Plugging in to the Future: An Exploration of Electricity consumption patterns

Introduction

- **Overview**:

Energy consumption is the total amount of energy required for a given process and is measured in kilowatt hours (kWh). The annual electricity consumption per capita serves as an important measure of a country's electric power development.

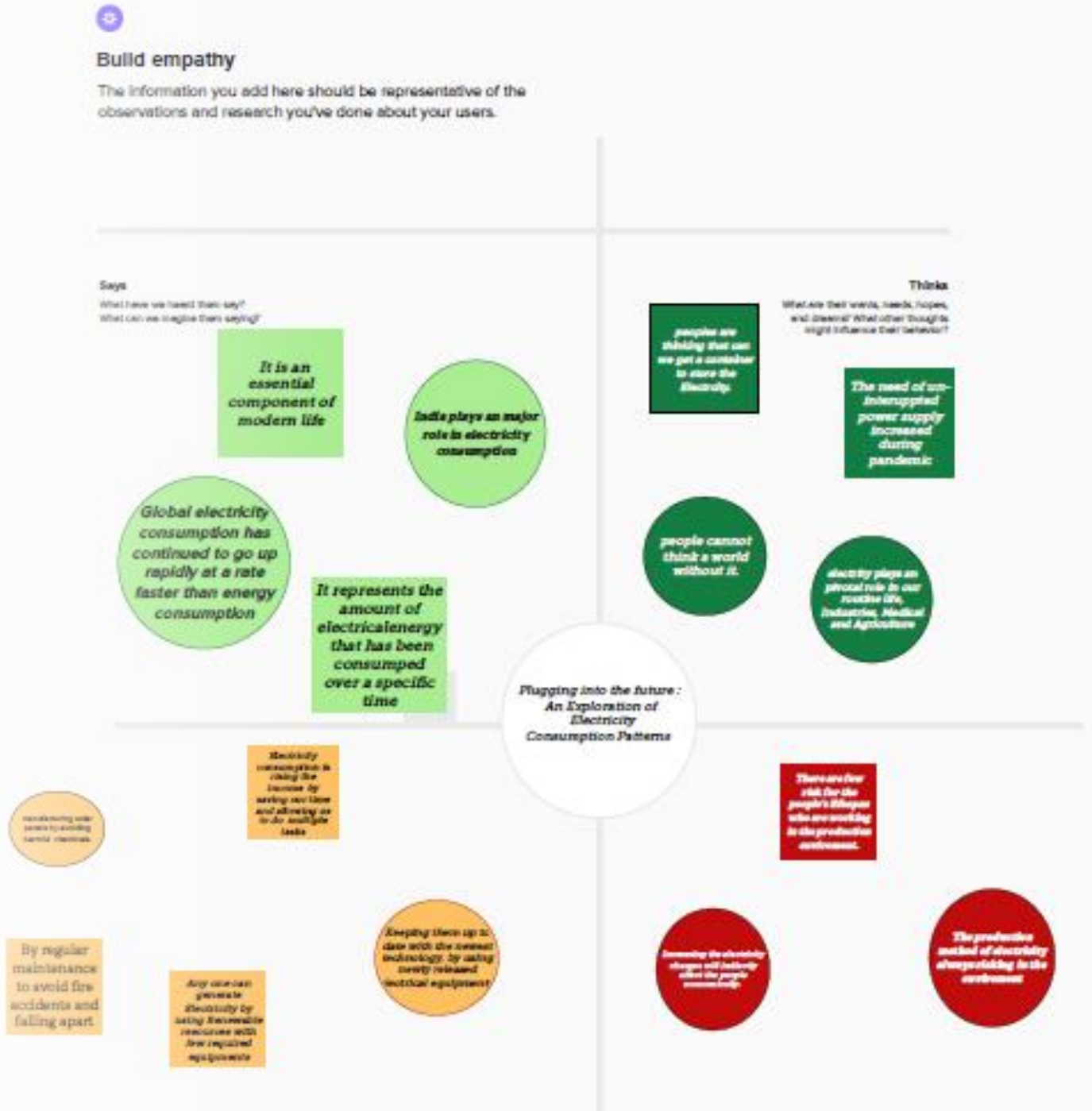
In this project we are showing the UI visualization of Electricity consumption in India by using Tableau.

Purpose:

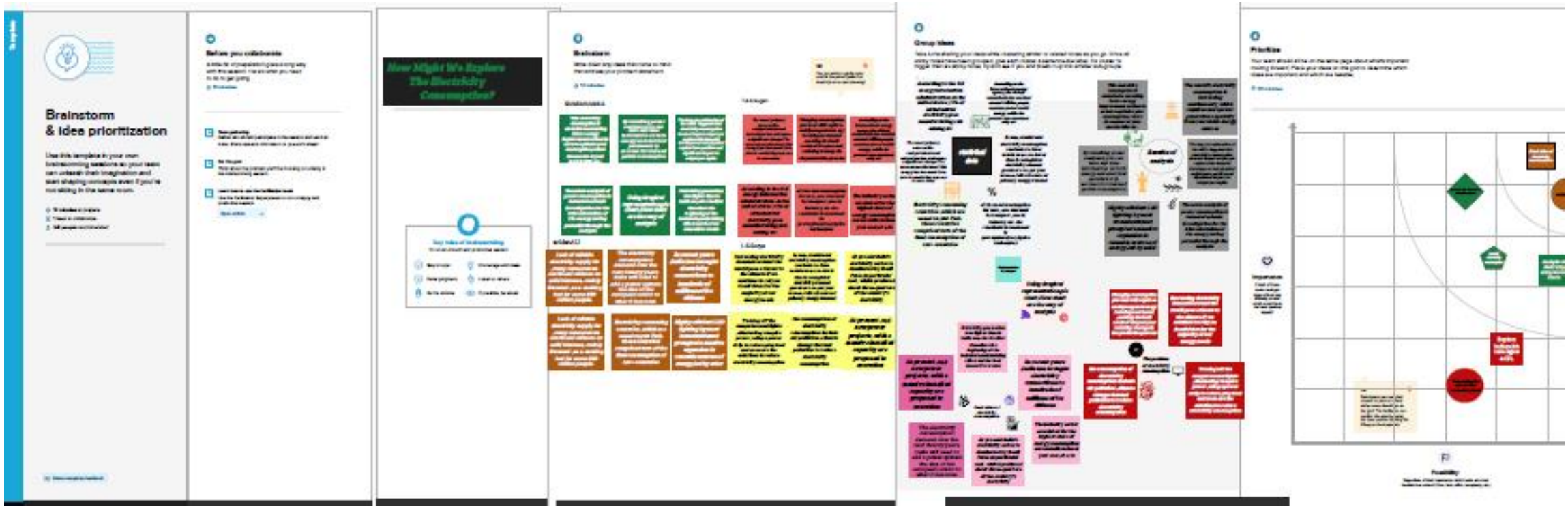
- By this UI visualization we can get a better understanding of Electrcity Usage across different regions with in a specific amount of duration.
- This UI visualization will help the government sector to analyze per Capita Electricity Use.
- The year wise comparison of Electricity usage is giving the detailed information about the massive transition.
- Analyzing how much energy the facility consumes lets you quantify the energy resources associated with the service, and identify and correct consumption inefficiencies

Problem Definition and Design Thinking

Empathy Map:

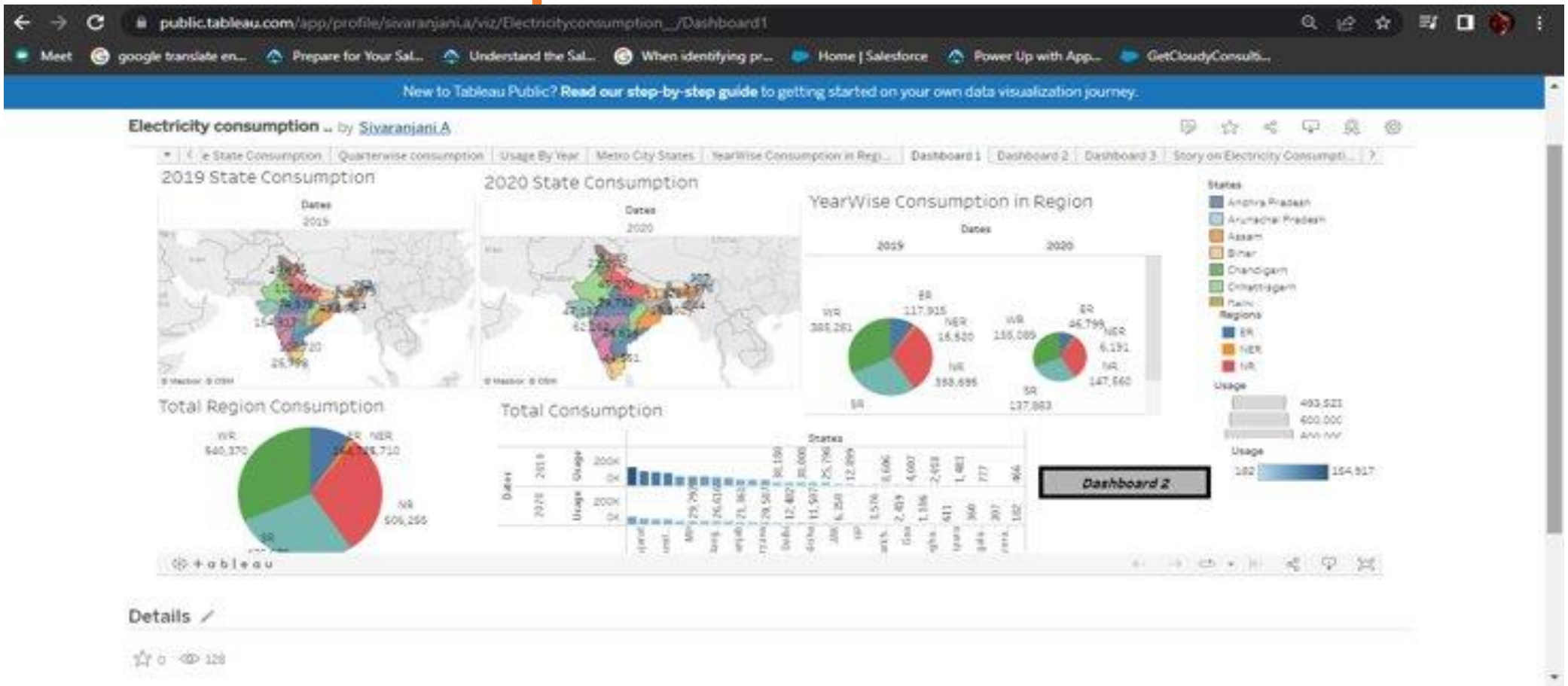


Brainstorming



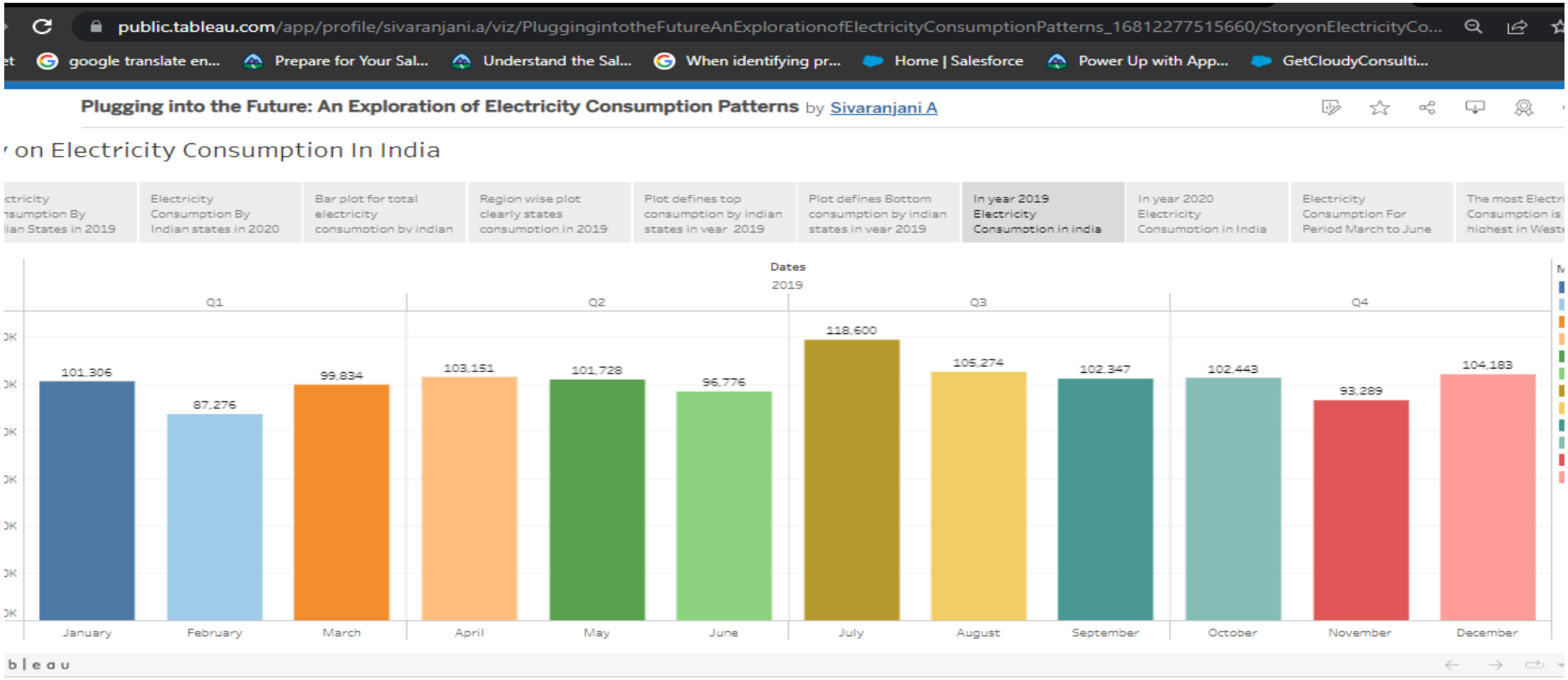
RESULT

Dashboard:

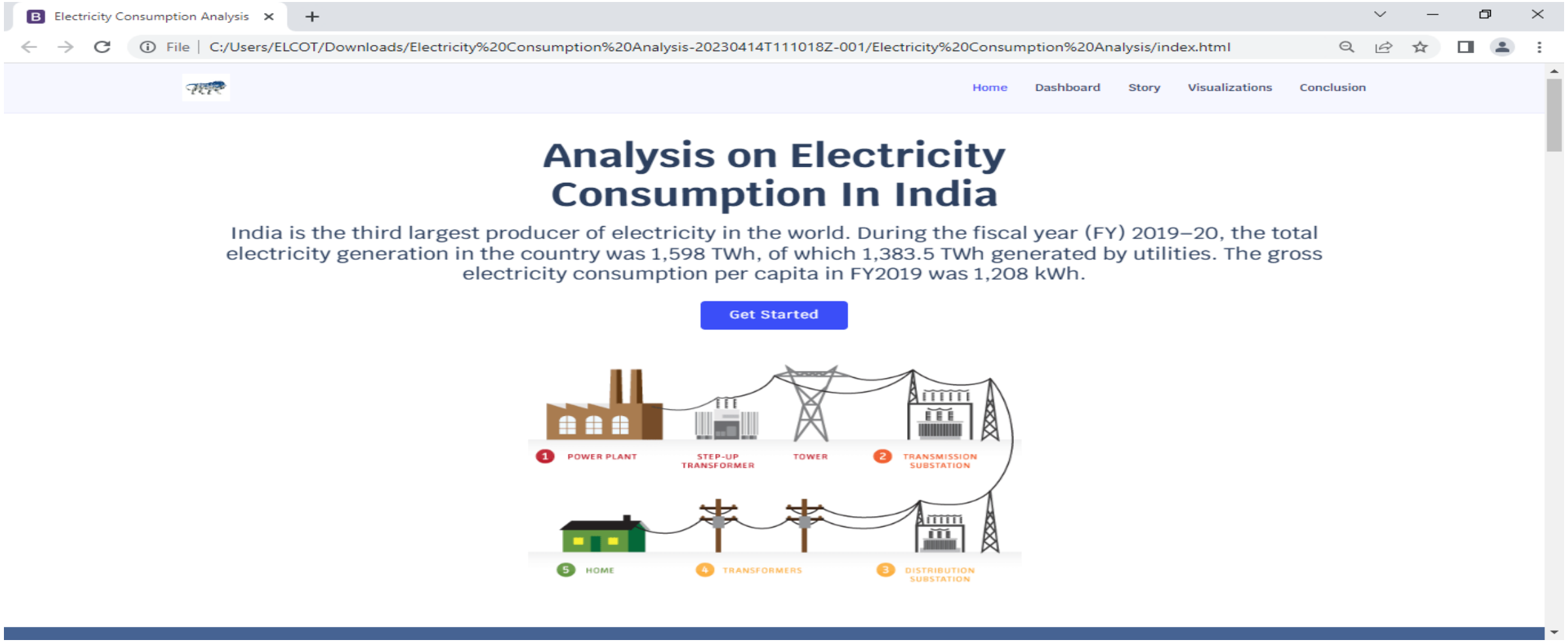


RESULT

Story:



Web Page


Electricity Consumption Analysis
File | C:/Users/ELCOT/Downloads/Electricity%20Consumption%20Analysis-20230414T111018Z-001/Electricity%20Consumption%20Analysis/index.html
Home
Dashboard
Story
Visualizations
Conclusion
Analysis on Electricity Consumption In India
India is the third largest producer of electricity in the world. During the fiscal year (FY) 2019–20, the total electricity generation in the country was 1,598 TWh, of which 1,383.5 TWh generated by utilities. The gross electricity consumption per capita in FY2019 was 1,208 kWh.
Get Started
1 POWER PLANT
STEP-UP TRANSFORMER
TOWER
2 TRANSMISSION SUBSTATION
5 HOME
4 TRANSFORMERS
3 DISTRIBUTION SUBSTATION

Advantages

It is a clean, safe, cheap and convenient source of energy	Lower maintenance cost	More efficient	We all know that it can be set up in many sizes
It doesn't require as many employees	Reduces greenhouse emission	Makes barely any pollution compare to other ways of creating or generating electricity	Relatively low maintenance cost
Hydroelectric station are inexpensive to operate	Hydroelectricity produces no gas emissions or waste	A station can operate and run for long periods of time	It is renewable

Disadvantages

More expensive than gasoline	Loss of fish species	Sometimes messes up wildlife	Dependent on precipitation
More power plants and more pollution	Damming can cause loss of land suitable for agriculture as well as recreation	Cost for construction	Change in river or stream quality
An electric vehicle is not completely emission free	In electricity, there are a limited number of feasible sites for a large number of dams	Drought can affect power production	Hydroelectric natural seasonal changes in river and ecosystems can be destroyed

Applications

An analysis of our electricity consumption data allows us to breakdown energy consumption and costs based on department segments and asset silos within a country. It allows us to view specific amount electricity use by region.

UI visualization of Electrcity Consumption make an awareness among the responsible citizen.

It helps students and future generation to explore the Electrcity consumption in different metrices.

It helps our Government to take decision about Production and Billing of Electricity

Conclusion

ELECTRICITY CONSUMPTION STATES:

Maharashtra is the highest electricity consumption user of India.

Gujarat is the second highest electricity consumption user of India.

Sikkim is the lowest electricity consumption user of India

ELECTRICITY CONSUMPTION REGIONS:

Total electricity consumption in western region is highest.

Total electricity construction in North East and region is lowest.

ELECTRICITY CONSUMPTION QUARTERS:

Electricity consumption in 2009 quarter 3 was highest

Electricity consumption in 2019 quarter one was lowest

Electricity construction in 2020 for quarter 3 was lowest
electricity construction 2024 quarter one was highest

Future Scope

Prior to the global pandemic, India's energy demand was projected to increase by almost 50% between 2019 and 2030, but growth over this period is now closer to 35% in the STEPS, and 25% in the Delayed Recovery Scenario.

Keeping them up to date with the newest technology by using newly released electrical devices.

Source Code: Find Here