Future Electricity Consumption – Tableau Project

1. Brainstorming

- How much electricity will be consumed in the next 5–10 years?
- Which sectors consume the most electricity (Residential, Industrial, Commercial)?
- How does population growth affect electricity demand?
- What is the impact of renewable energy adoption?
- How does seasonal variation affect power consumption?
- Data sources: Government electricity boards, smart meters, weather data, population statistics.
- Factors: Urbanization, industrialization, climate change, EV adoption, government policies.
- Tools used: Tableau for visualization and forecasting, Excel/CSV datasets.

2. Problem Statement

Electricity demand is increasing rapidly due to population growth, urbanization, and technological advancements. Power generation companies and governments must accurately predict future electricity consumption to prevent power shortages, avoid overproduction, plan infrastructure development, and promote sustainable energy use. Inaccurate forecasting can lead to economic losses, blackouts, and inefficient energy distribution. Objective: To analyze historical electricity consumption data and build a predictive visualization dashboard in Tableau that forecasts future electricity demand for better planning and decision-making.

3. Empathy Map

- Target Users: Government energy planners, electricity board managers, policy makers, smart city administrators.
- What They See: Rising electricity demand, increasing outages, growth in EVs, climate impact.
- What They Hear: Public complaints, sustainability pressure, renewable energy targets.
- What They Think: How to prevent shortages? Is infrastructure sufficient? Are forecasts accurate?
- What They Say: Need data-driven planning and 10-year forecasts.
- Pain Points: Demand spikes, limited resources, budget constraints, weather uncertainty.
- Gains: Accurate forecasting, reduced blackouts, better infrastructure planning, sustainable management.

4. Expected Tableau Dashboard Features

- Year-wise consumption trends
- 5–10 year forecast visualization
- Sector-wise consumption analysis
- Region-wise power usage
- Peak demand identification

5. Project Outcome

- Improves power distribution planning
- Supports sustainable energy policies
- Reduces electricity shortages
- Enables smart city development