Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	18th March 2025
Team ID	PNT2025TMID06806
Project Name	Global Energy Trends: A Comprehensive Analysis of Key Regions and Generation Modes using Power BI
Maximum Marks	4 Marks

Analysis:

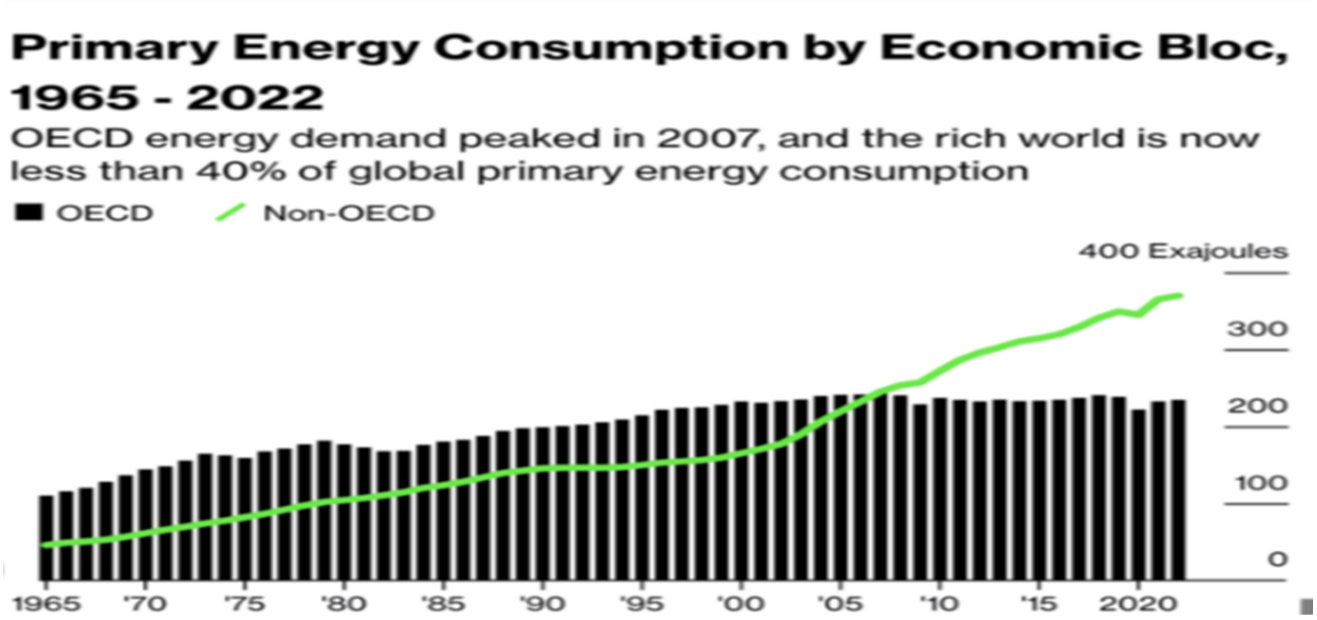

Table-1 : Analysis of global energy trends:

S.No	Component	Description	Technology
1.	Energy Sources	Different sources of energy production Fossil Fuels, Renewables (Solar, Wind, Hydro, etc.), Nuclear	Fossil Fuels, Renewable (Solar, Wind, Hydro, etc.), Nuclear
2.	Energy Consumption	How energy is consumed globally	Industrial, Residential, Commercial, Transportation
3.	Renewable Energy Growth	Increase in renewable energy adoption	Solar PV, Wind Turbines, Hydropower Expansion
4.	Energy Storage	Storage solutions for stable energy supply	Lithium-ion Batteries, Hydrogen Storage, Pumped Hydro
5.	Grid Infrastructure	Systems for energy distribution	Smart Grids, Microgrids, Transmission Lines
6.	Energy Efficiency	Technologies to reduce energy wastage	LED Lighting, High-Efficiency Appliances, Insulation
7.	Carbon Emissions	Impact of energy production on CO_2 emissions	Carbon Footprint, Emission Reduction Strategies
8.	Government Policies	Regulations and incentives for energy transition	Carbon Taxes, Renewable Energy Subsidies, Net-Zero Goals
9.	Emerging Technologies	Innovations in the energy sector	Nuclear Fusion, Biofuels, AI in Energy Management
10.	Climate Change Impact	Effects of energy trends on climate	Global Warming, Extreme Weather, Sea Level Rise
11.	Investment & Financing	Funding and economic trends in energy sector	Green Bonds, Private Investment, Public Funding

Table-2: Application Characteristics:

S.No	Characteristics	Description	Examples
1.	Renewable Energy Adoption	Trends in adoption of renewable energy sources	Solar, Wind, Hydropower, Geothermal, Biomass
2.	Energy Security	Ensuring stable and reliable energy supply	Diversified energy mix, Strategic Reserves, Decentralized Power Grids
3.	Energy Efficiency	Measures to improve energy use and reduce waste)	Smart Meters, LED Lighting, High-Efficiency Appliances, Industrial Heat Recovery
4.	Grid Modernization	Advances in power grid management for efficiency and resilience	Smart Grids, AI-Based Energy Management, Microgrids
5.	Energy Storage Solutions	Technologies used to store excess energy for stability	Lithium-ion Batteries, Pumped Hydro, Hydrogen Storage, Solid-State Batteries