PLUGGING INTO THE FUTURE:

AN EXPLORATION OF ELECTRICITY CONSUMPTION PATTERNS

INTRODUCTION:

India is the world's third-largest producer and third- largest consumer of electricity. The national electric grid in India has an installed capacity of 370.106 GW as of 31 march 2020. Renewable power plants, which also include large hydro electric plant, constitute 35.86% of India's total installed capacity. During the fiscal year (FY) 2019-20, the total electricity generation in the country was 1598 TWh, of which 1383.5 TWh generated by utilities. The gross electricity consumption per capita in FY2019 was 1208KWh.

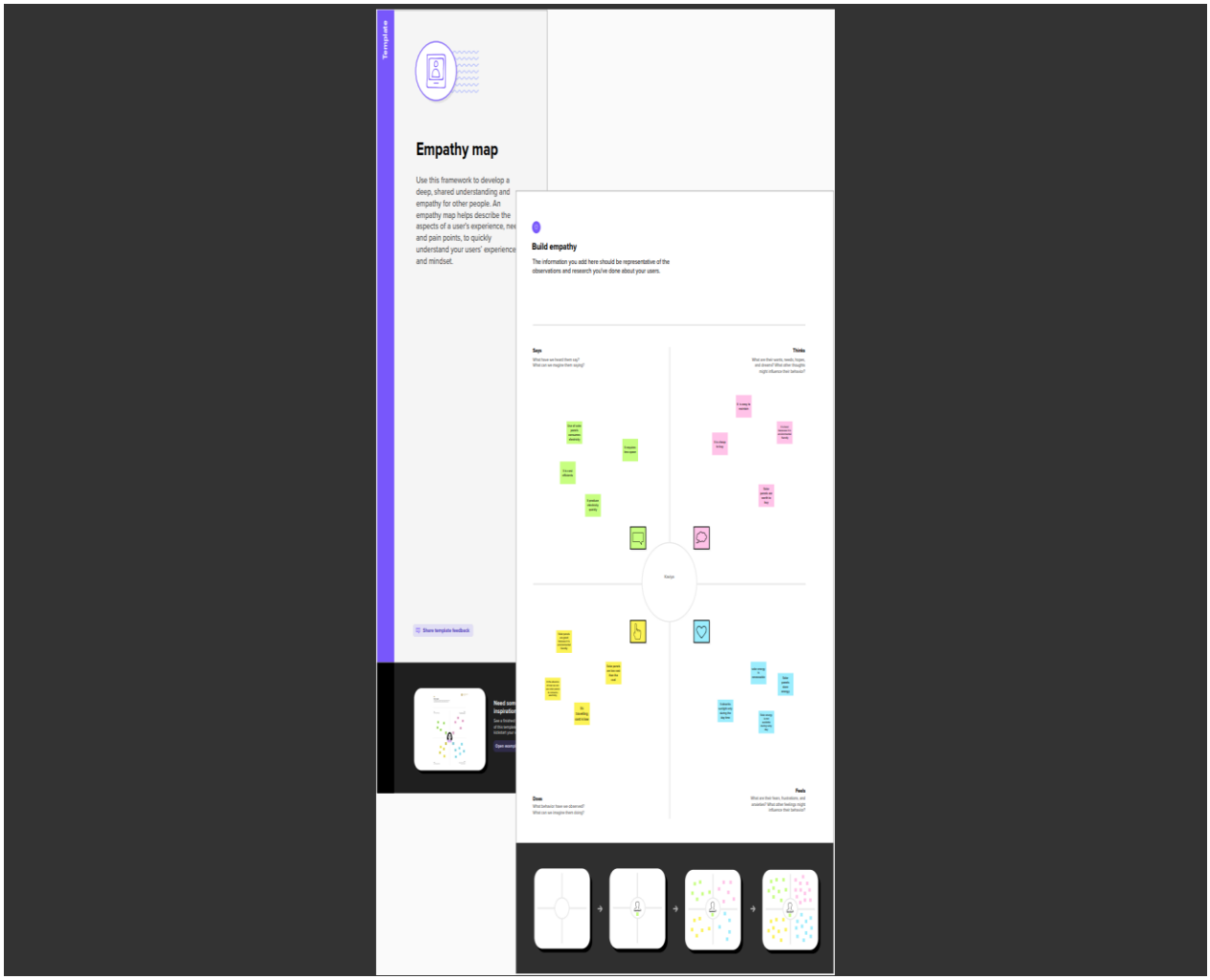
The dataset is exhaustive in its demonstration of energy consumption state wise.

Analysing electricity consumption in India from jan 2019 till 5th December 2020. This dataset contains a record of electricity consumption in each states of

India, here we are going to analyse state wise, region wise and overall electricity consumption in india.

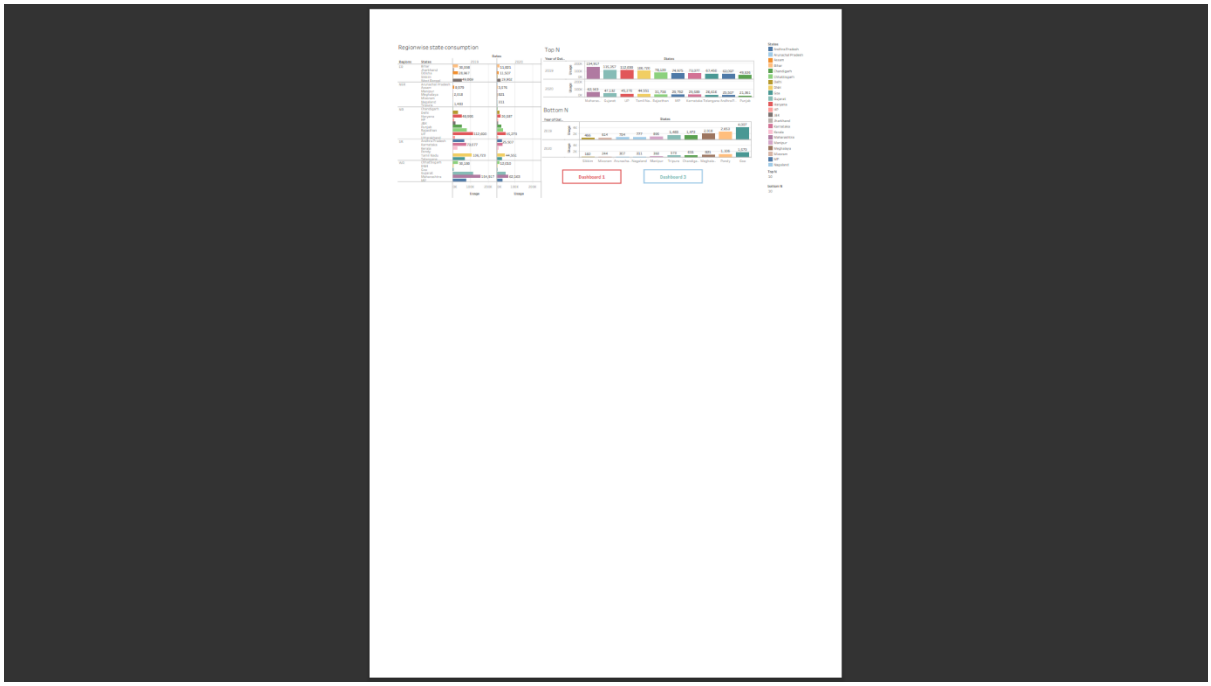
PROBLEM DEFINITION AND DESIGN THINKING

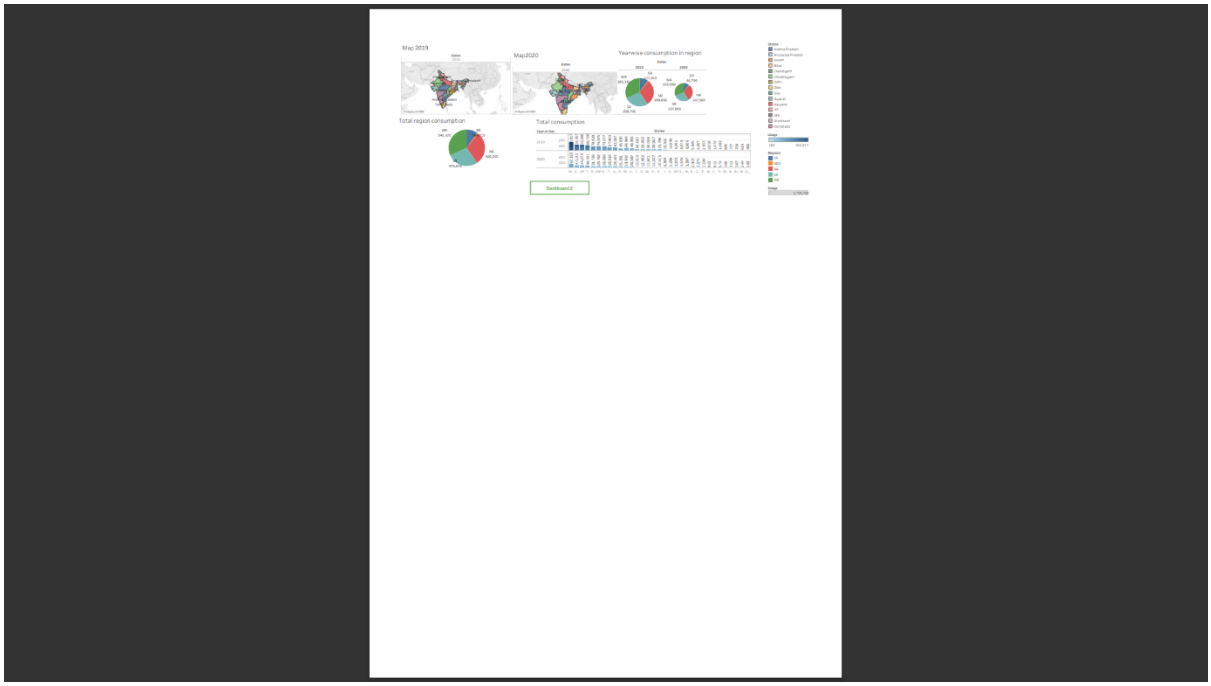
EMPATHY MAP:



IDEATION AND BRAINSTORMING:

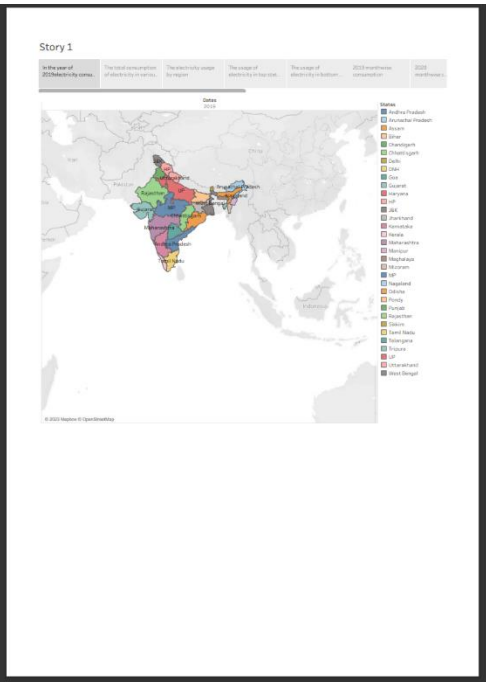
RESULT:


Regionwise state consumption
Top N
Bottom N
Dashboard 1
Dashboard 2


Map 2019
Map2020
Yearwise consumption in region
Total region consumption
Total consumption
Dashboard 2


Quaterwise usage
2019 monthwise consumption
usage By Year
2020 monthwise consumption
Dashboard 1

STORY:


Story 1

ADVANTAGES AND DISADVANTAGES:

The advantage of electric power is its reliable and uninterrupted supply runs the equipment efficiently and continuously. The transportation of electricity is easy once the transmission lines are functional. They work for years and need no or very less maintenance.

(i) Electricity can be readily transmitted over large distances with relatively small loss in energy. (ii) Electricity can be easily converted to other forms of energy ike heat, light, sound, motion, etc. (iii) electricity is the most convenient source of energy.

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.

APPLICATIONS:

- Cooling and heating: 47% of energy use.
- Water heater: 14% of energy use.
- Washer and dryer: 13% of energy use.
- Lighting: 12% of energy use.
- Refrigerator: 4% of energy use.
- Electric oven: 3-4% of energy use.
- TV, DVD, cable box: 3% of energy use.
- Dishwasher: 2% of energy use.

CONCLUSION:

Current through a given area of a conductor is the net charge that passes per unit time through the conductor. To keep up a gradual current, we must have a circuit within which an electrical phenomenon occurs from lower to higher mechanical energy.

The current I flowing through a substance is proportional to the voltage V across its ends, i.e., V ∝ I or V = RI, where R has termed the substance's resistance. The resistance unit is Ohm: 1Ω = 1 V A–1.

Resistivity may be a property of the fabric and depends on temperature and pressure. Power is a combination of voltage and current.

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.

In the Stated Policies Scenario, global electricity demand grows at 2.1% per year to 2040, twice the rate of primary energy demand. This raises electricity's share in total final energy consumption from 19% in 2018 to 24% in 2040. Electricity demand growth is set to be particularly strong in developing economies.

Despite the shock from Covid-19, India's electricity demand is still projected to grow by almost 5% per year to 2040 in the STEPS, which is nearly double the rate of energy demand as a whole.

Global energy consumption has increased dramatically in recent years and is projected to continue to increase. By 2050 renewable energy consumption is expected to increase and will reach about 247 exajoules.