# Plugging into the Future: An Exploration of Electricity Consumption Patterns Using Tableau

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📊 Data Flow Diagram
Below is a simple and clear Data Flow Diagram (DFD) structure you can use for your project presentation or report.
🔹 Level 0 – Context Diagram (High-Level View)
Main Process:
Electricity Consumption Analysis System (Tableau)
External Entities:
⚡ Power Distribution Companies
🏢 Government / Energy Department
👩‍💻 Analyst / Researcher
🌍 Consumers
Data Flows:
Raw electricity usage data
Tariff rates
Regional consumption reports
Policy inputs
Analytical dashboards & insights
🔹 Level 1 – Detailed Data Flow Diagram
🔄 Step-by-Step Data Flow
1️⃣ Data Collection
Sources:
Smart meters
Utility billing systems
Weather databases
Population datasets
⬇
2️⃣ Data Storage
Raw data stored in Database / Data Warehouse
⬇
3️⃣ Data Cleaning & Processing
Remove missing values
Standardize formats
Aggregate by:
Time (daily, monthly, yearly)
Region
Sector (residential, commercial, industrial)
⬇
4️⃣ Data Visualization (Tableau)
Connect Tableau to processed dataset
Create:
Time-series trend analysis
Peak demand analysis
Regional comparison dashboards
Forecasting models
⬇

5️⃣ Output & Decision Making
Interactive dashboards
Energy efficiency insights
Policy recommendations
Consumption prediction
🔹 Data Stores in the System
📂 Electricity Consumption Database
📂 Tariff & Pricing Data
📂 Weather & Demographic Data
📂 Processed Analytics Dataset
🔹 Tools Used
🗄️ Database (MySQL / SQL Server / Excel / CSV)
📊 Tableau (for dashboard & visualization)
🧮 Python / Excel (optional preprocessing)

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