# Project Initialization and Planning Phase

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| Date | 30th July 2025 |
| Team ID | xxxxxx |
| Project Title | Global Energy Trends: A Comprehensive Analysis of Key Regions and Generation Modes using Power BI |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

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| **Project Overview** | |
| Objective | To analyze global energy trends using Power BI with a focus on regional variations and generation modes (renewables vs non-renewables), and to demonstrate how data visualization and analytics can support sustainable energy initiatives in urban, industrial, and rural contexts. |
| Scope | Includes data visualization and insights from smart grids in urban areas, industrial energy management, and rural electrification using renewables. |
| **Problem Statement** | |
| Description | Global energy systems face challenges in efficiency, sustainability, and equitable access—especially due to dependence on fossil fuels and uneven energy distribution. |
| Impact | Solving these problems enables reduced emissions, better energy planning, improved quality of life, and supports global sustainability goals. |
| **Proposed Solution** | |
| Approach | Use Power BI to analyze and visualize data from diverse energy |

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| | scenarios to identify trends, inefficiencies, and opportunities for renewable integration. |
| Key Features | -Real-time analytics from smart meters and grids<br>-Predictive insights for industrial energy use<br>-Data-driven rural electrification models<br>-Interactive Power BI dashboards for decision-making |

**Resource Requirements**

| **Resource Type** | **Description** | **Specification/Allocation** |
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| **Hardware** | | |
| Computing Resources | GPU specifications<br>CPU specifications | Integrated Intel UHD Graphics<br>Intel 11th Gen Core i3 |
| Memory | RAM specifications | 8 GB |
| Storage | Disk space for data, models, and logs | 274GB |
| **Software** | | |
| Frameworks | Power BI frameworks | Power Query, DAX, Data Model Framework |
| Libraries | Additional libraries | Power BI Visuals, Office 365 Integration |
| Development Environment | Tools used in Power BI | Power BI Desktop, Power BI Service, Power BI Report Builder, Git/GitHub |
| **Data** | | |
| Data | Source, size, format | Source: https://www.kaggle.com/datasets/jamesvandenberg/renewable-power-generation<br><br>Size: 15.22 Kb<br>Format: CSV File |