

Plugging into the Future: An Exploration of Electricity Consumption Patterns

1.INTRODUCTION

1.1 Overview

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 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. 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.

1.2 Purpose

People use electricity for lighting, heating, cooling, and refrigeration and for operating appliances, computers, electronics, machinery, and public transportation systems

Reducing energy use in your home saves you money, increases our energy security, and reduces the pollution that is emitted from non-renewable sources of energy.

Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

Build empathy

The information you add here should be representative of the observations and research you've done about your users.

[View template feedback](#)

Need some inspiration?

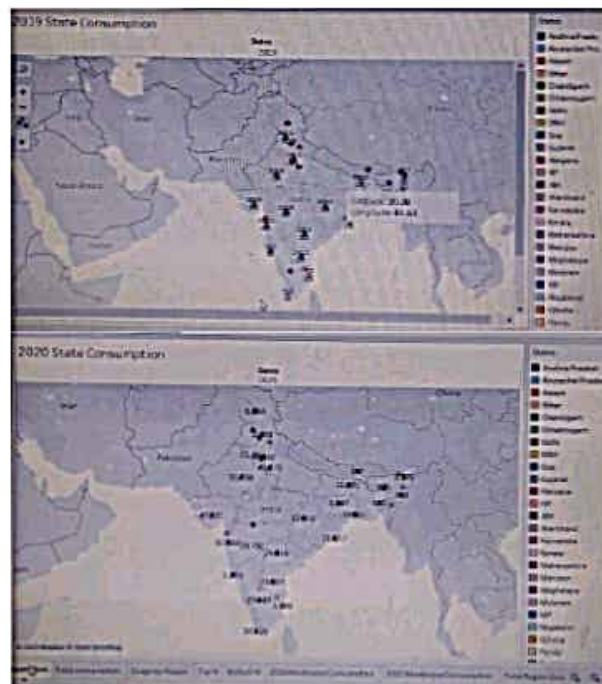
See a preview of the template in action.

[View feedback](#)

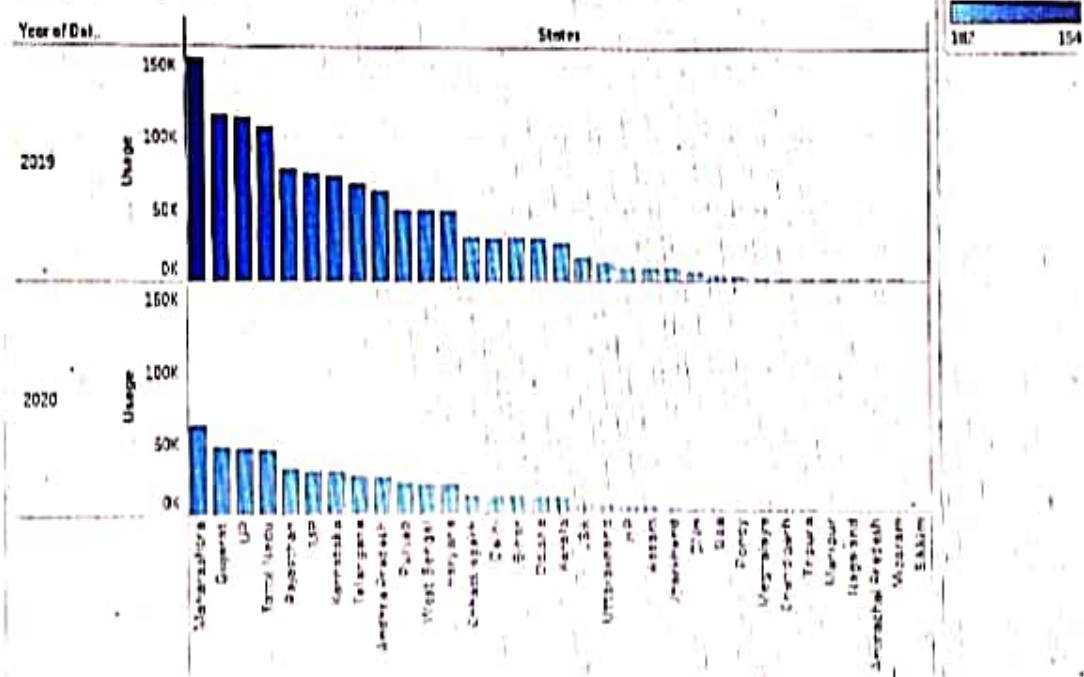
2.2 Ideation & Brainstorming Map



3. RESULTS



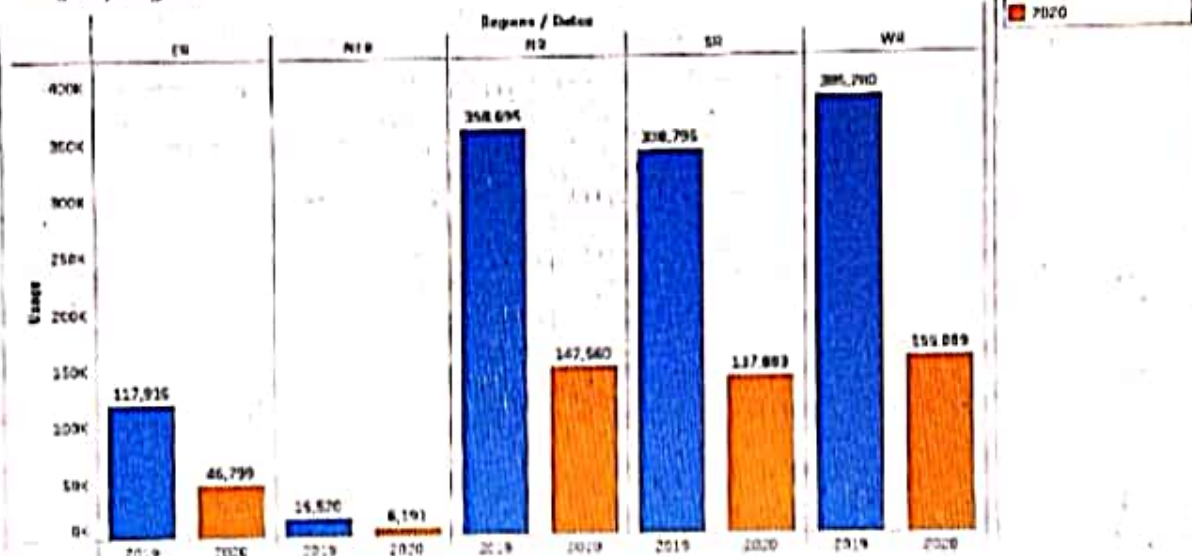
Total consumption



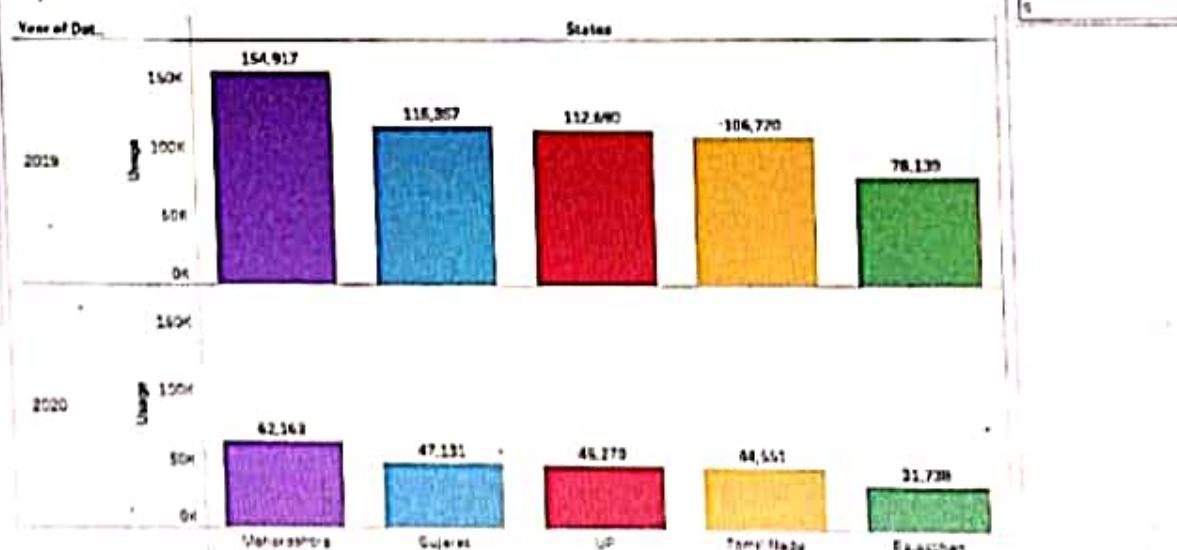
18 Rows

Usage

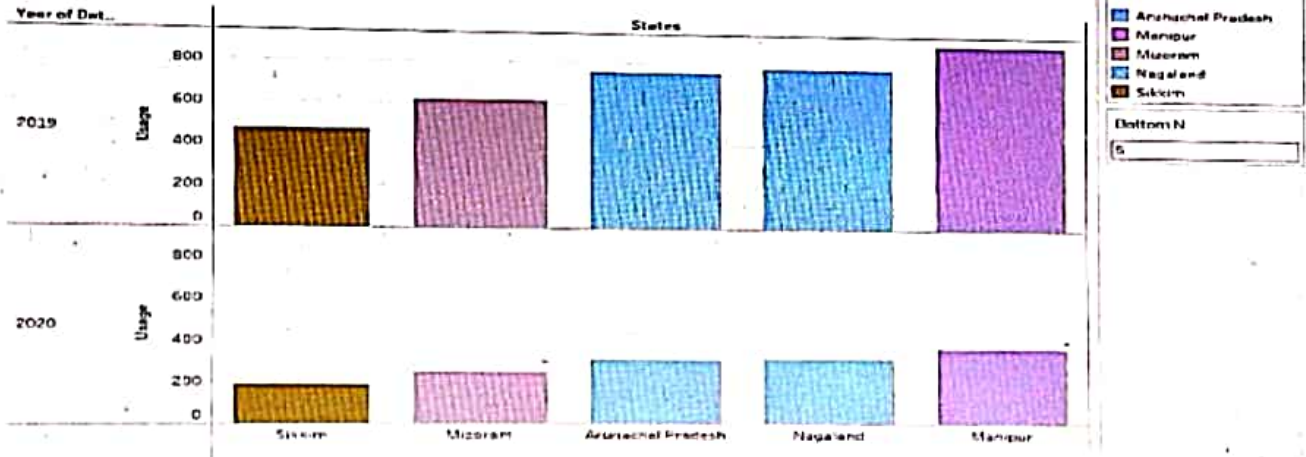
Usage by Region



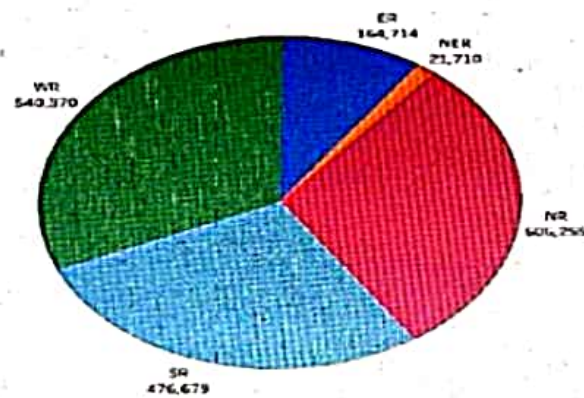
Top N



Bottom N



Total Region Consumption



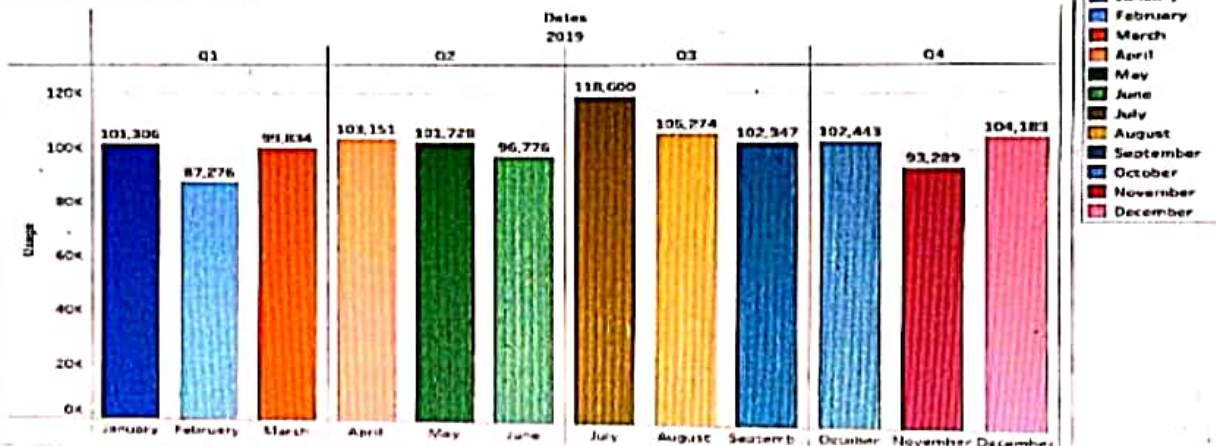
Regions

- ER
- NER
- NR
- SR
- WR

SUM(Users)

1,709,128

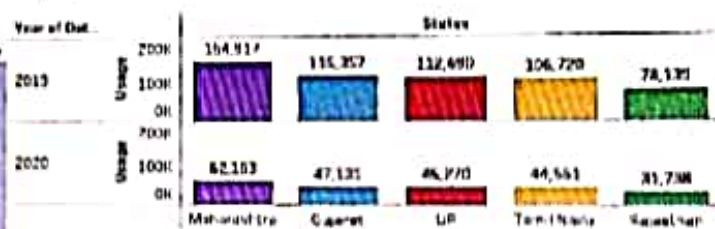
2019 Monthwise Consumption



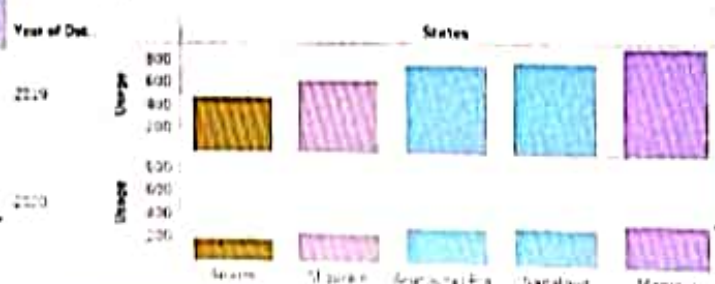
Regionwise State Consumption

Regions	States	2019	2020
E1	Bihar	30,038	11,821
	Madhya Pradesh	8,436	8,817
	Odisha	28,967	11,607
	Telangana	400	102
	West Bengal	49,869	17,931
A18	Andhra Pradesh	754	807
	Assam	8,979	8,876
	Chhattisgarh	815	360
	Goa	2,018	821
	Gujarat	614	244
	Haryana	777	311
	Karnataka	1,483	572
	Kerala	1,472	511
	Maharashtra	20,450	12,482
	Mizoram	48,995	23,587
N18	Nagaland	1,481	3,478
	Northeast	15,814	6,360
	Punjab	49,636	21,361
	Rajasthan	78,118	32,738
	Tamil Nadu	1,481	3,478

Top N



Bottom N

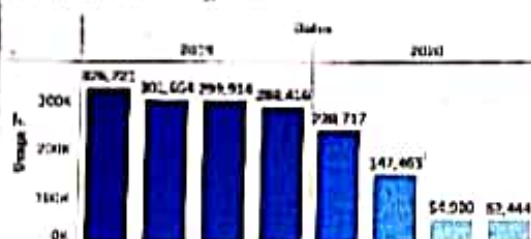


- States
- Andhra Pradesh
- Assam
- Bihar
- Chhattisgarh
- Goa
- Gujarat
- Haryana
- Karnataka
- Kerala
- Maharashtra
- Mizoram
- Nagaland
- Northeast
- Punjab
- Rajasthan
- Tamil Nadu
- Telangana
- West Bengal

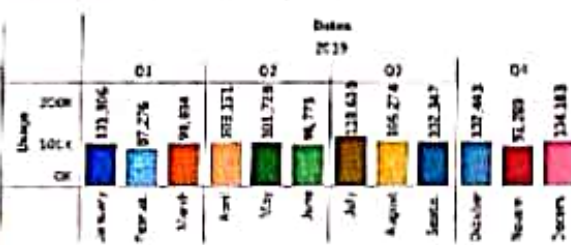
dash board 6

dash board 3

Quarter Wise Usage

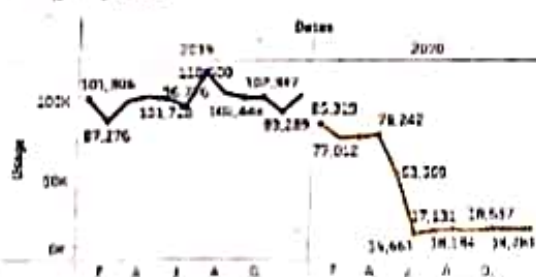


2019 Monthwise Consumption

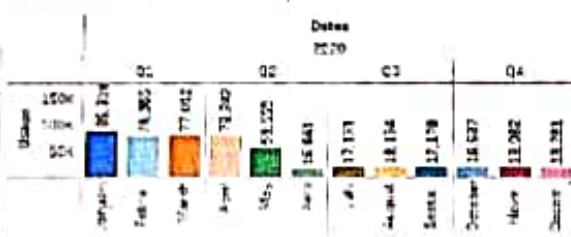


- Usage
- 2019
- 2020
- Year of Dates
- 2019
- 2020
- Month of Dates
- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

Usage By Year



2020 Monthwise Consumption



dash board 6

Regionwise State Consumption

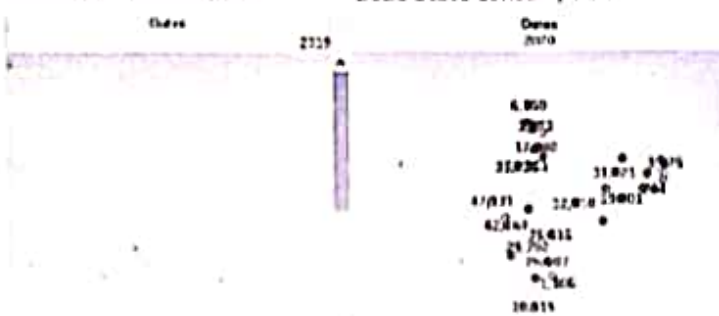
Regions	States	2019	2020
ER	Bihar	30,008	11,821
	Jharkhand	8,605	3,387
	Odisha	28,967	11,507
	Sikkim	466	182
	West Bengal	49,869	19,901
NE	Arunachal Pradesh	754	307
	Assam	8,979	3,575
	Manipur	895	360
	Meghalaya	2,018	821
	Mizoram	614	244
	Nagaland	777	311
	Tripura	1,483	572
NR	Chandigarh	1,472	611
	Delhi	29,458	12,482
	Haryana	48,995	20,587
	HP	9,431	3,673
	JK	15,915	6,350
	Punjab	49,636	21,361

- States
- Andhra Pradesh
 - Arunachal Pradesh
 - Assam
 - Bihar
 - Chandigarh
 - Chhattisgarh
 - Delhi
 - DNI
 - Goa
 - Gujarat
 - Haryana
 - HP
 - JK
 - Jharkhand
 - Karnataka
 - Kerala
 - Maharashtra
 - Manipur
 - Meghalaya
 - Mizoram
 - MP
 - Nagaland
 - Odisha
 - Pondy

2019 State Consumption

2020 State Consumption

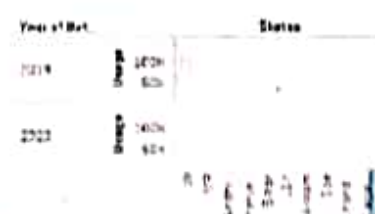
year wise consumption in



Total Region Consumption



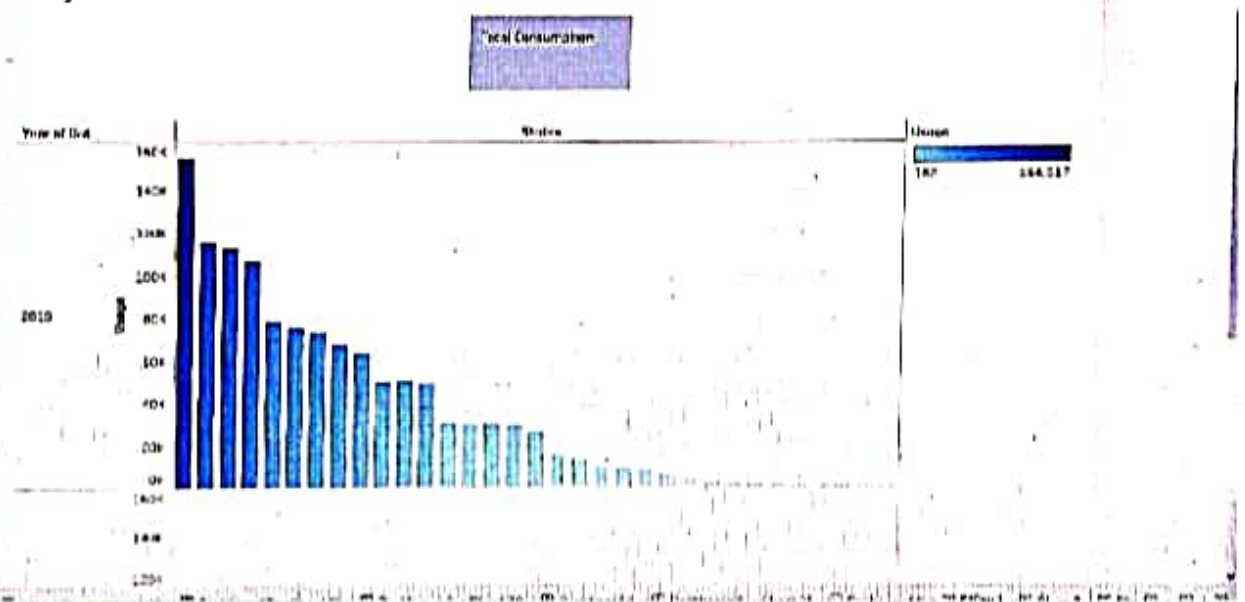
Total consumption



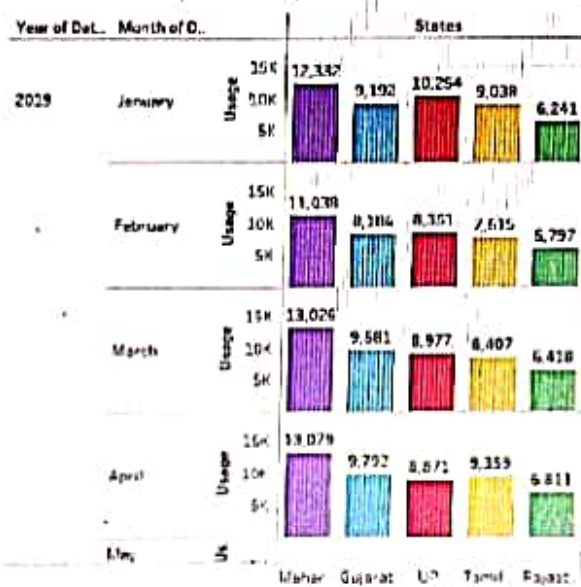
dashboard 2

- States
- Andhra Pradesh
 - Arunachal Pradesh
 - Assam
 - Bihar
 - Chandigarh
 - Chhattisgarh
 - Delhi
 - DNI
 - Goa
 - Gujarat
 - Haryana
 - HP
 - JK
 - Jharkhand
 - Karnataka
 - Kerala
 - Maharashtra
 - Manipur
 - Meghalaya
 - Mizoram
 - MP
 - Nagaland
 - Odisha
 - Pondy
- Regions
- ER
 - NE
 - NR
 - JK
 - JK
- Usage
- 182 154.9

Story 1



Monthwise Top Consumption



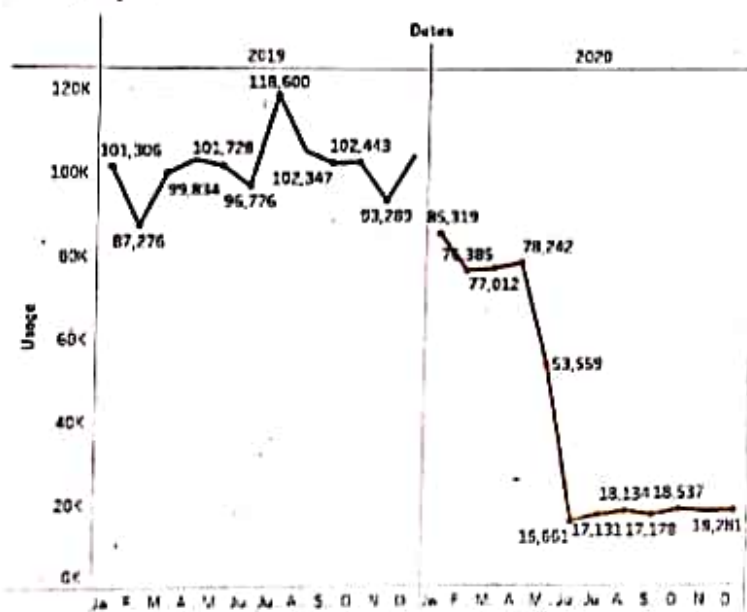
States

- Gujarat
- Maharashtra
- Rajasthan
- Tamil Nadu
- UP

Top N

5

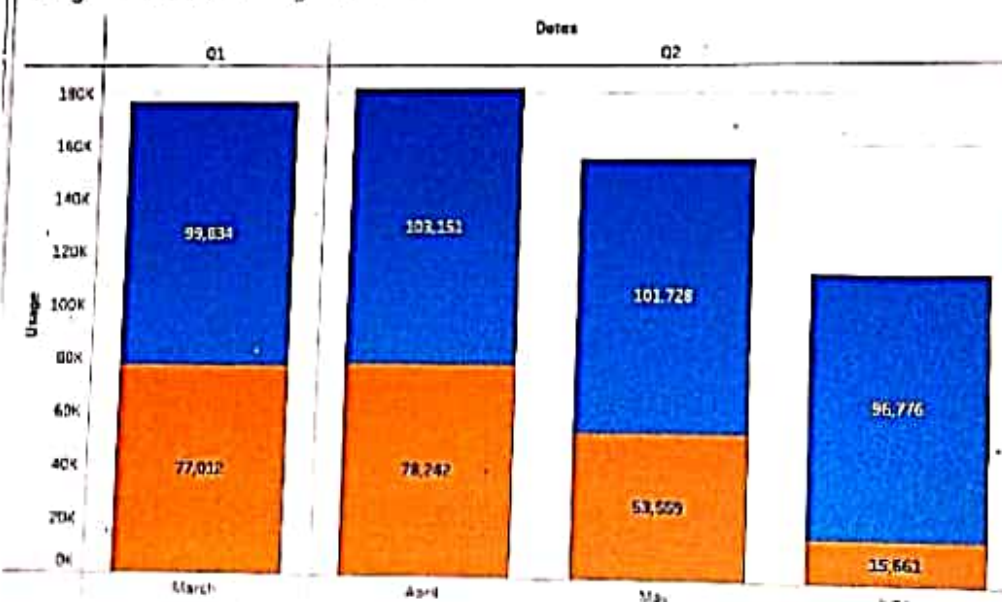
Usage By Year



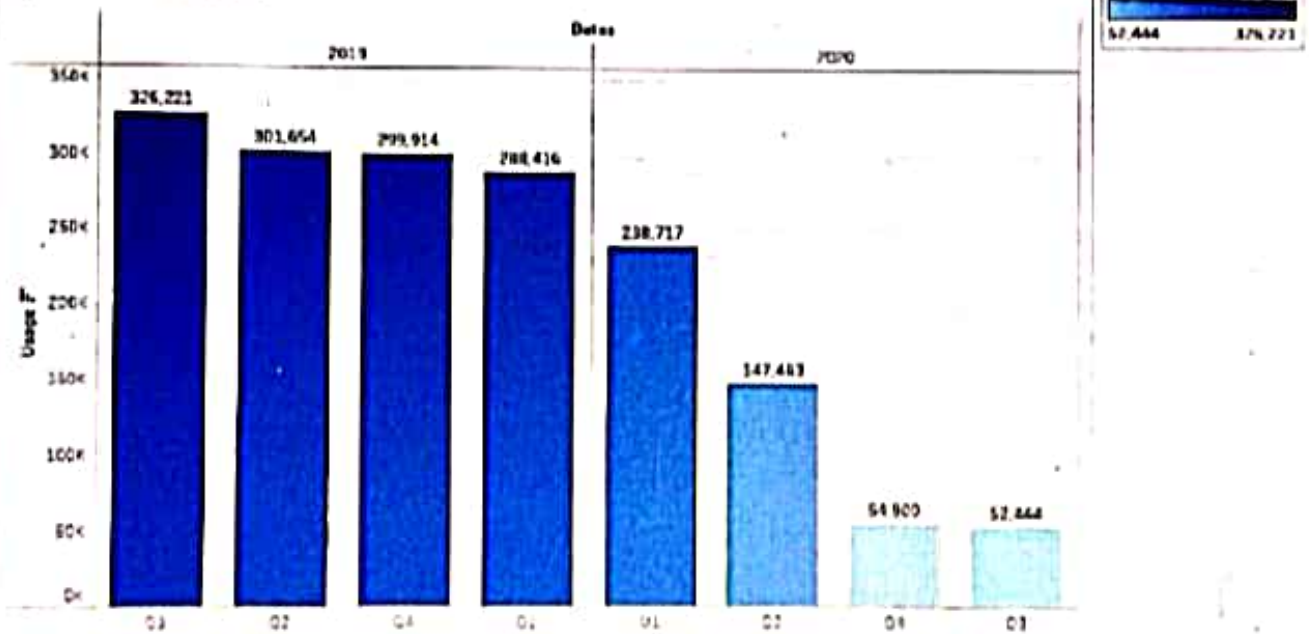
YEAR(Date)

- 2019
- 2020

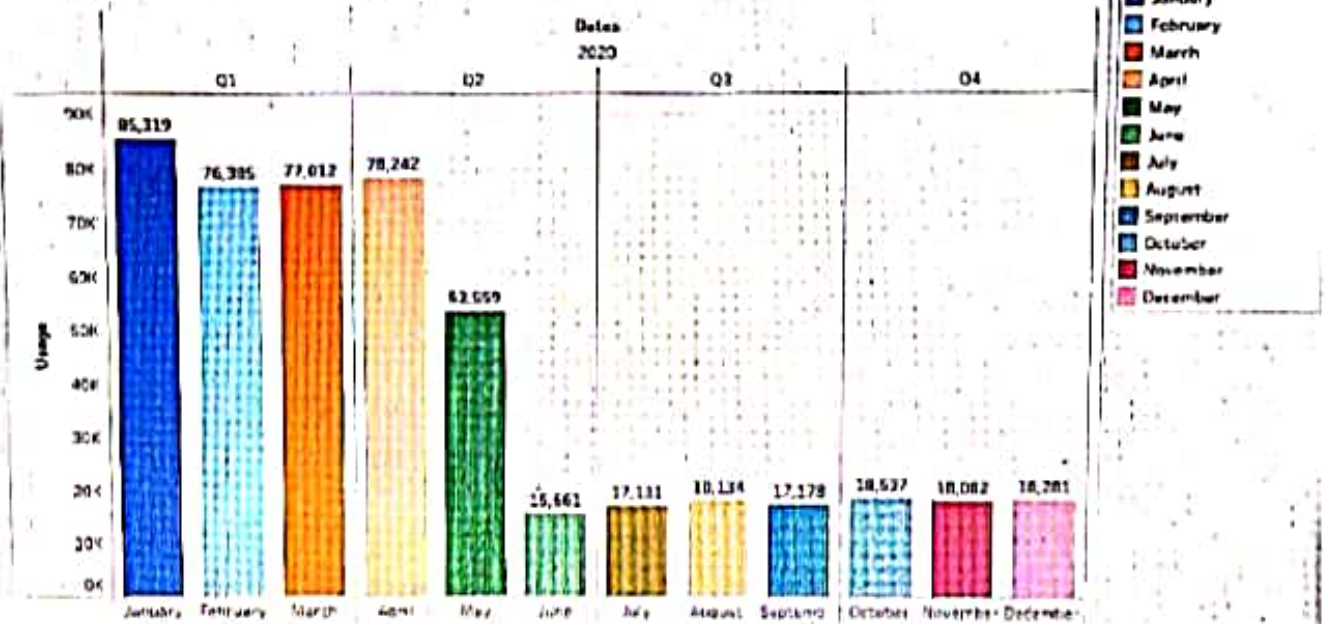
Usage before and during Lockdown



Quarter Wise Usage



2020 Monthwise Consumption



4.ADVANTAGES & DISADVANTAGES

Advantages:

- 1.Lower maintenance cost.
- 2.More efficient.
- 3.No tailpipe emission.
- 4.We all know that it can be set up in many sizes.

Disadvantages:

- 1.More expensive than gasoline.
- 2.Loss of fish species.
- 3.Sometimes messes up wildlife.
- 4.Dependent on precipitation.

5.APPLICATIONS

People use electricity for lighting, heating, cooling, and refrigeration and for operating appliances, computers, electronics, machinery, and public transportation systems.

6.CONCLUSION

Electricity is the backbone of modern society. Our life will go back to the primitive age without electricity. There is a need for rational use of electricity, as it is largely produced from non- renewable sources like coal and water.

7.FUTURE SCOPE

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.
