PLUGGING INTO THE FUTURE: AN EXPLORATION OF ELECTRICITY CONSUMPTION PATTERNS

A PROJECT REPORT

Submitted by

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1. INTRODUCTION:

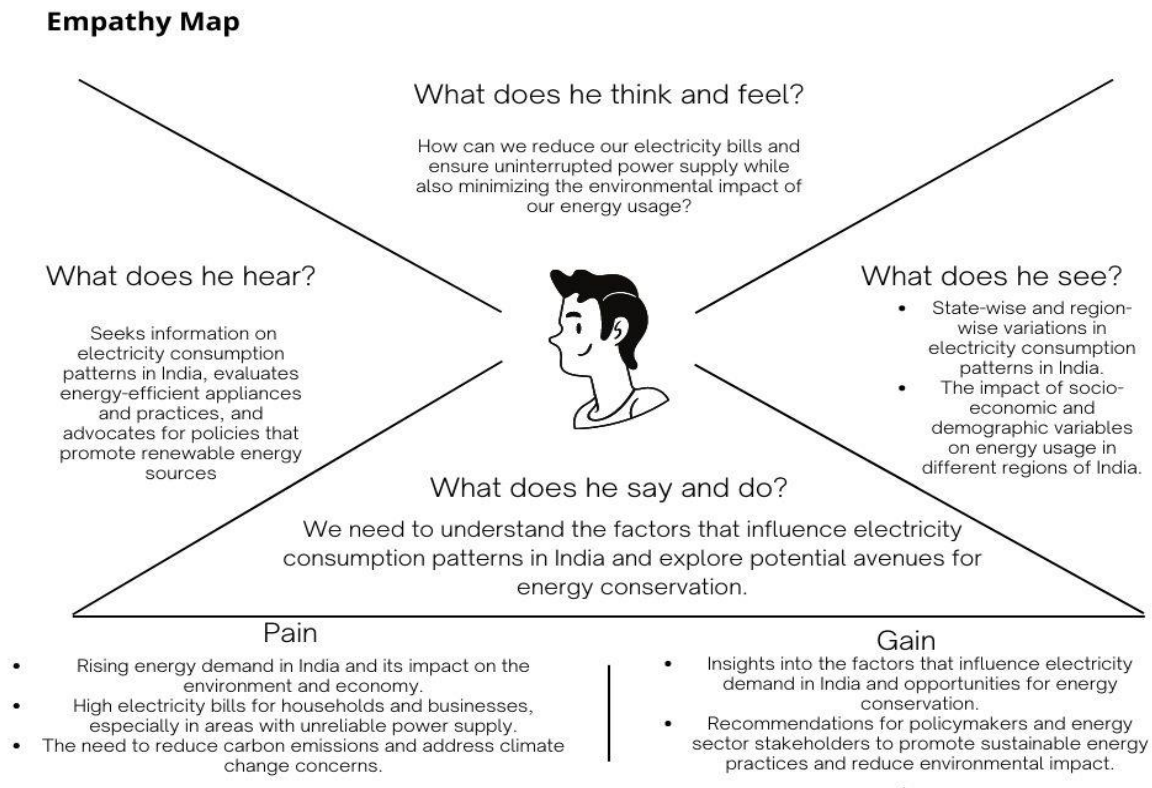
1.1. OVERVIEW:

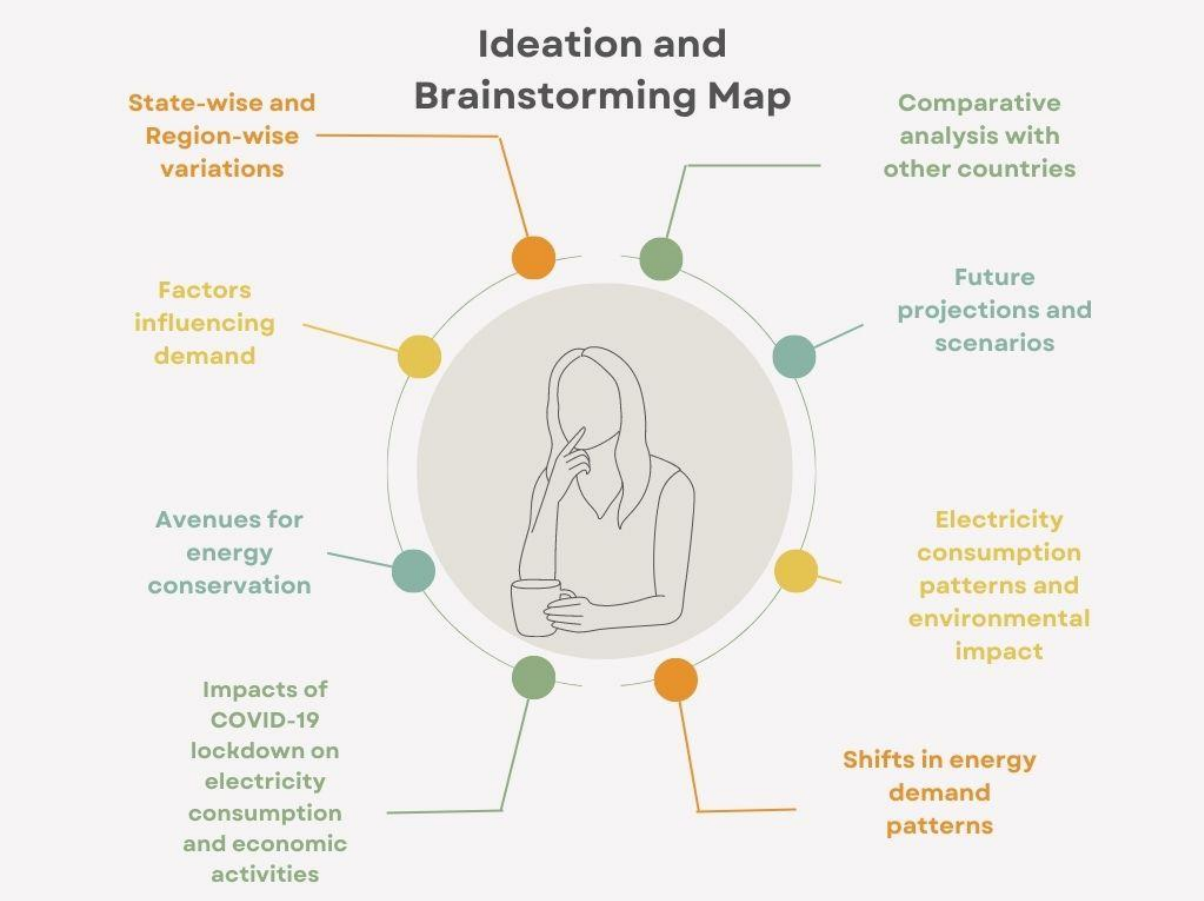
This project aims to analyze the electricity consumption patterns in India from January 2019 to December 5th, 2020, using an exhaustive dataset that records energy consumption state-wise. The project will investigate the State-wise, Region-wise, and overall electricity consumption in India, examining factors that influence energy usage and identifying opportunities for energy conservation. Additionally, the project will explore the impacts of the COVID-19 lockdown on electricity consumption and economic activities across different sectors.

1.2. PURPOSE:

The purpose of this project is to investigate the electricity consumption patterns in India, by examining State-wise and Region-wise variations in energy usage, identifying the underlying factors that influence electricity demand, and exploring potential avenues for energy conservation.

2. PROBLEM DEFINITION & DESIGN THINKING:





3. RESULT:

This project report presents a comprehensive analysis of electricity consumption in India, with a particular focus on the impact of the Covid-19 pandemic. The study found that the consumption of electricity has been drastically reduced from 2019 to 2020 due to the pandemic. The first six months of 2020 saw much higher electricity consumption compared to the last six months of 2020. This indicates a significant negative impact of Covid-19 on electricity consumption.

The report also highlights the top five consumers of electricity in India, namely Maharashtra, Gujarat, Uttar Pradesh, Tamil Nadu, and Rajasthan. These states are known for their higher population and geographical size, which translates into higher electricity consumption. On the other hand, Sikkim, Mizoram, Arunachal Pradesh, Nagaland, and Manipur were found to be the lowest consumers of electricity in India.

Furthermore, the study found that the Western regions of India were the highest consumers of electricity, while the Northeast regions were the lowest. This suggests a regional disparity in electricity consumption, which is closely related to population and geographical size. After the implementation of lockdown in

2020, the electricity consumption has been drastically reduced. In fact, the 3rd quarter of 2020 received the lowest consumption compared to the same quarter of 2019 and 2020.

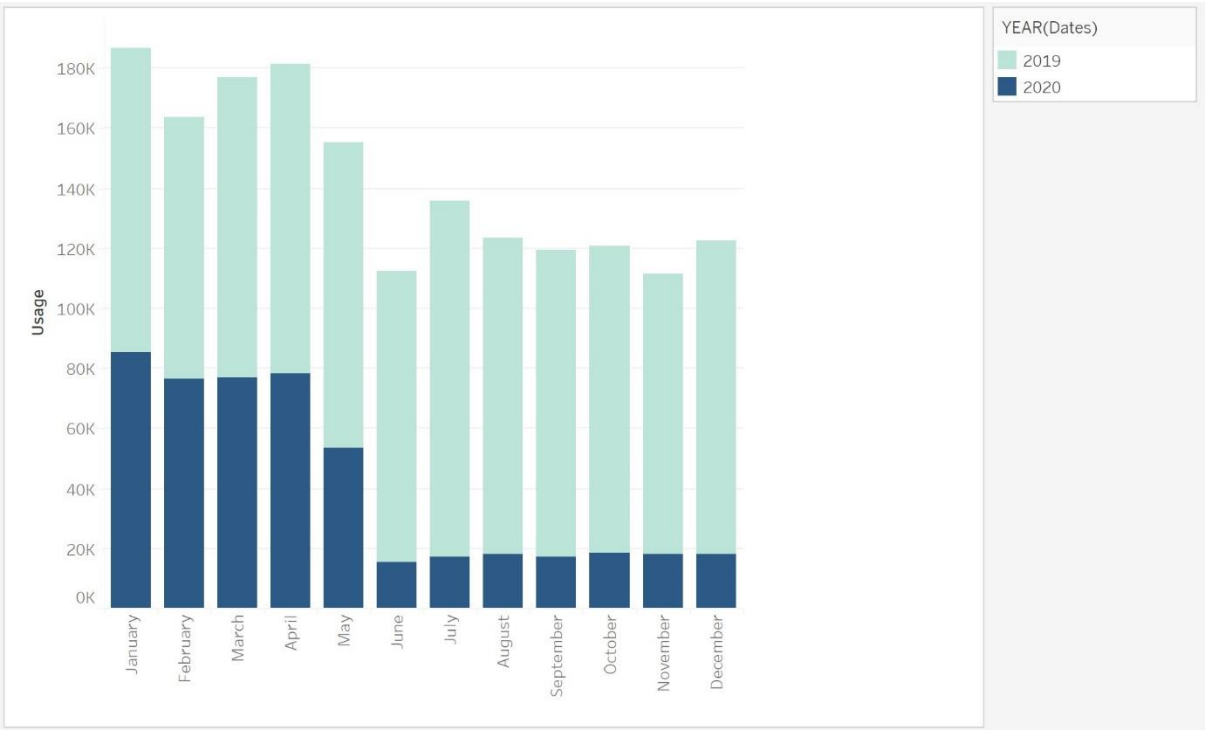


Figure 1: Year-wise electricity consumption

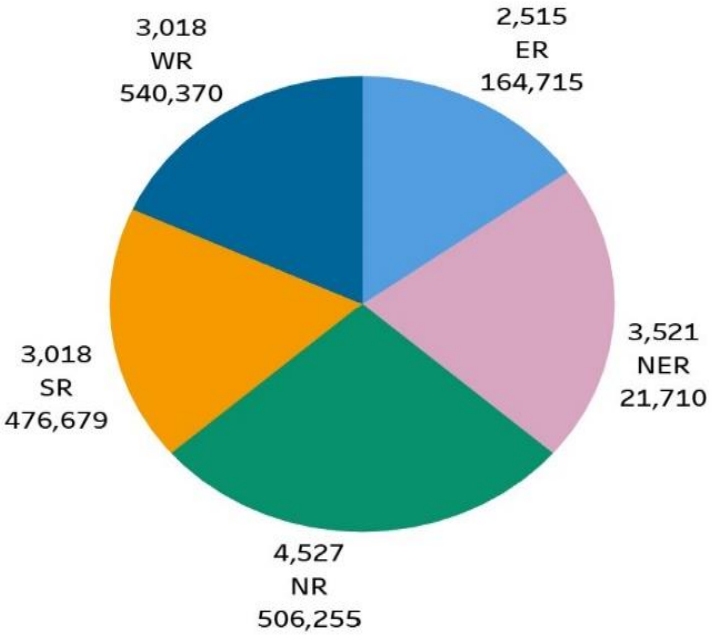


Figure 2: Region-wise Electricity consumption

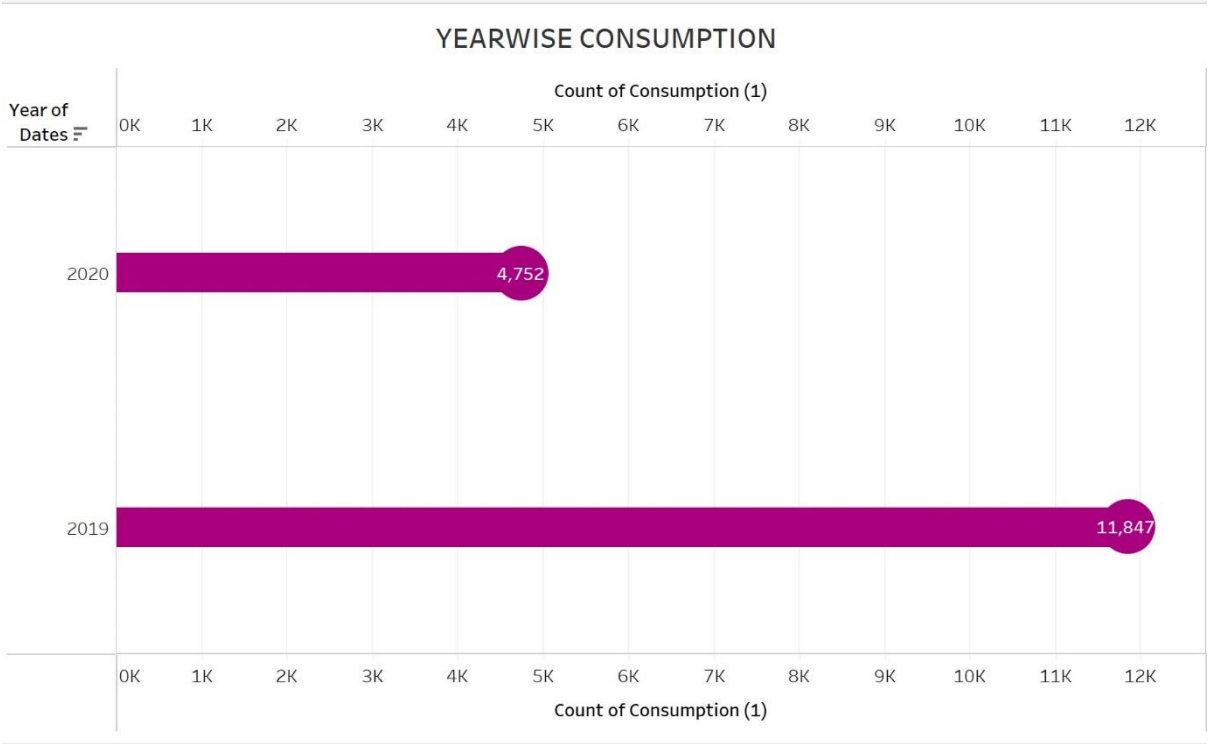


Figure 3: Year-wise consumption

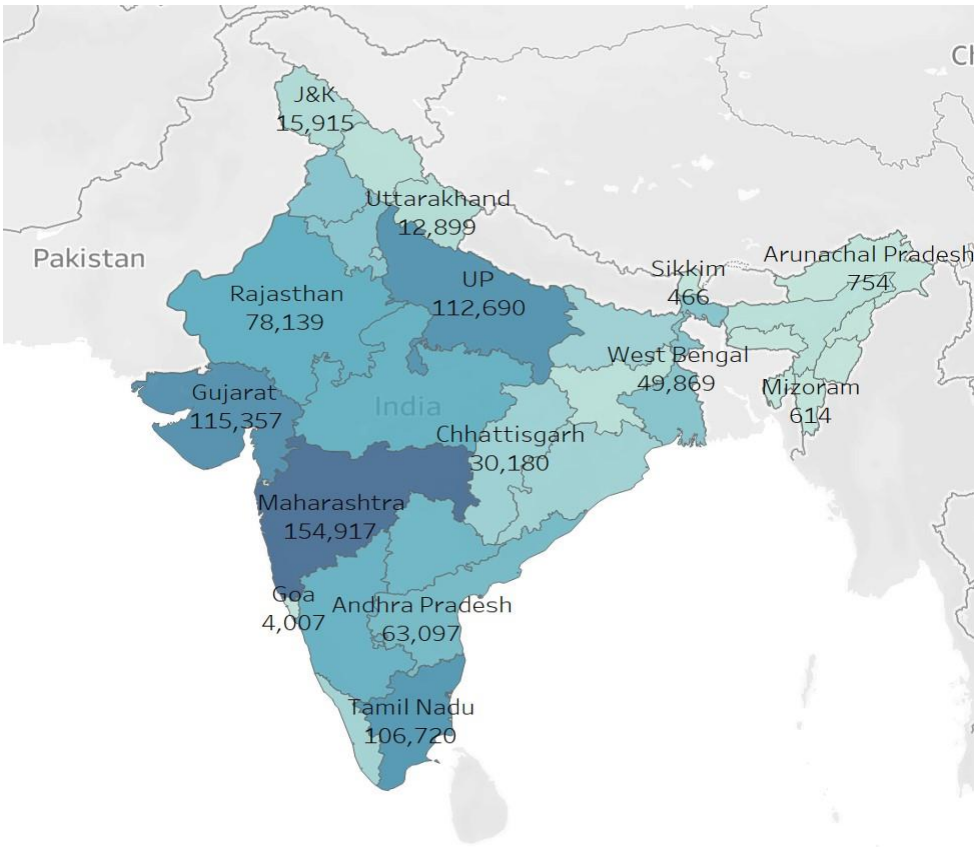


Figure 4: State-wise Consumption in 2019

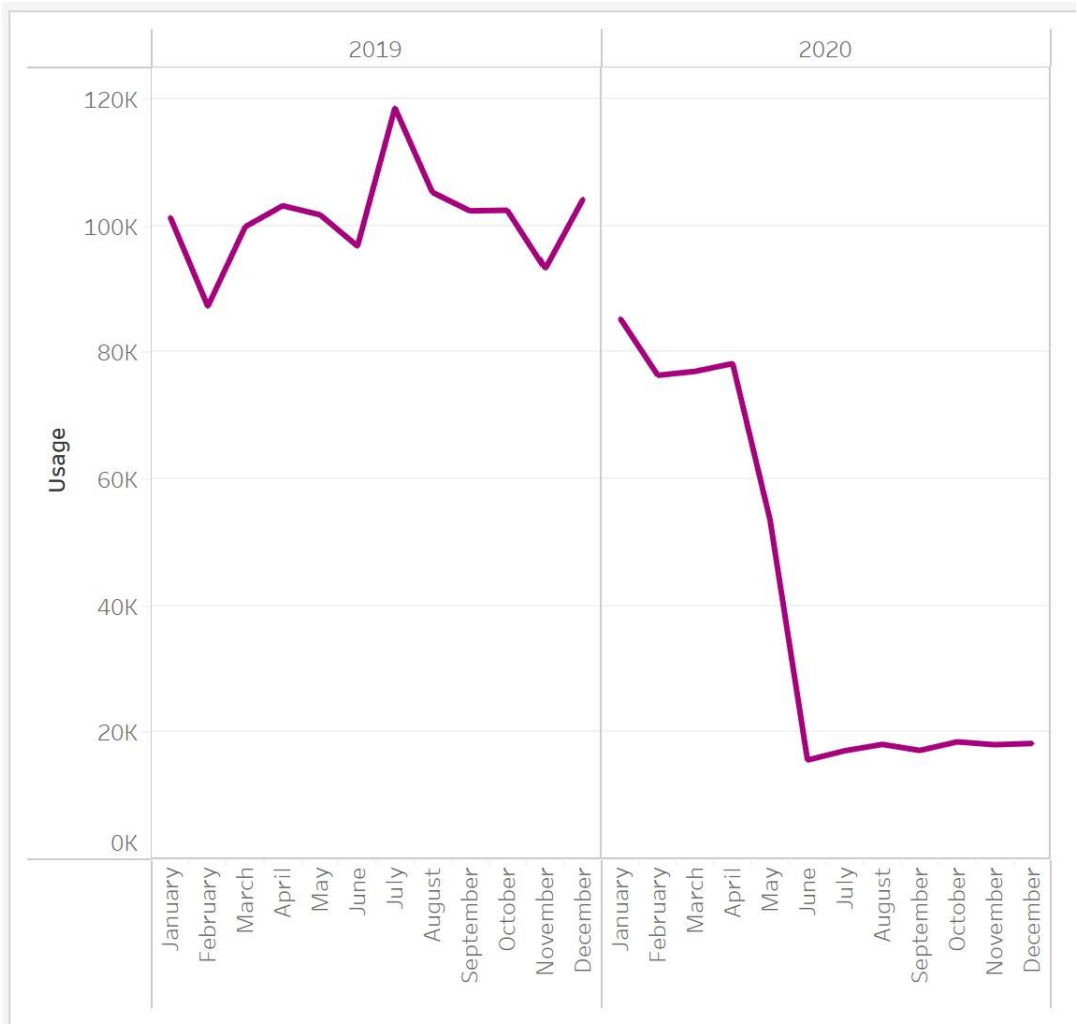


Figure 5:Electricity consumed by the states in 2019 and 2020

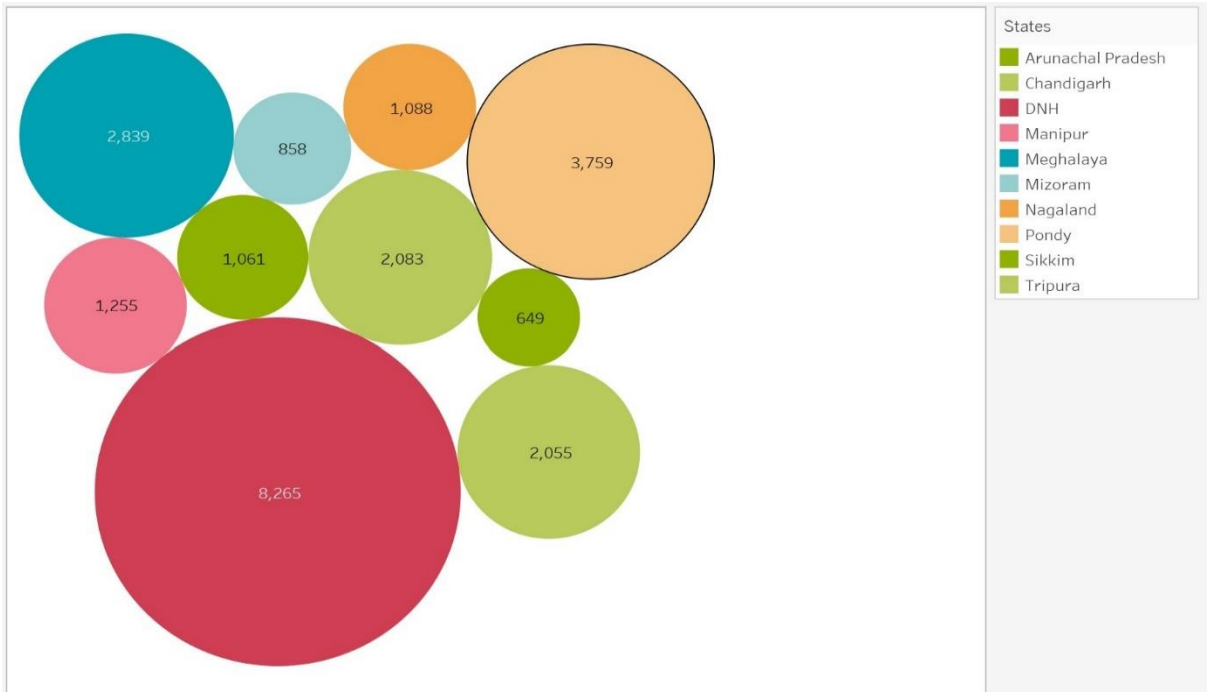


Figure 6: States with Low Electricity consumption

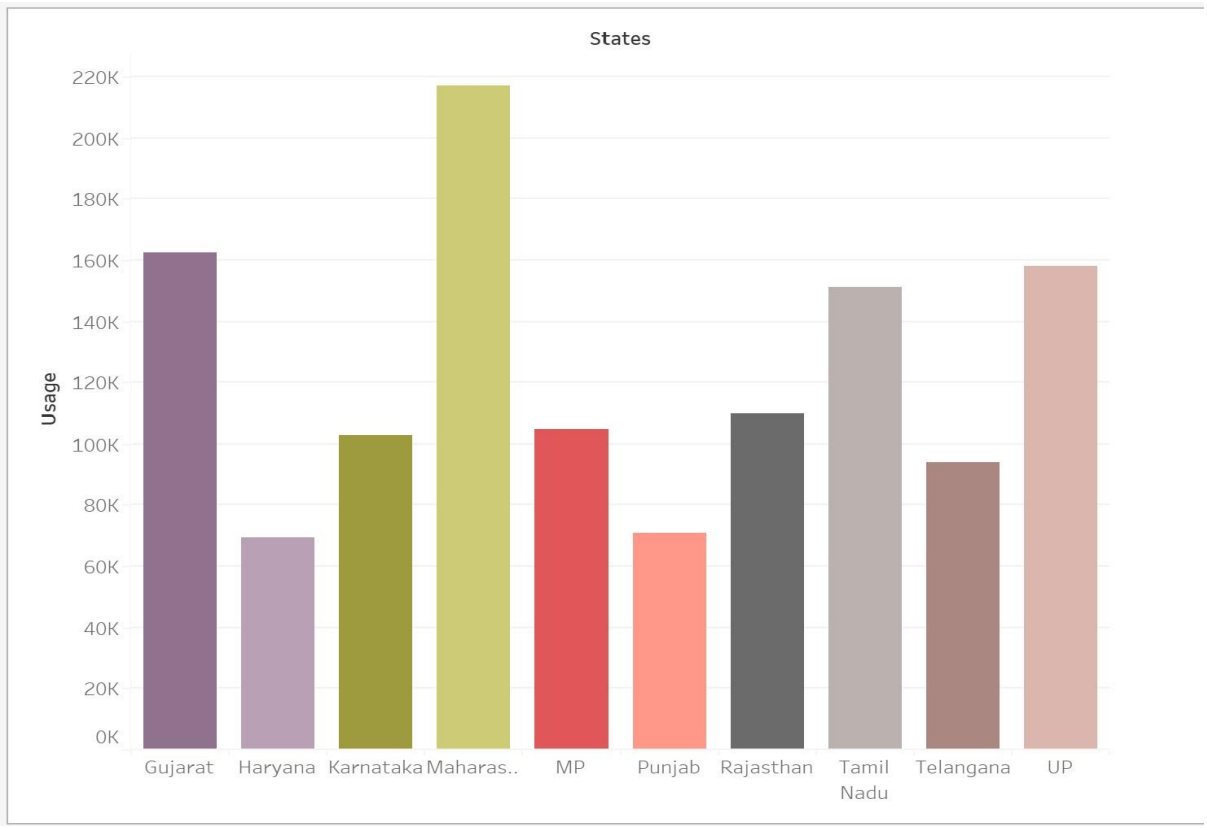


Figure 7: States with high electricity consumption

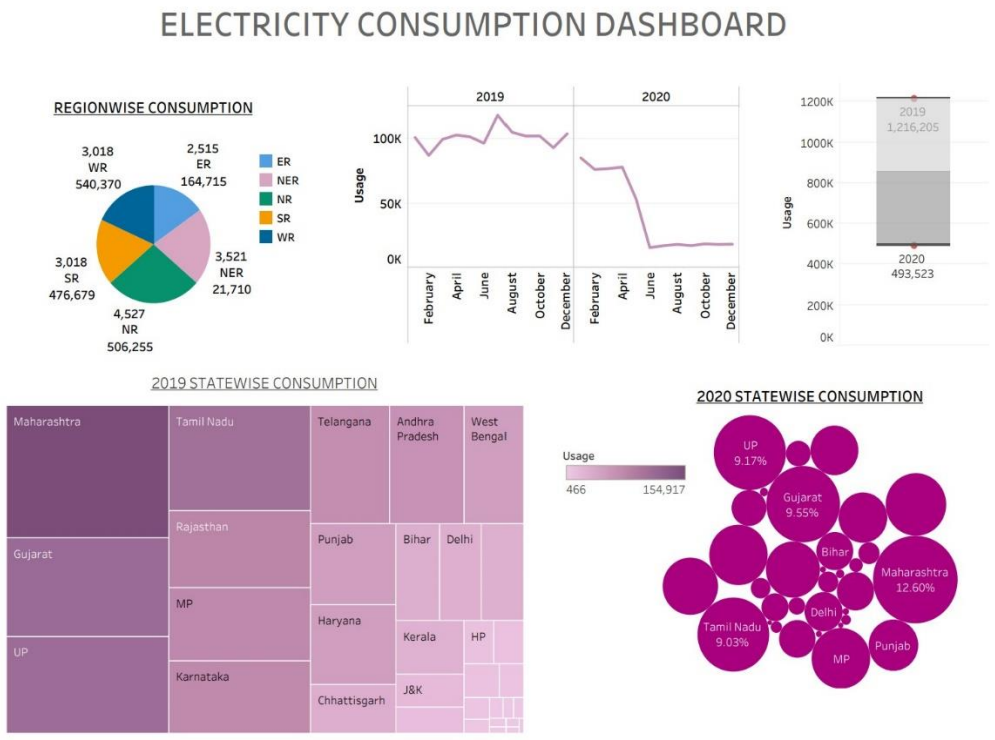


Figure 8: Electricity Consumption Dashboard

4. ADVANTAGES & DISADVANTAGES:

4.1. ADVANTAGES:

- Provides valuable insights into the impact of the Covid-19 pandemic on electricity consumption in India.
- Offers a comprehensive analysis of regional and quarterly trends in electricity consumption, which can be useful for policymakers and stakeholders.
- Helps identify states that have higher electricity consumption, which can aid in developing targeted policies to manage electricity demand.
- Highlights the correlation between population and geographical size with higher electricity usage, which can be useful for infrastructure planning and development.

4.2. DISADVANTAGES:

- The study is limited to a specific time period and may not reflect long-term trends in electricity consumption.
- The report does not delve into the reasons behind the regional disparities in electricity consumption, which could have important implications for policy development.
- The study does not address the impact of renewable energy sources on electricity consumption in India, which is an important factor in reducing carbon emissions and mitigating climate change.

5. APPLICATIONS:

- Informing policymakers and stakeholders about the impact of the Covid-19 pandemic on electricity consumption in India.
- Developing targeted policies and strategies to manage electricity demand and consumption in different regions of India.
- Helping identify areas where investment in infrastructure and electricity access can be prioritized based on population and geographical size.
- Providing insights into the relationship between electricity consumption and population growth, which can be useful for long-term planning and development.

- Informing the development of renewable energy policies and strategies to reduce carbon emissions and mitigate climate change.

6. CONCLUSION:

In conclusion, this project report sheds light on the impact of Covid-19 on

In conclusion, this project has provided a comprehensive analysis of electricity consumption in India, with a focus on the impact of the Covid-19 pandemic. The study found a significant reduction in electricity usage across all states in India during the pandemic, particularly in the last quarter of 2020. The report also highlighted the top five consumers of electricity in India, as well as the regional disparities in electricity consumption.

The findings of this project have important implications for policymakers and stakeholders, especially in terms of developing strategies to manage electricity consumption in a more sustainable and equitable way. The study can help inform targeted policies and infrastructure investments in different regions of India based on population and geographical size. The report can also serve as a basis for developing renewable energy policies and strategies to reduce carbon emissions and mitigate climate change.

Overall, this project provides valuable insights into the impact of the Covid-19 pandemic on electricity consumption in India and sheds light on the relationship between electricity consumption and regional and population dynamics.

7. FUTURE SCOPE:

- Conducting more in-depth research into the reasons behind the regional disparities in electricity consumption in India and the relationship between population growth and energy demand.
- Expanding the study to include more recent data to track trends in electricity consumption beyond the initial impact of the Covid-19 pandemic.
- Examining the impact of renewable energy sources on electricity consumption and carbon emissions in India, with a focus on developing targeted policies to encourage the adoption of renewable energy.
- Analyzing the impact of electricity consumption on environmental sustainability and human development in India.

- Conducting comparative studies with other countries to better understand the relationship between energy consumption, economic development, and population dynamics.