Project Report

1.Introduction

1.1 Overview

Plugging into the Future: An Exploration of Electricity Consumption Patterns

India is the world's third-largest producer and third-largest consumer of electricity. Then electric grid in India has an installed capacity of 370.106 GW as of 31 March 2020. Renewable power plants, which also include large hydroelectric plants, constitute 35.86% of India's total installed capacity. 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 1,208kWh.

In 2015-16, electric energy consumption in agriculture was recorded as being the highest (17.89%) worldwide. The per capita electricity consumption is low compared to the most other countries despite India having a low electricity tariff. In light of the recent COVID-19 situation, when everyone has been under lockdown for the months of March to June the impacts of the lockdown on economic activities have been faced by every sector in a positive or a negative way. The dataset is exhaustive in its demonstration of energy consumption state wise.

Analysing Electricity Consumption in India from Jan 2019 till 5 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.

1.2 Purpose

Electric energy consumption is **energy consumption** in the form of electrical energy.[2] About a fifth of global energy is consumed as electricity: for residential, industrial, commercial, transportation and other purposes.[2] Quickly increasing this share by further electrification is extremely important to limit climate change,[3] because most other energy is consumed by burning fossil fuels thus emitting greenhouse gases which trap heat.

2. Problem Defining and Design Thinking

2.1 Empathy map

Negative Effects on the Electricity

Strong in developing Economics

Contributes to development of Industries

Coal Stove replacement Programme in Remote Regions

Net Zero Carbon Emission

Affordable and Reliable Energy

Decrease in Environmental Impact

Actions have resulted in Savings

An Exploration of Electricity Consumption Patterns

Use of Solar Radiation

Day to day Activities use to function

Always be careful around electricity

Use of Renewable Resources

Getting electricity to the right places at the right time

Overuse lead to power shortages

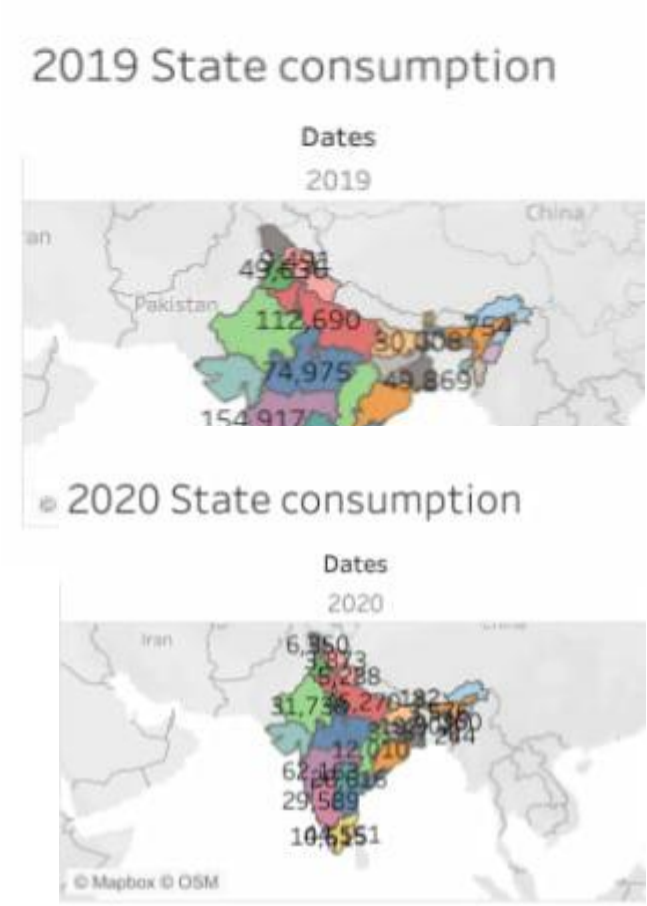
It can be both Helpful and Dangerous

Awareness raising for energy efficiency

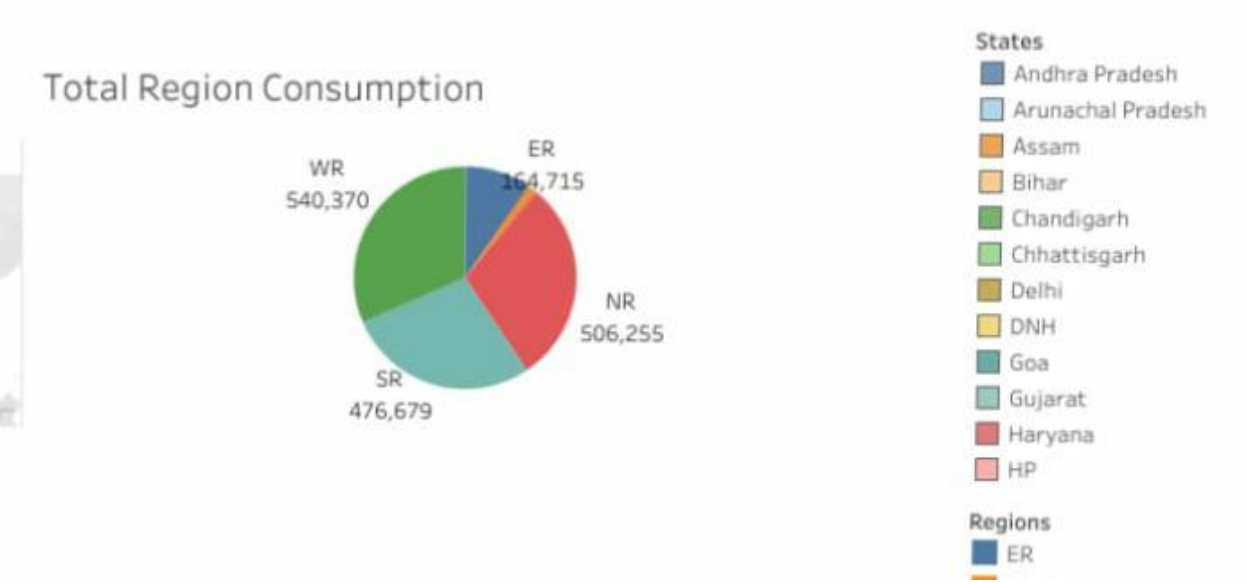
2.2 Ideation and Brainstorming Map

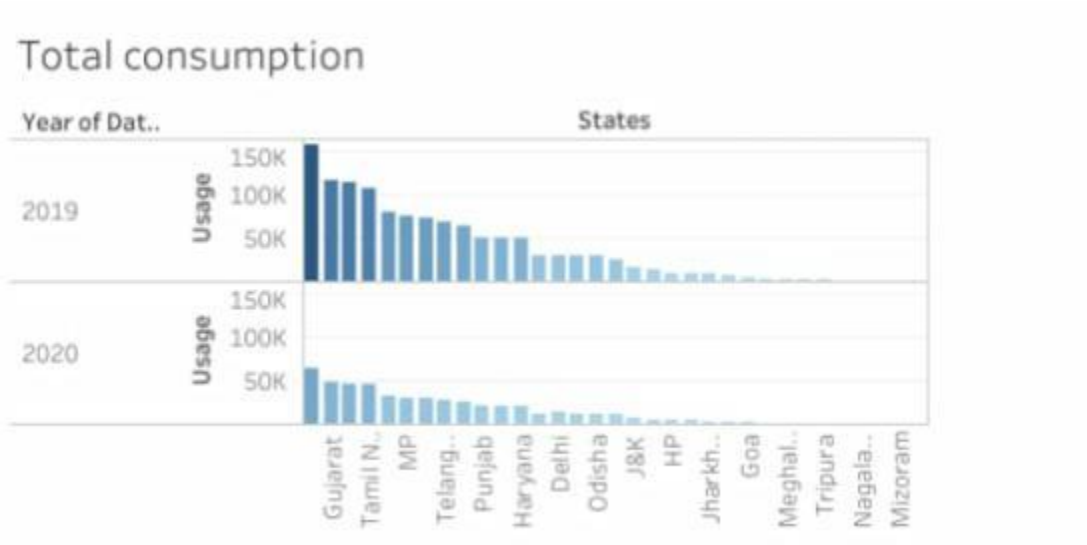
3. Result

1.2019 and 2020 State Consumption

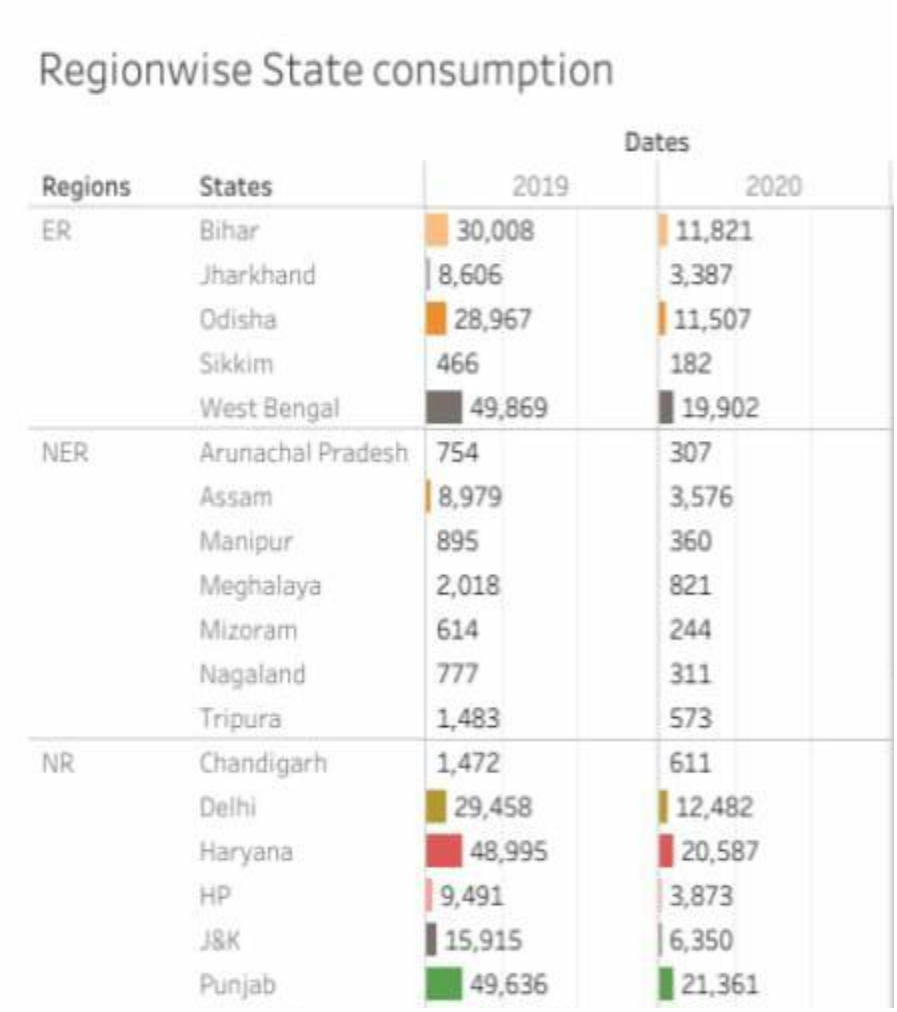


2.Region Consumption and Total Consumption

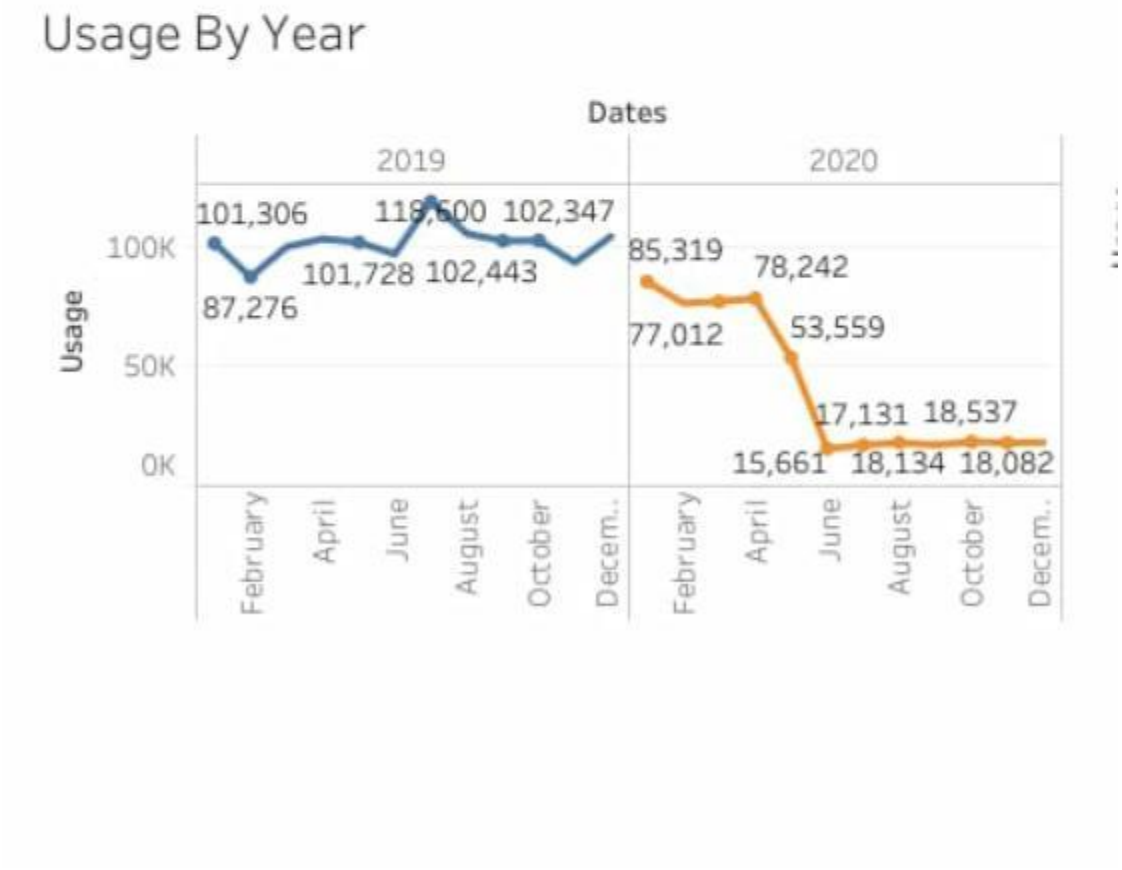




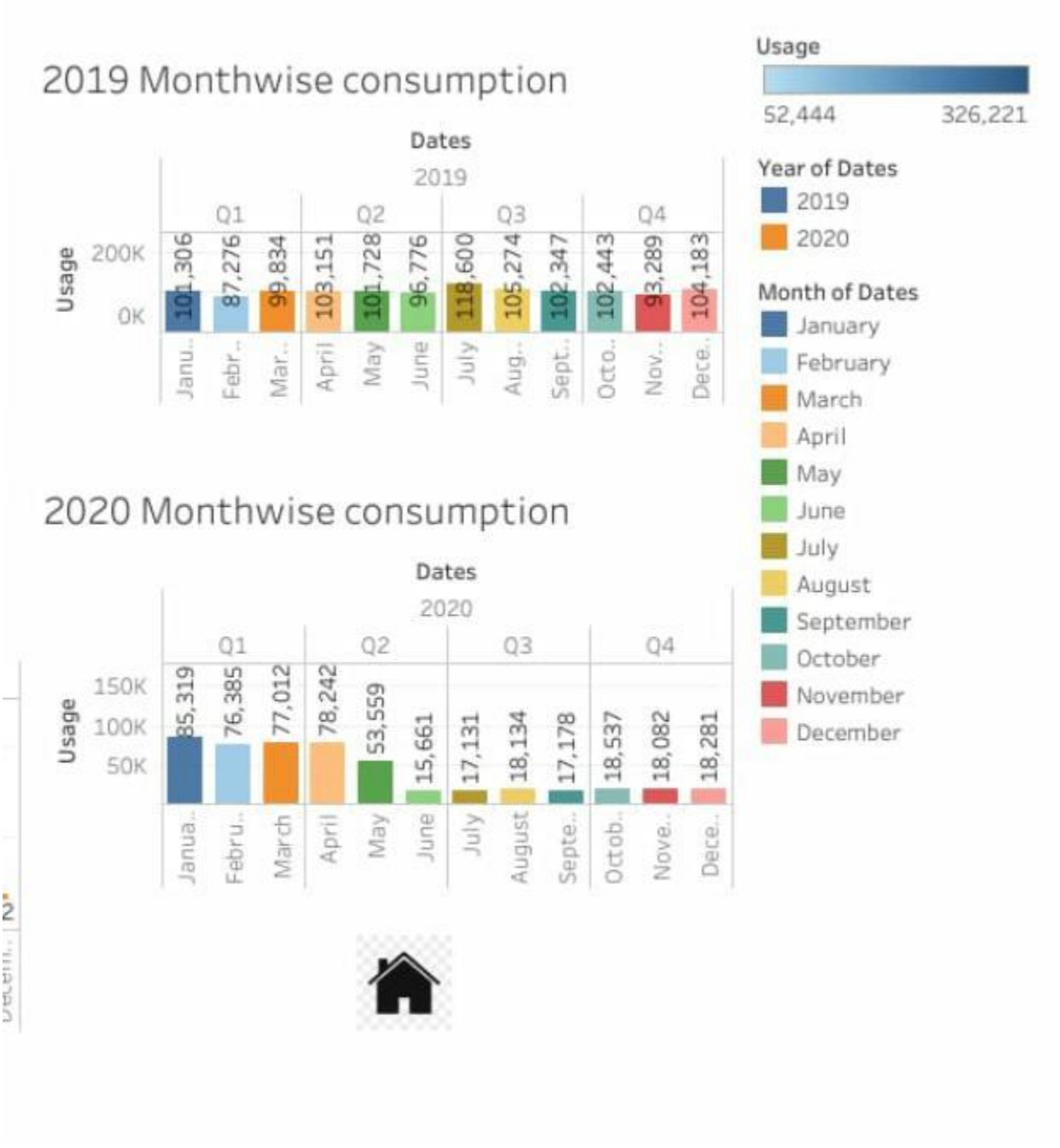
3.Region wise State Consumption



4.Quarter wise usage and Year wise usage

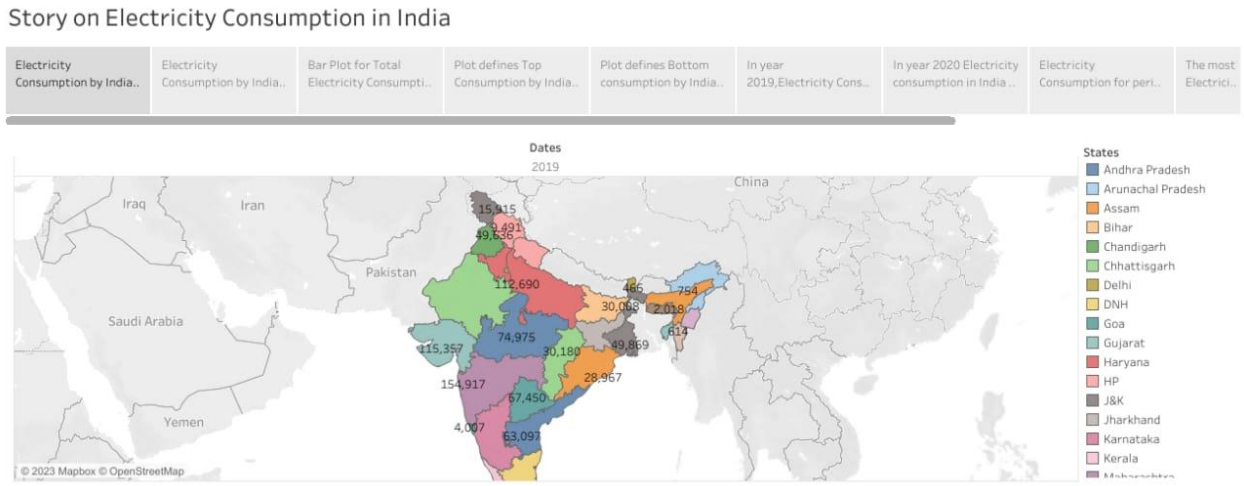


5.Monthwise Consumption

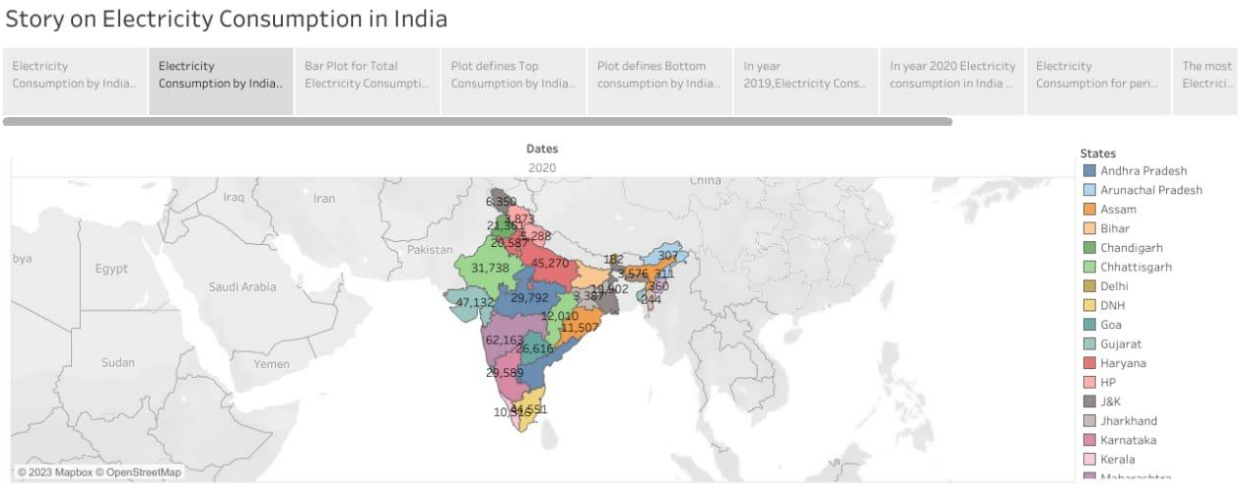


3.1Story electricity consumption in India

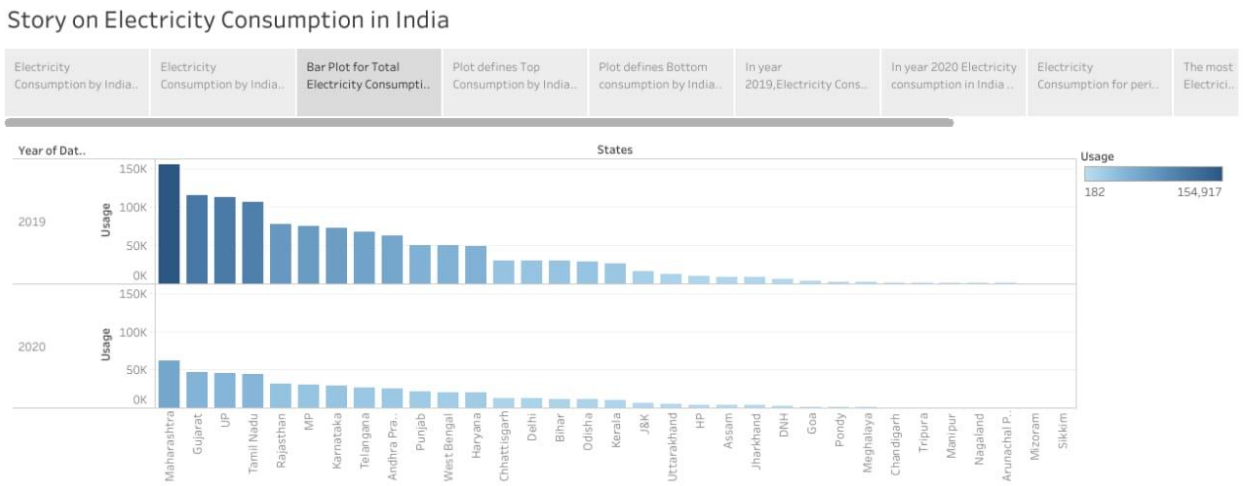
2019 Electricity Consumption



2020 Electricity consumption

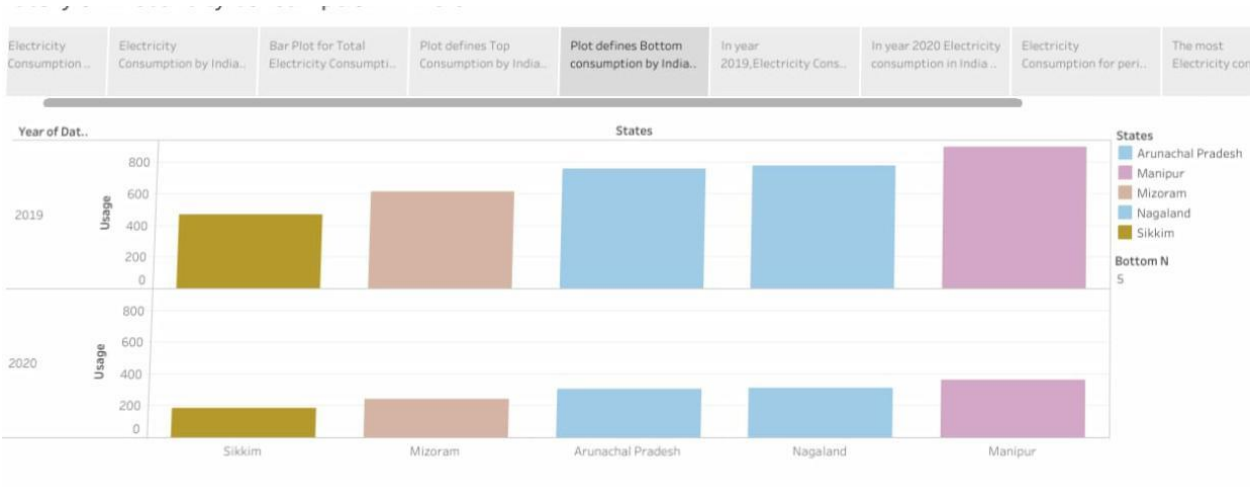


Bar plot for Electricity Consumption

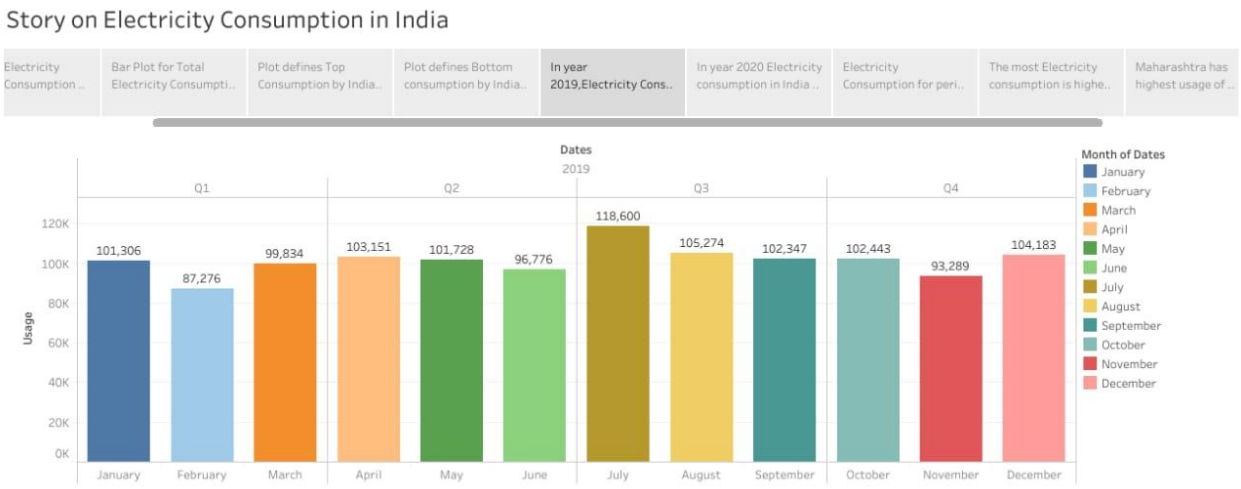


Plot defines Top and Bottom Electricity consumption

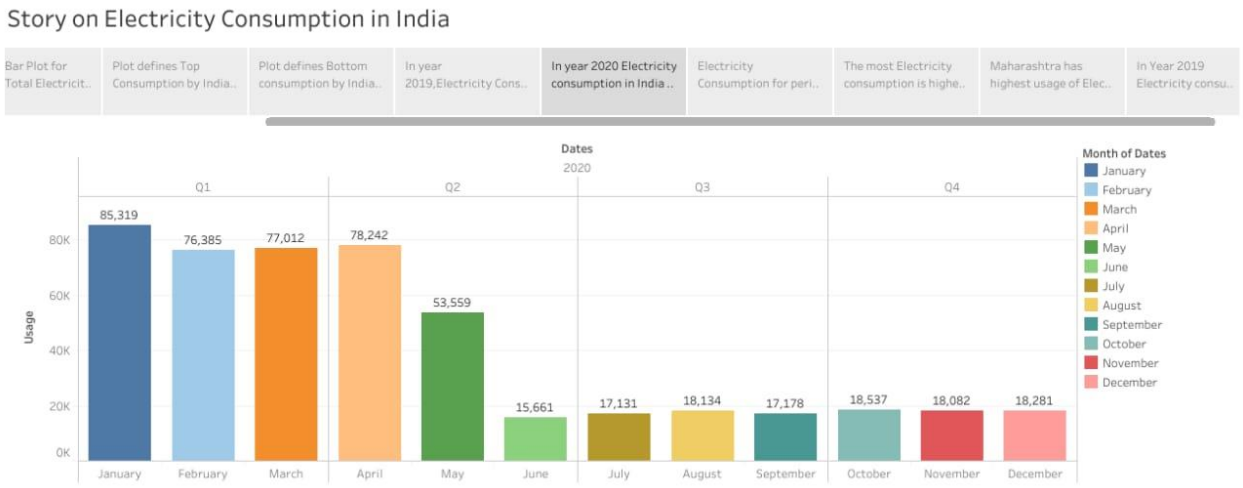
Bottom



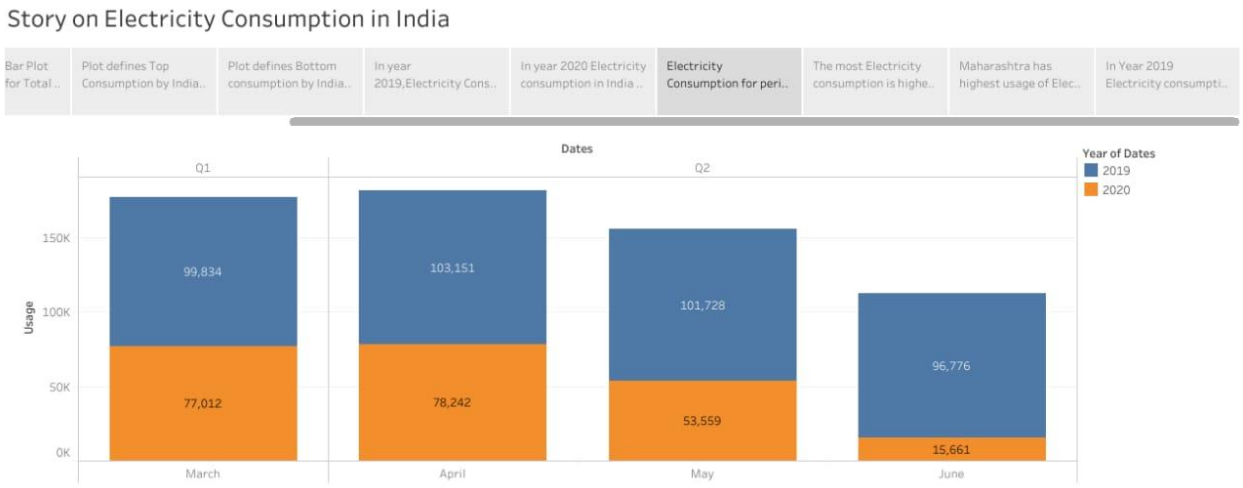
2019 Monthwise Electricity Consumption



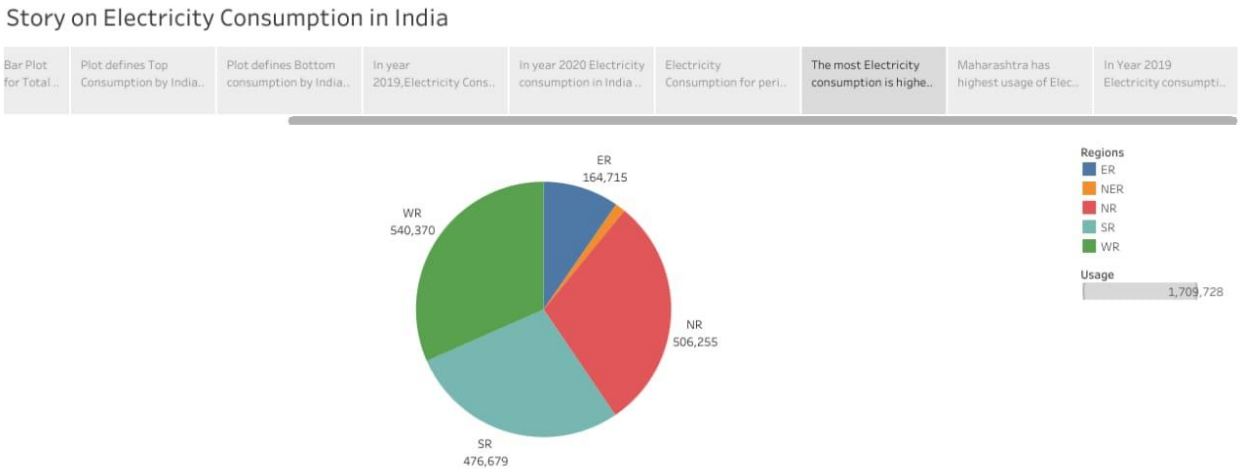
2020 Monthwise Electricity Consumption



Electricity Consumption in March to June

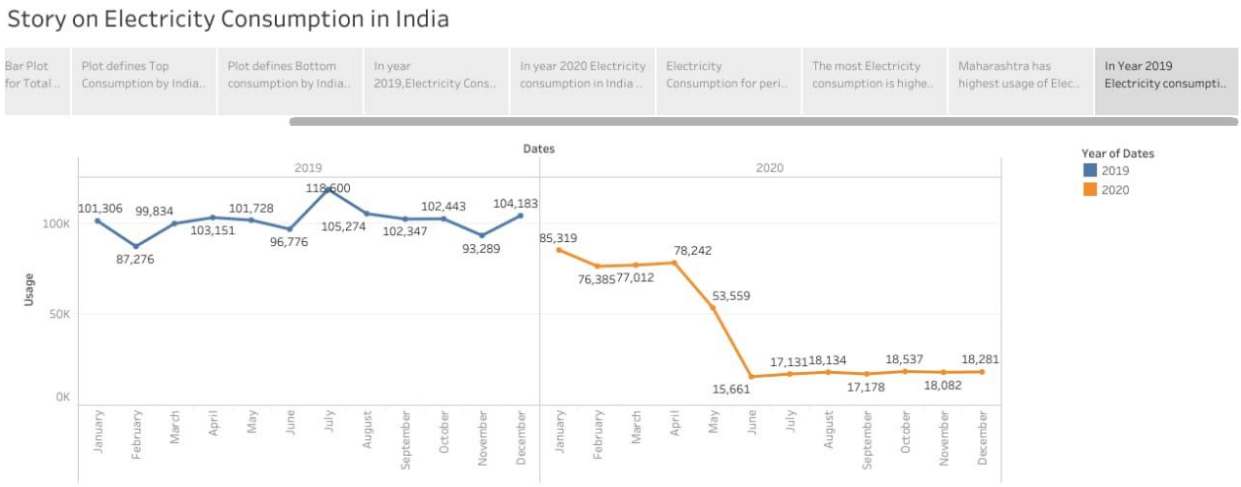


Highest Electricity consumption in region wise



Highest usage of Electricity Consumption in Maharashtra

Monthwise Electricity Consumption



4. Advantage of electricity Consumption

1. It is a clean,safe,cheap and convenient source of energy.

2. lower maintenance cost.

3. More efficient.

4. No tailpipe emission.

5. We all know that it can be setup in many sizes.

Disadvantage of electricity consumption

1. Cost for construction.

2. Unwanted side effects.

3. External energy plant method.

4. Dependent on precipitation.

5. It can cause loss of land

5. Applications

Global consumption has continued to go up rapidly at a rate faster than energy consumption. Between 1980 and 2013, the world's annual electricity consumption rose from 7300 TWh to 22,100 TWh. Since the twenty first century, global electricity consumption has seen even faster growth, as evidenced by an average annual increase of 3.4%, 1.2 percentage points higher than average annual growth of energy consumption

6. 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.

7. Future Scope

Energy conservation can be achieved in two different ways that include reducing the amount of primary energy consumed to supply the useful energy requirement (energy efficiency), and reducing the end point use of nonessential energy. Energy conservation can be achieved in two different ways that include reducing the amount of primary energy consumed to supply the useful energy requirement (energy efficiency), and reducing the end point use of nonessential energy.