Project Design Phase

Proposed Solution Template

Date: 15 February 2025 Team ID: PNT2025TMID00584 Project Name: Global Energy Trends: A Comprehensive Analysis of Key Regions and Generation Modes using Power BI Maximum Marks: 2 Marks	
Parameter	**Description**
Problem Statement (Problem to be solved)	The project addresses the challenge of analyzing global energy trends, particularly focusing on renewable energy integration and its impact on CO2 emissions and grid stability. Energy policy analysts struggle with scattered data sources, while power grid operators require accurate forecasting models to ensure operational efficiency. A centralized dashboard using Power BI will provide real-time insights and predictive analytics to aid decision-making.
Idea / Solution Description	Our solution involves creating an interactive Power BI dashboard that consolidates global energy data from various sources, offering insights into energy consumption, production trends, CO2 emissions, and the impact of government policies. The dashboard will incorporate visualizations such as heat maps, pie charts, and trend graphs to facilitate easy interpretation. Additionally, predictive modeling will be implemented to forecast energy demand and renewable energy growth.
Novelty / Uniqueness	- Integration of real-time energy market data with historical trends for better decision-making. - Use of advanced forecasting models to predict renewable energy trends and their impact on grid stability. - Centralized data visualization platform tailored for policymakers, analysts, and grid operators.

Social Impact / Customer Satisfaction	- Helps energy analysts and policymakers make data-driven decisions to support the transition to sustainable energy. - Enhances power grid reliability by improving demand forecasting and renewable energy integration. - Supports global net-zero goals by providing transparent insights into CO2 emission reductions. - Empowers organizations with actionable intelligence to optimize energy resource allocation.
Business Model (Revenue Model)	- **Subscription-Based Access:** Premium features for corporate users and policymakers. - **Consulting Services:** Providing custom energy analysis reports and insights. - **API Licensing:** Offering access to real-time energy analytics for third-party applications. - **Sponsorships & Partnerships:** Collaboration with energy organizations and government agencies.
Scalability of the Solution	- The dashboard can be expanded to include additional datasets such as climate change impacts, energy price fluctuations, and emerging technologies in the renewable sector. - The predictive analytics model can be enhanced with AI-driven insights for better forecasting. - The platform can be deployed across different industries, including government agencies, energy corporations, and research institutions. - Potential integration with IoT devices for real-time energy consumption monitoring.