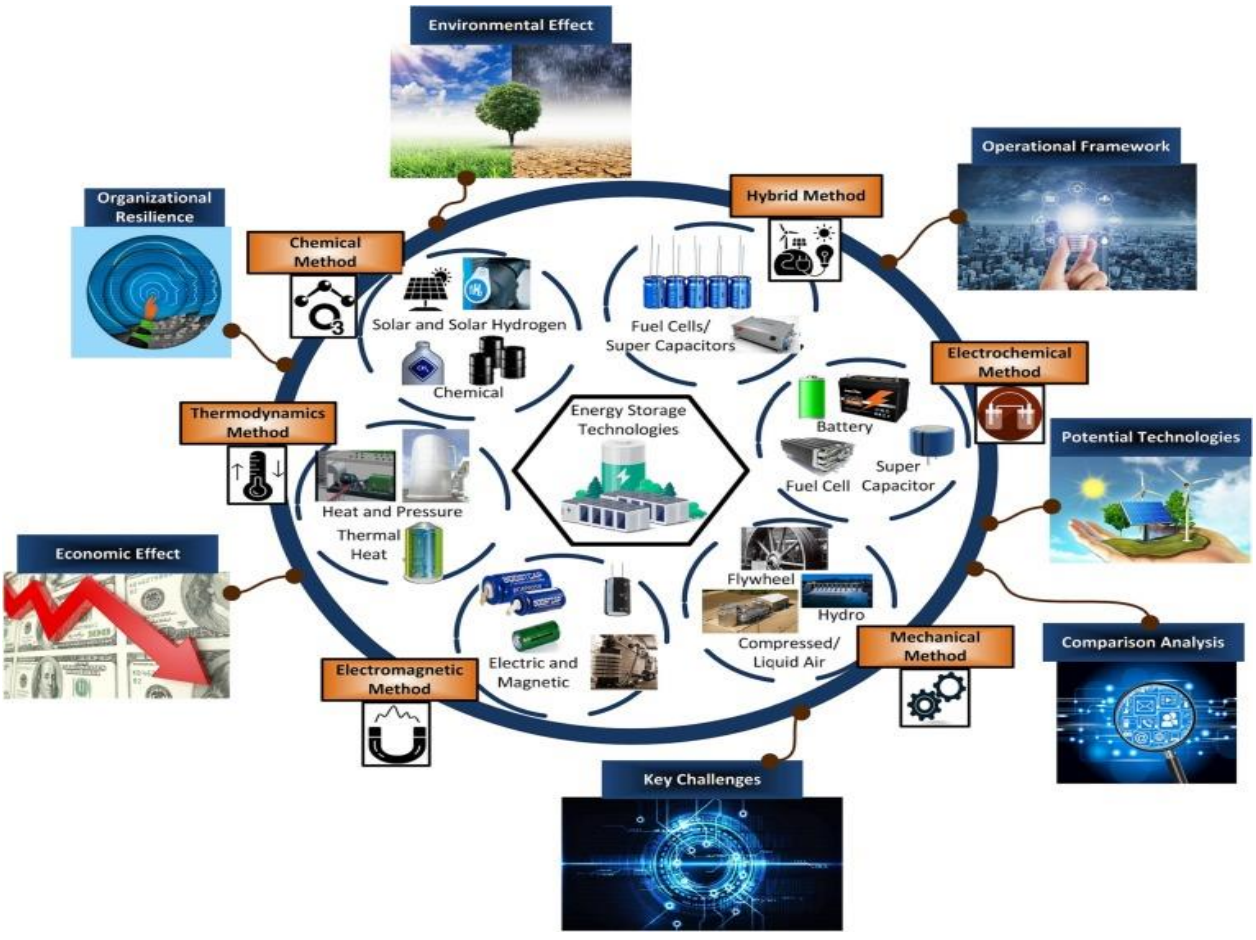

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