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

Date	22 February 2026
Team ID	LTVIP2026TMIDS35939
Project Name	Plugging into the Future: An Exploration of Electricity Consumption Patterns Using Tableau
Maximum Marks	4 Marks

Technical Architecture:

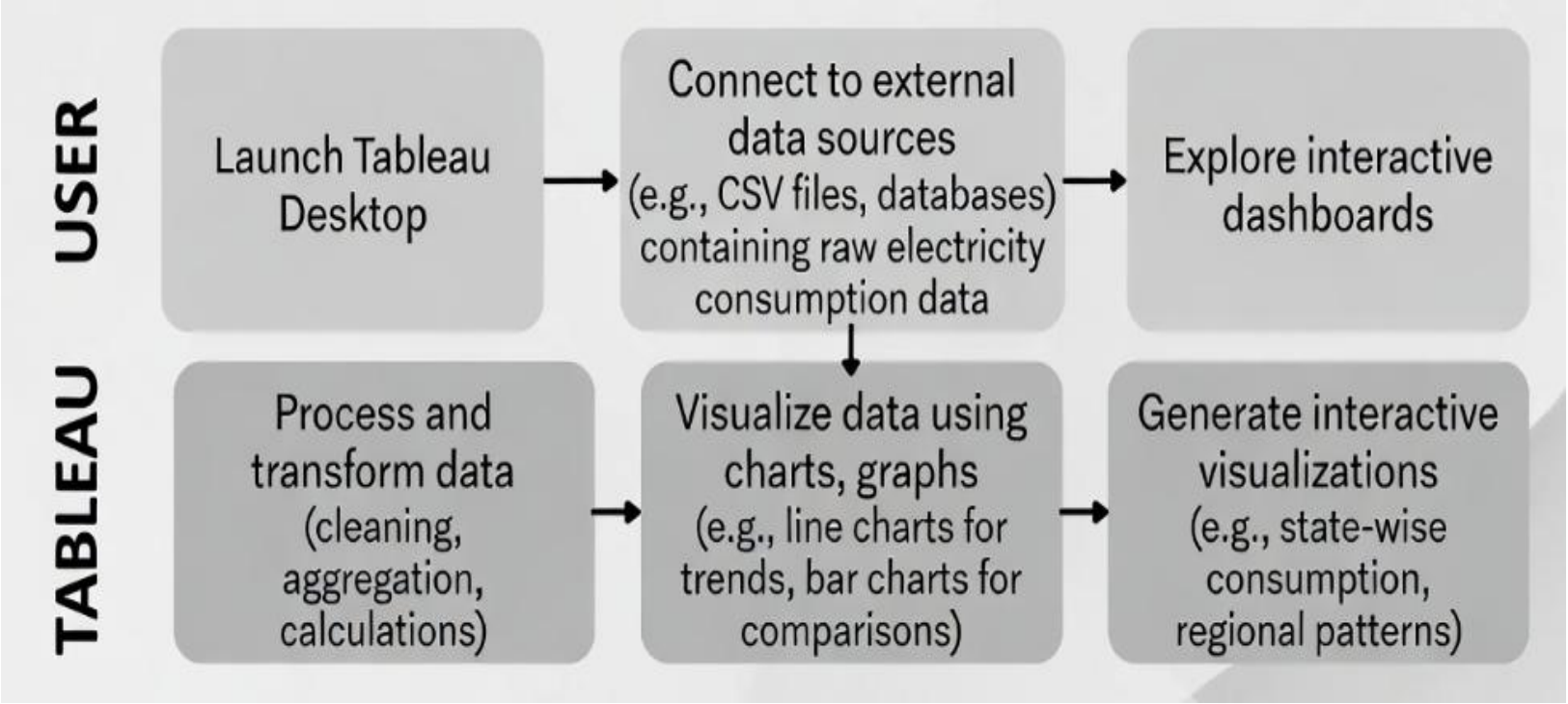

Table-1 : Components & Technologies:

	Component	Description	Technology
1.	User Interface	Interactive dashboards with charts, maps, filters for exploring consumption	patternsTableau Desktop / Tableau Public (built-in VizQL for rendering)
2.	Application Logic-1	Data connection, extraction, cleaning, calculated fields (e.g., YoY change, regional totals)	Tableau Data Engine + Calculated Fields (Tableau formula language)
3.	Application Logic-2	Visualization creation (line charts for trends, bar charts for top/bottom states, geographic maps)	Tableau Sheets & Dashboards (drag-and-drop)
4.	Application Logic-3	Interactive features (filters by year/region, tooltips, drill-down)	Tableau Filters, Parameters, Actions
5.	File Storage	Storage of raw data files and Tableau workbook (.twb / .twbx)	Local Filesystem (CSV/Excel files)
6.	Infrastructure (Server / Cloud)	Local development on personal computer; optional publish to Tableau Public cloud for sharing.	PC (Windows/Mac) + Tableau Public (free cloud hosting for published vizzes)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Tableau Public is free; core Tableau is proprietary but Desktop Public Edition is used	Tableau Public (free version)
2.	Security Implementations	Local file-based; no user auth needed. Published dashboards on Tableau Public are public/view-only	Tableau Public sharing permissions (public by default)

S.No	Characteristics	Description	Technology
3.	Scalable Architecture	Single-user desktop tool; scales to many viewers via Tableau Public publish (no server management needed)	Tableau Desktop + Public (cloud-hosted viewing)
4.	Availability	Always available locally; published dashboards available 24/7 on Tableau Public (hosted by Salesforce)	Tableau Public cloud infrastructure
5.	Performance	Fast in-memory processing with Tableau Data Engine; suitable for datasets up to millions of rows; no caching/CDN needed for this project size	Tableau Hyper Engine (in extracts), optimized rendering