Project Report Template

INTRODUCTION

1.1Overview

A brief description about your project

1.2Purpose

The use of this project. What can be achieved using this.

1 Problem Definition & Design Thinking

1.1 Empathy Map

Paste the empathy map screenshot

1.2 Ideation & Brainstorming Map

Paste the Ideation & brainstorming map screenshot

2 RESULT

Final findings (Output) of the project along with screenshots.

3 ADVANTAGES & DISADVANTAGES

List of advantages and disadvantages of the proposed solution

4 APPLICATIONS

The areas where this solution can be applied

5 CONCLUSION

Conclusion summarizing the entire work and findings.

6 FUTURE SCOPE

Enhancements that can be made in the future.

7 APPENDIX

A. Source Code

Attach the code for the solution built.

1 INTRODUCTION

1.1 Overview

Project Description:

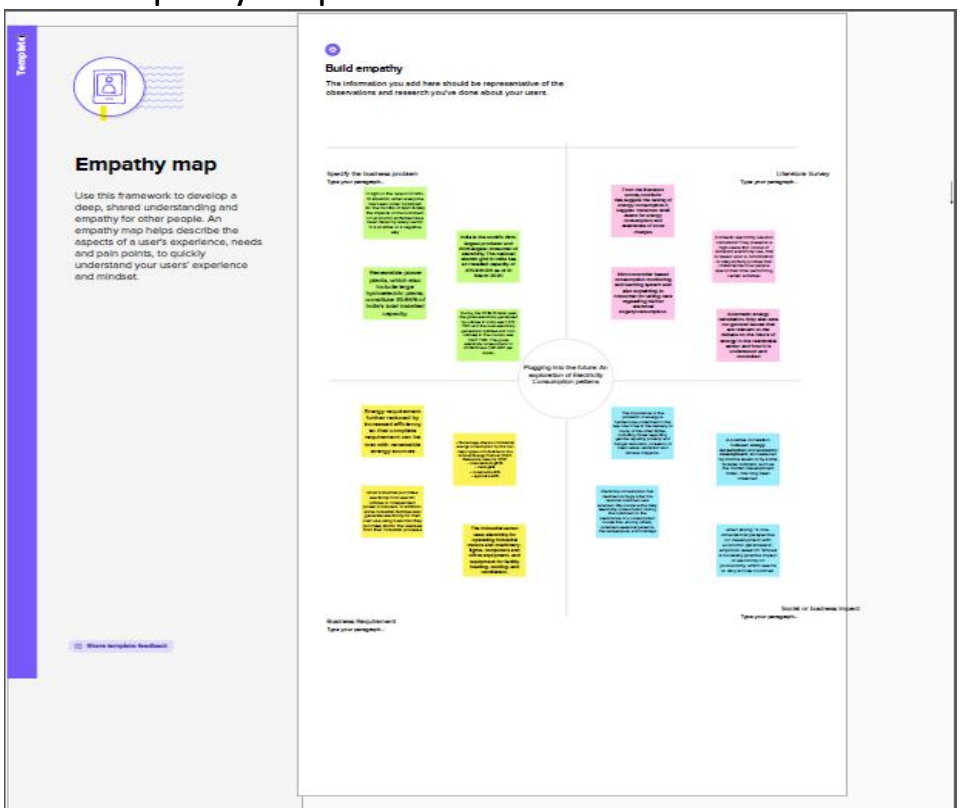
India is the world's third-largest producer and third-largest consumer of electricity. The national electric grid in India has an installed capacity of 370.106 GW as of 31 March 2020. Renewable power plants, which also include large hydroelectric plants, constitute 35.86% of India's total installed capacity. During the fiscal year (FY) 2019–20, the total electricity generation in the country was 1,598 TWh, of which 1,383.5 TWh was generated by utilities. The gross electricity consumption per capita in FY2019 was 1,208 kWh.
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 most other countries despite India having a low electricity tariff.
Considering 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.

1.2 Purpose

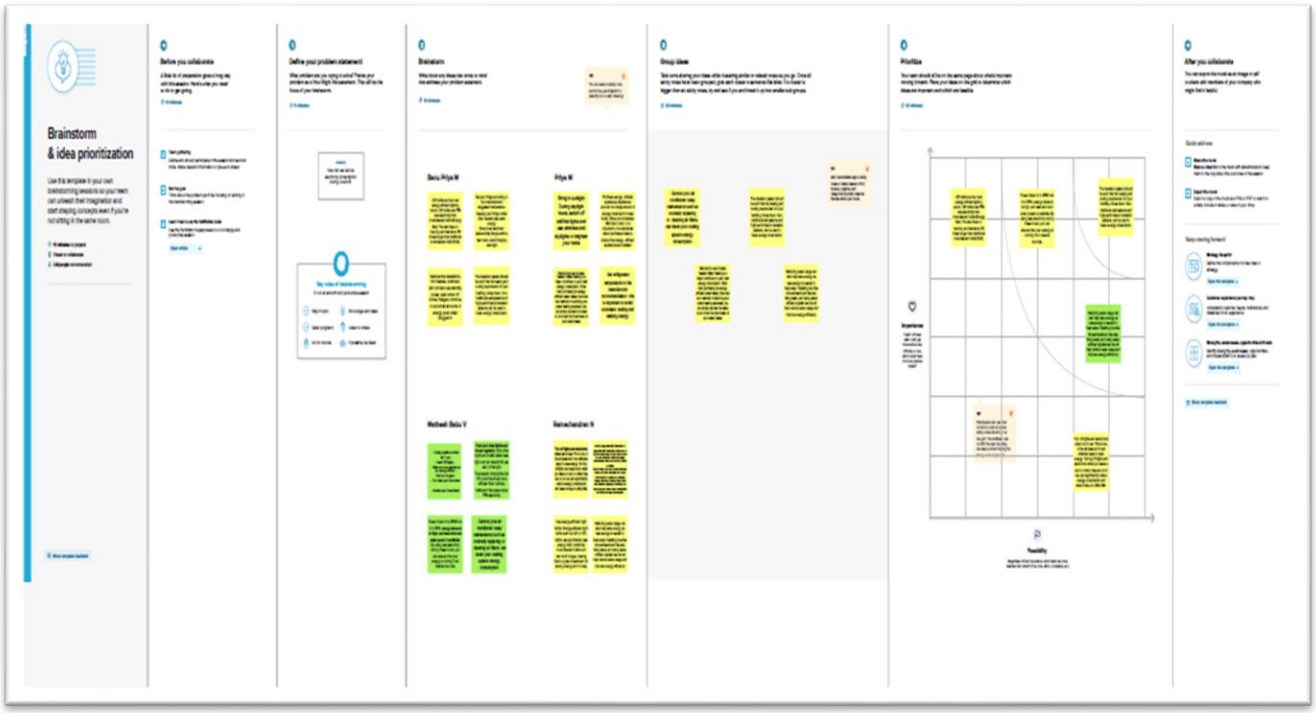
Analyzing Electricity Consumption in India from Jan 2019 till 5th December 2020. This dataset contains a record of electricity consumption in each state of India, here we are going to analyses State wise, Region wise and Overall Electricity consumption in India.
The dataset is exhaustive in its demonstration of energy consumption state wise.

2 PROBLEM DEFINITION & DESIGN THINKING

2.1 Empathy Map



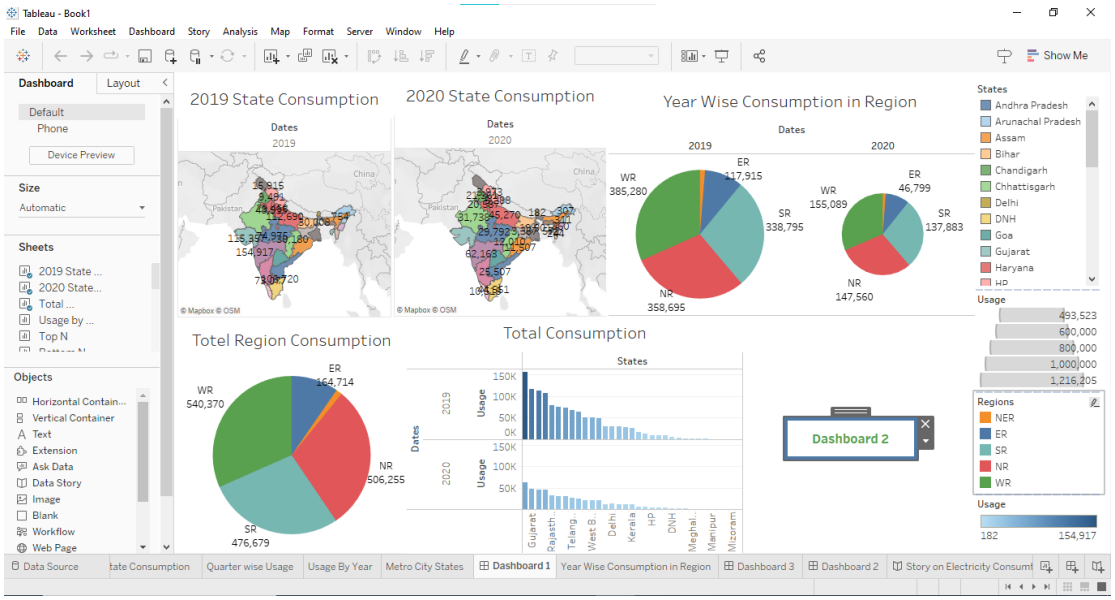
2.2 Ideation & Brainstorming Map

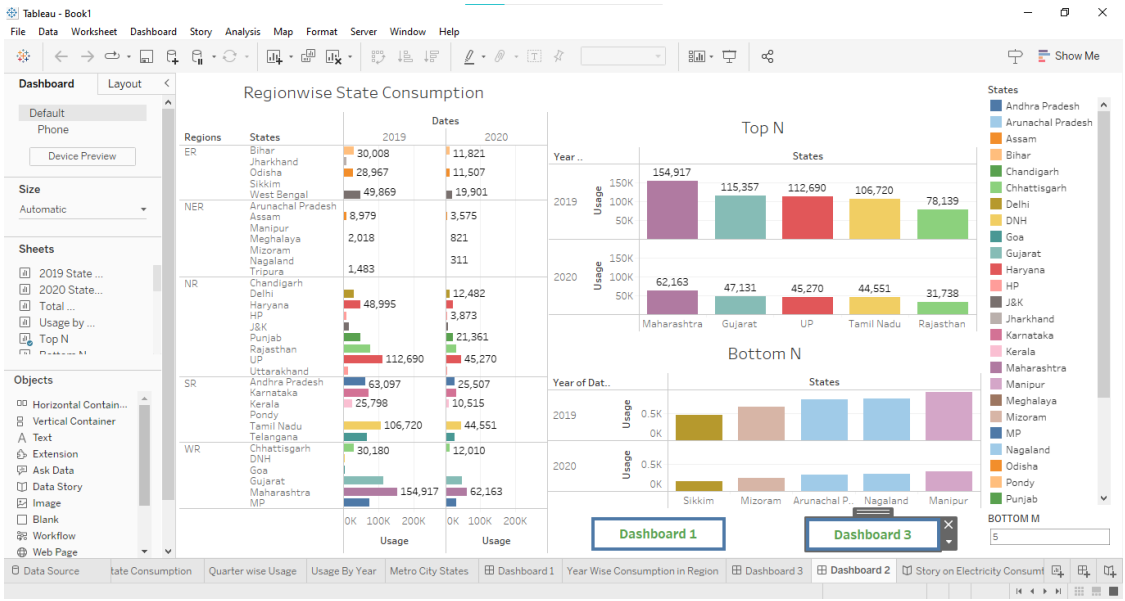


3 RESULTS

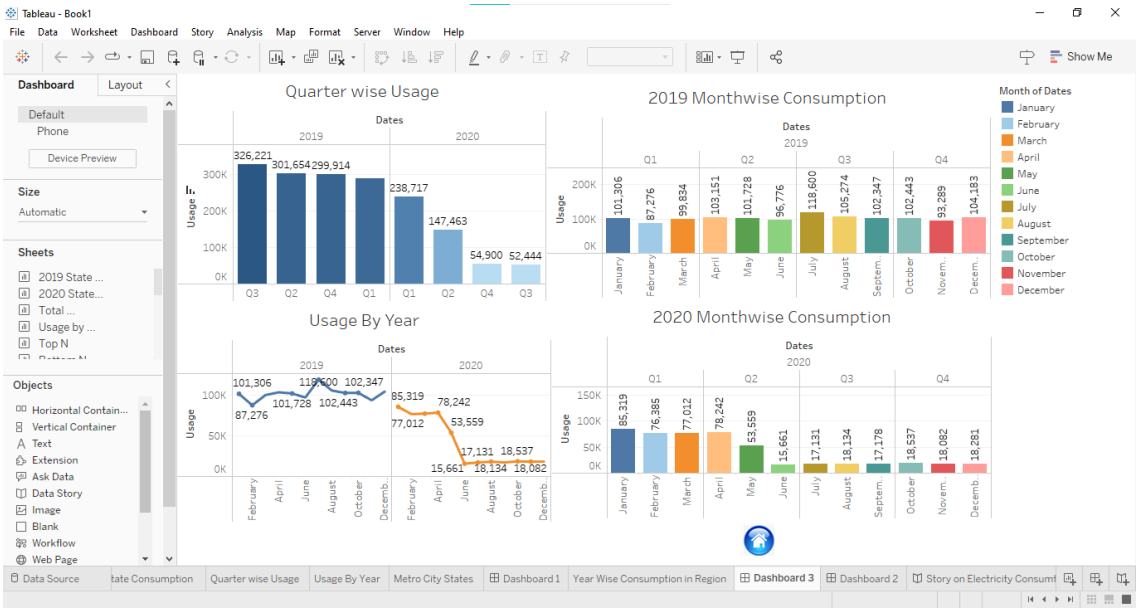
Work sheets are created using Tableau with given dataset, the dashboard and stories are created using the worksheets. We have published our Dashboard and Story file in Tableau Public. The published dashboard and story are given by

Dashboard:

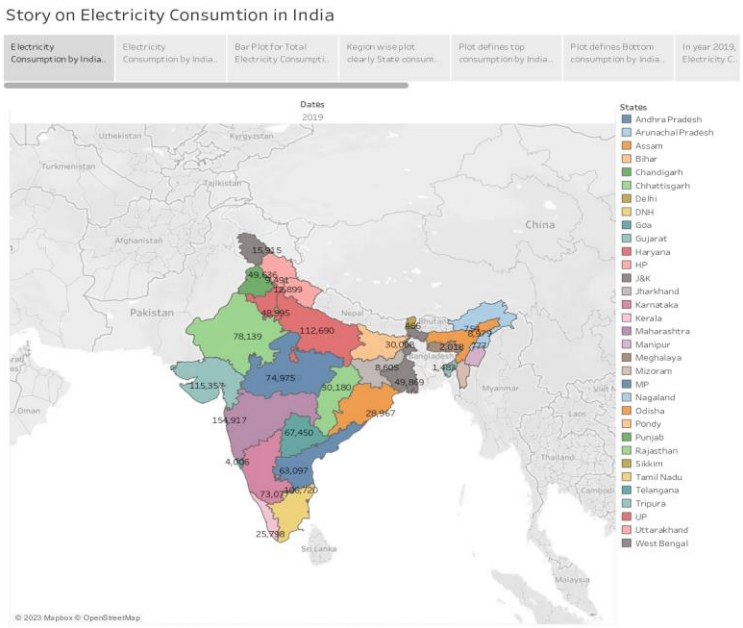




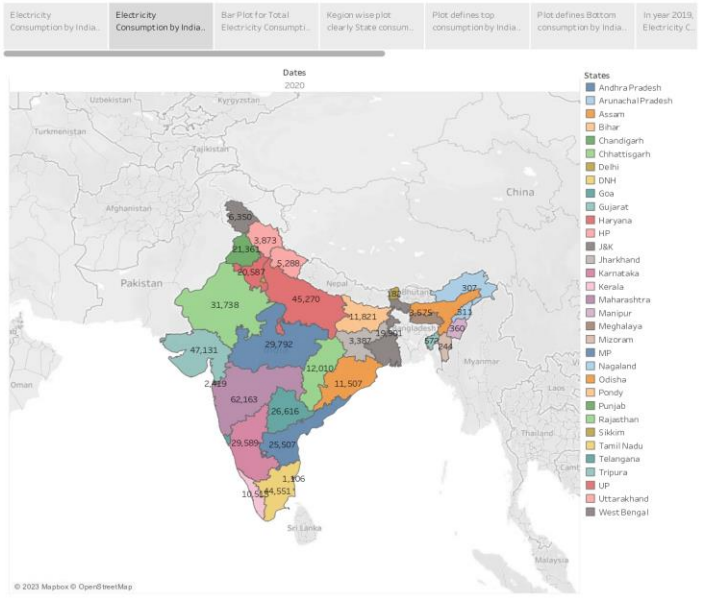
Project Report Template



Story:



Story on Electricity Consumtion in India



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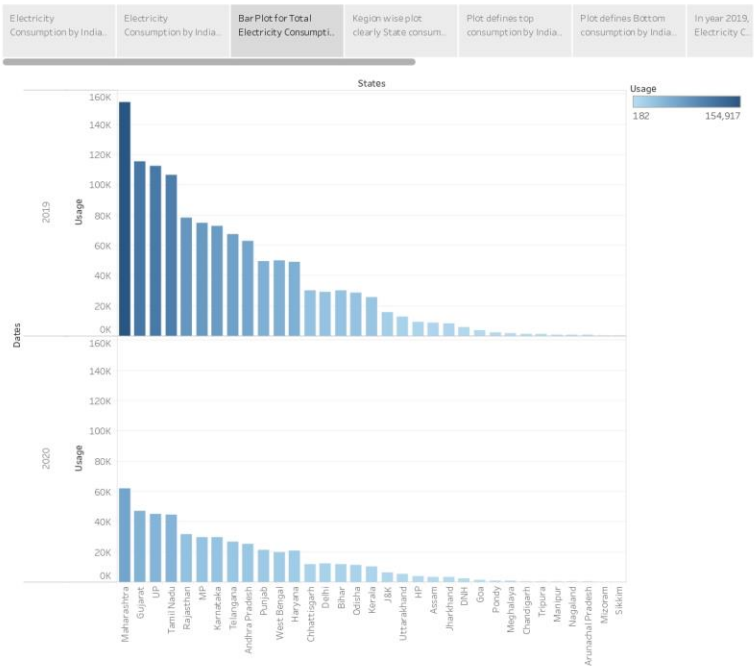

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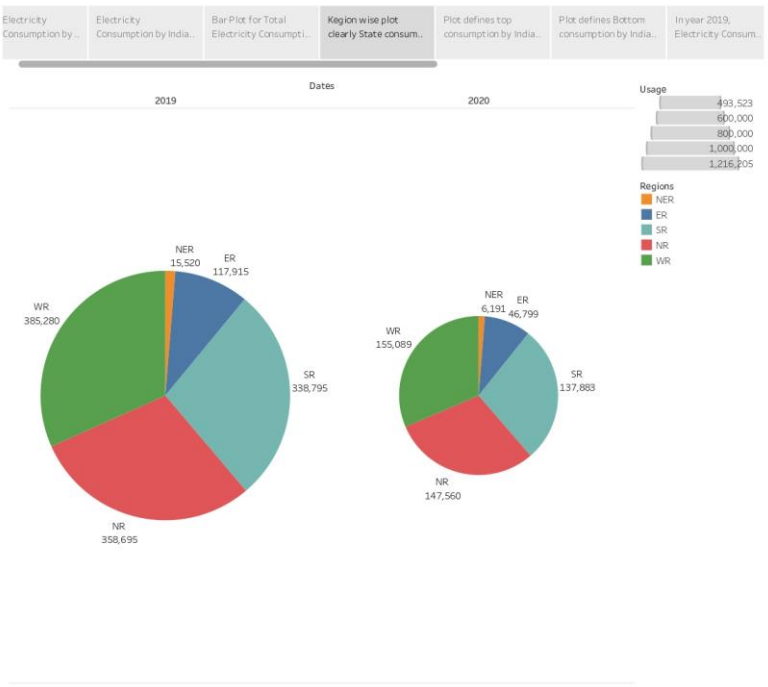

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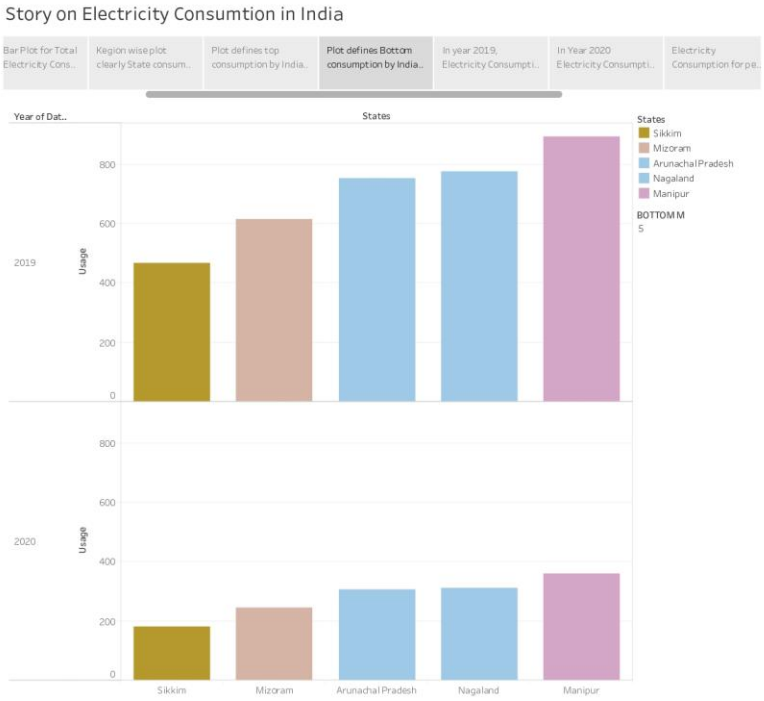
Story on Electricity Consumtion in India
Bar Plot for Total Electricity Cons..
Kegion wise plot clearly State consum..
Plot defines top consumption by India..
Plot defines Bottom consumption by India..
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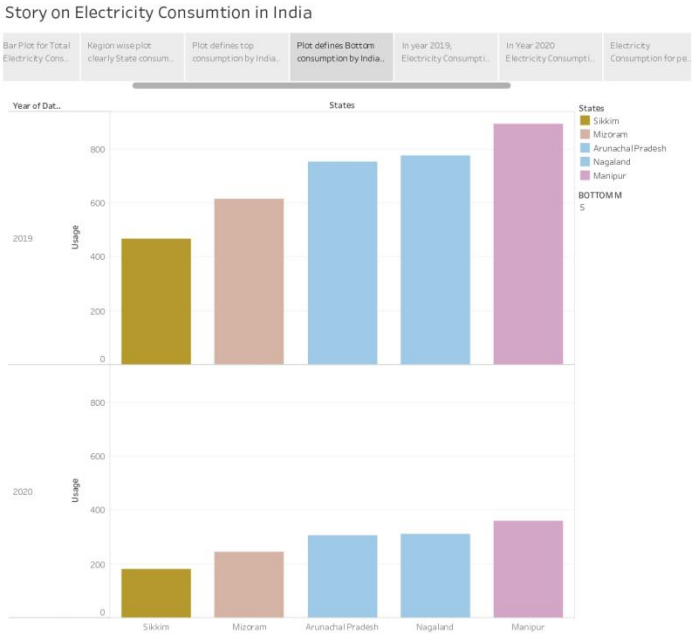
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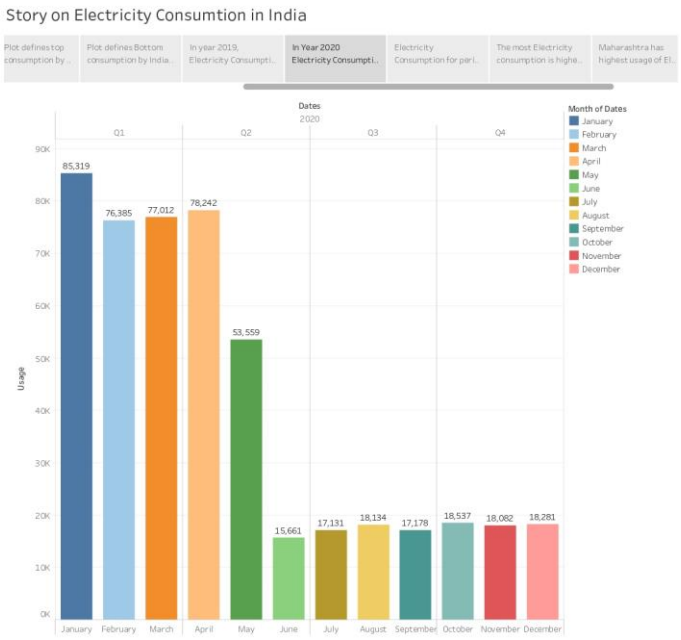
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Electricity Consumption for peri..
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Maharashtra has highest usage of El..
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December
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90K
80K
70K
60K
50K
40K
30K
20K
10K
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85,319
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53,559
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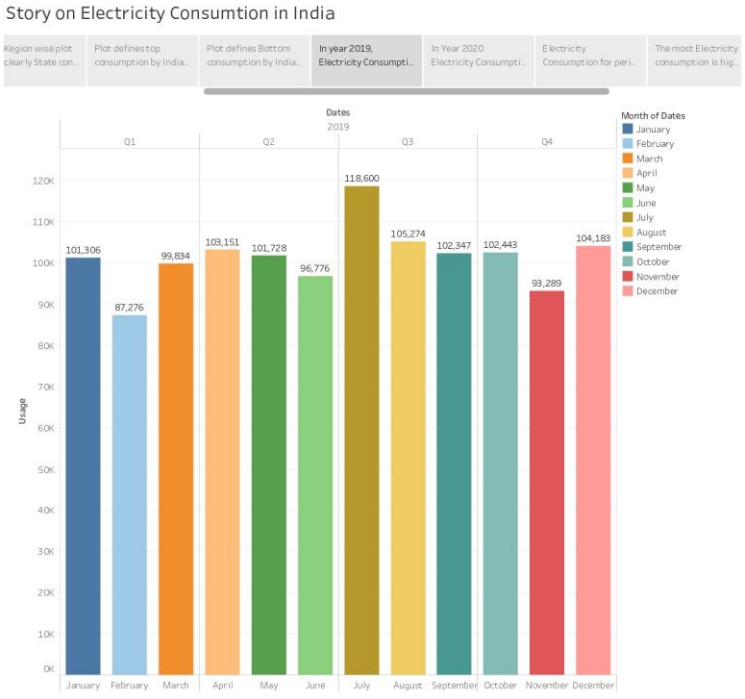
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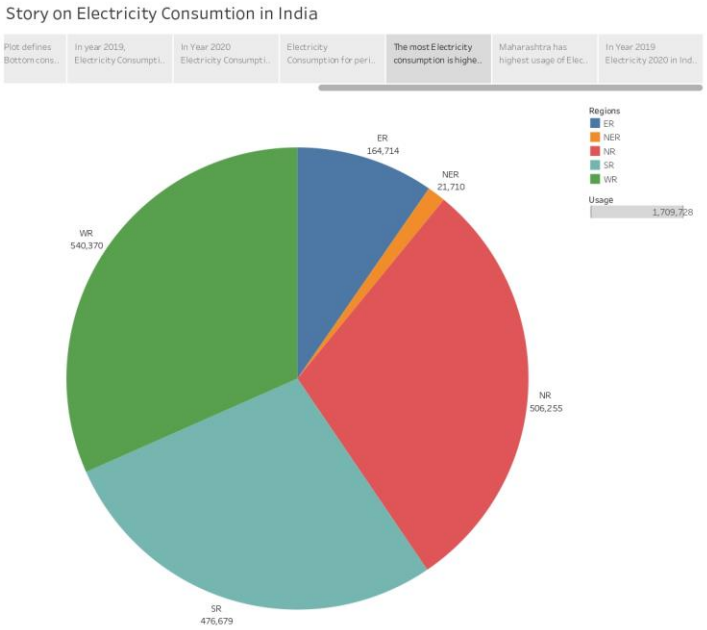
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In Year 2019 Electricity 2020 in Ind..
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Usage
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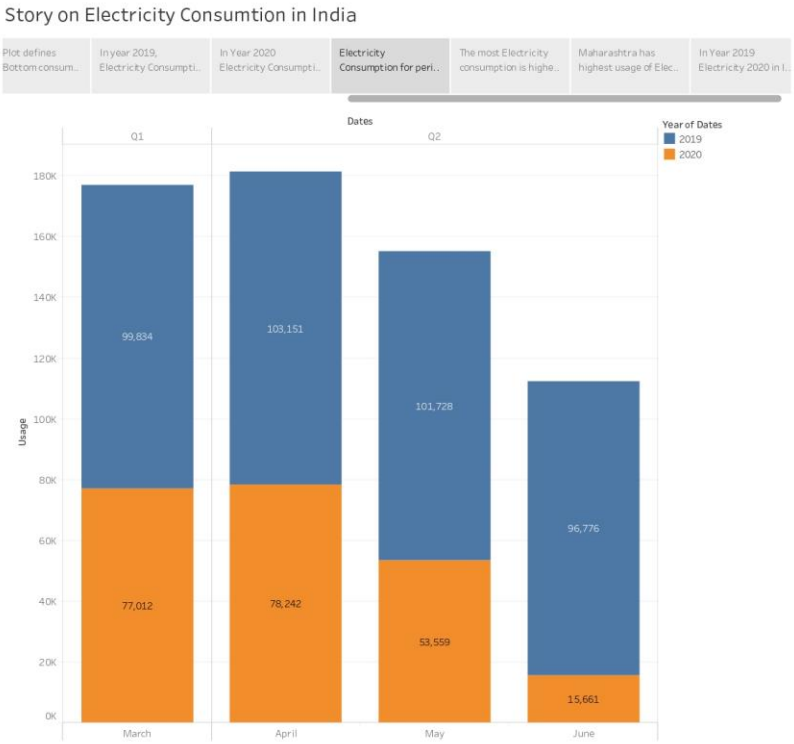
ER 164,714
NER 21,710
NR 506,255
SR 476,679
WR 540,370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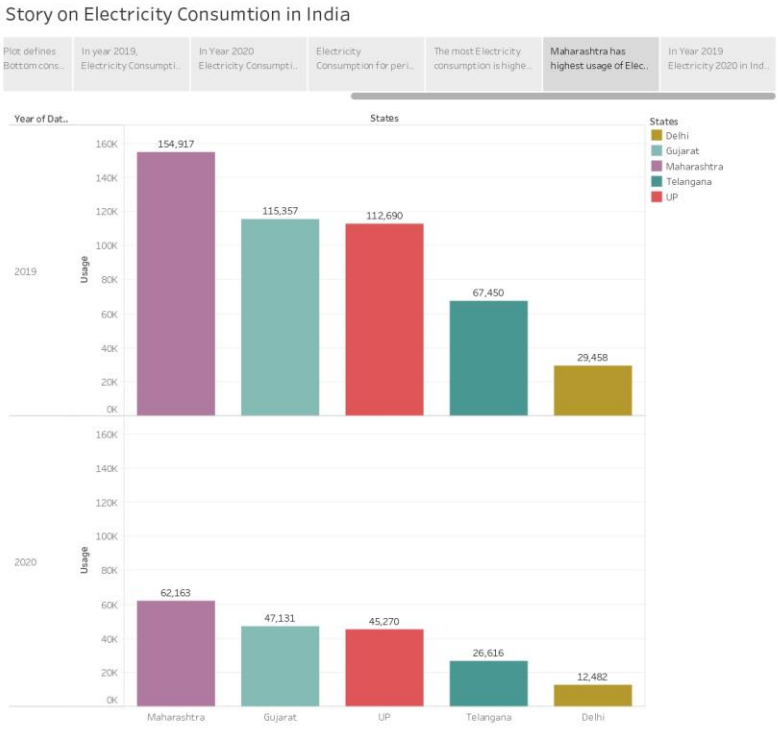
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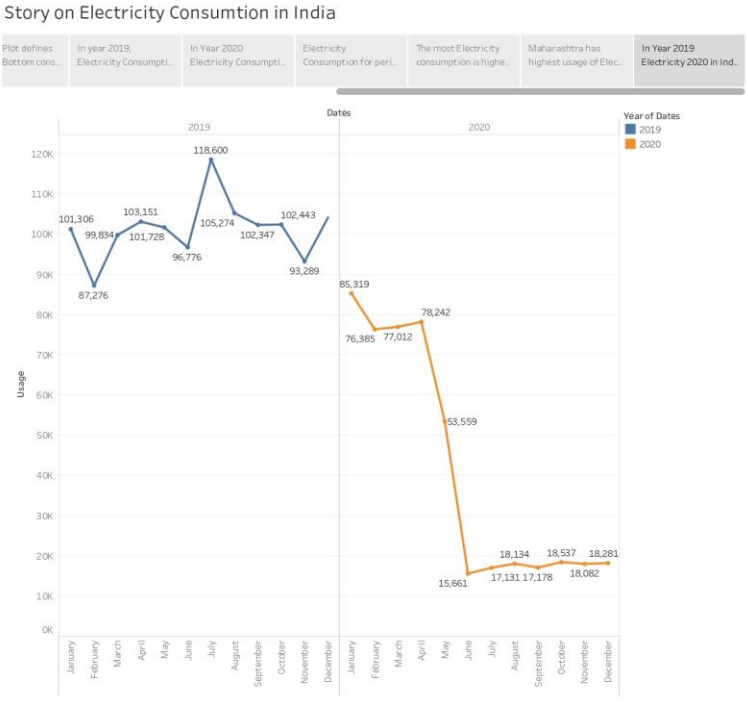
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4 ADVANTAGES & DISADVANTAGES

By this proposed solution we can overview detailed data on Electricity Consumption Analysis. This project gives the clear idea on Unique data visualization or graphs on a certain topic, the list of charts is

Advantages of electricity consumption:

- Convenience: Electricity has made our lives easier and more comfortable. We use electricity for lighting, cooking, heating, and cooling, among other things. It is an essential part of our daily lives, and we can't imagine life without it.

- Efficiency: Electricity is an efficient form of energy that can be easily converted into other forms of energy, such as mechanical or heat energy. It is a versatile form of energy that can be used in various applications, from powering light bulbs to running heavy machinery.

- Clean energy: Electricity is a clean energy source when it is produced from renewable sources such as wind, solar, hydro, and geothermal power. It does not produce greenhouse gas emissions or air pollutants that contribute to climate change and air pollution.

- Cost-effective: Electricity can be generated at a lower cost than other forms of energy, such as fossil fuels. This is especially true for renewable sources of electricity, which have seen significant cost reductions in recent years.

Disadvantages of electricity consumption:

- Environmental impact: Although electricity from renewable

sources is clean, electricity generated from fossil fuels produces greenhouse gases and other pollutants that harm the environment and contribute to climate change.

- Dependency: We have become dependent on electricity for many aspects of our daily lives. Power outages can disrupt our lives, and we need to have backup plans to cope with them.

- Infrastructure: Generating and distributing electricity requires a significant amount of infrastructure, including power plants, transmission lines, and substations. This infrastructure can be expensive and requires ongoing maintenance and upgrades.

- Safety hazards: Electricity can be dangerous if not handled properly. Electrical shocks, fires, and explosions can result from faulty wiring, overloaded circuits, or other electrical malfunctions/

5 APPLICATIONS

Electricity consumption analysis can have a wide range of applications in various fields. Here are some examples:

- Energy Management: Electricity consumption analysis can help businesses and households optimize their energy usage and reduce their overall energy costs. By analyzing patterns in energy consumption, it is possible to identify areas where energy is being wasted and take steps to rectify it.
- Sustainability: As climate change and sustainability become increasingly important issues, electricity consumption analysis can help individuals and organizations understand their carbon footprint and take steps to reduce it. This can involve identifying the biggest sources of energy consumption and finding ways to reduce them.

- Building Management: Electricity consumption analysis can be used in building management to identify areas where energy is being wasted and to optimize the operation of building systems such as HVAC (Heating, Ventilation and Air Conditioning) systems, lighting, and appliances. This can help reduce energy costs and improve the overall efficiency of the building.
- Industrial Processes: Electricity consumption analysis can be used in industrial processes to optimize energy usage and improve production efficiency. By analyzing the energy consumption of individual machines or processes, it is possible to identify areas where energy is being wasted and take steps to rectify it.
- Demand Response: Electricity consumption analysis can be used to manage demand response programs, where energy providers offer incentives to customers to reduce their energy consumption during peak demand periods. By analyzing patterns in energy consumption, it is possible to identify customers who are willing and able to reduce their energy usage during peak periods.

Overall, electricity consumption analysis can be a valuable tool for businesses, households, and energy providers to improve energy efficiency, reduce costs, and contribute to a more sustainable future

6 CONCLUTION

There has been a significant increase in electricity consumption in India over the past few decades, particularly in urban areas. The residential sector is the largest consumer of electricity in India, followed by the industrial and commercial sectors. The states of Maharashtra, Uttar Pradesh, and Tamil Nadu have the highest electricity consumption rates in India, while states like Bihar and Jharkhand have much lower consumption rates.

There are significant regional variations in electricity consumption patterns within India, possibly due to differences in climate, economic development, or infrastructure.
There are certain peak hours during the day when electricity demand is highest, particularly in the evening, and this information can be used to optimize the electricity grid and improve energy efficiency.
There is a need to invest in energy-efficient appliances and renewable energy sources to reduce electricity consumption and mitigate the environmental impacts of electricity generation in India.

7 FUTURE SCOPE

The future scope of electricity consumption analysis is quite broad, as there are many potential avenues for further exploration and research. Here are a few examples:
Predictive modeling: One potential future direction for electricity consumption analysis is to use predictive modeling techniques to forecast future trends in electricity demand. This could be useful for energy planners and policymakers in developing strategies for meeting future electricity needs and reducing the environmental impact of increased electricity consumption.
Regional and country-specific analysis: While the analysis of electricity consumption in India is informative, there is still much to be learned about electricity consumption patterns in other regions and countries. Future research could focus on analyzing electricity consumption data from other regions and countries, identifying similarities and differences in consumption patterns, and exploring the underlying factors driving these differences.
Energy efficiency analysis: Another potential area for future analysis is energy efficiency, with a focus on identifying the most effective strategies for reducing electricity consumption. This could involve analyzing the effectiveness of various energy efficiency

programs and policies, as well as exploring the potential for new technologies and innovations to improve energy efficiency.
Environmental impact analysis: Given the significant environmental impacts of electricity consumption, future analysis could focus on quantifying and mitigating these impacts. This could involve exploring the potential for renewable energy sources, identifying opportunities for energy conservation and efficiency, and assessing the environmental impacts of electricity generation and transmission.
Overall, the future scope of electricity consumption analysis is wide-ranging, and there are many potential avenues for further exploration and research.

8 APPENDIX

tableau public link
source code

Smart Internz

Project Report Template