Project Development Phase

Model Performance Test

Date	23/06/25
Team ID	LTVIP2025TMID59134
Project Name	Plugging into the Future: An Exploration of Electricity Consumption Patterns Using Tableau
Maximum Marks	

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

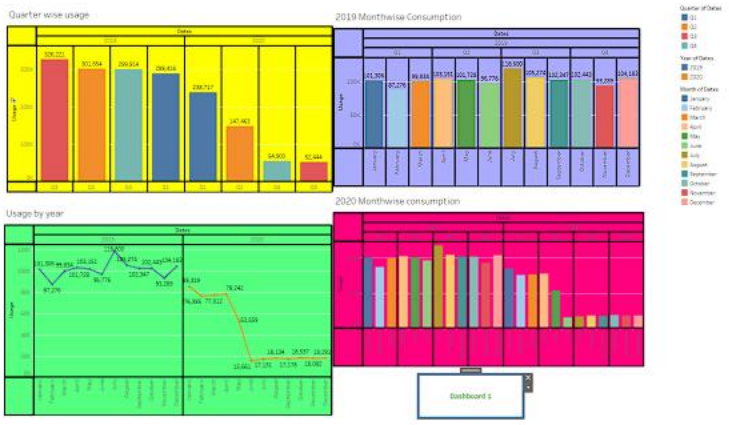
S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Electricity consumption data from states and regions of India from 2019–2020 in .csv. Columns used include Region, State, Date, MU, Month, Quarter, and Lockdown.
2.	Data Preprocessing	Null values handled, new fields derived (Quarter, Month, Lockdown), filtered for required years. This was done using Python (Pandas) and stored in MySQL before importing into Tableau.
3.	Utilization of Filters	Filters applied in dashboard: • **Region** • **State** • **Year** • **Quarter** • **Lockdown (Yes/No)** Used across all dashboards to enhance interactivity. | | 4 | **Calculated Fields Used** | Created fields in Tableau: • Year(Date) • Month(Date) • Quarter(Date) • Lockdown Label for categorizing data before and after lockdown. • Top N States (for usage comparison). | | 5 | **Dashboard Design** | **Number of Visualizations:** 3 Dashboards

		Each dashboard includes: • Line Chart (Monthly trends) • Bar Chart (State-wise comparison) • Map / Tree Map (Region-wise consumption) • KPI indicators (Total and Average Usage) 📎 Refer: *Screenshots of Dashboard.pdf* | | 6 | **Story Design** | **Number of Slides/Graphs in Story:** 15 Covers: • Intro & Problem • State-wise Usage • Lockdown Comparison • Regional Patterns • Seasonal Trends • Insights + Conclusion
4.	Calculation fields Used	

Field Name	**Formula (in Tableau)**	**Purpose**
Year	YEAR([Date])	To filter and group usage by year (2019, 2020)
Month	DATENAME('month', [Date])	For month-wise trend analysis
Quarter	QUARTER([Date]) or DATENAME('quarter', [Date])	To compare quarterly usage
Lockdown Flag	IF [Date] < #2020-03-24# THEN 'Pre-Lockdown' ELSE 'Post-Lockdown' END	To analyze impact of COVID-19 lockdown
Total Usage	SUM([MU])	Calculate total electricity consumption
Average Usage	AVG([MU])	Show average usage per month/region

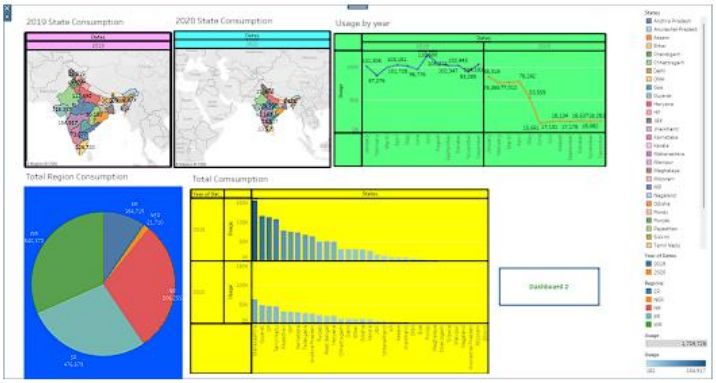
		Top States	INDEX() (used with sorting + filters)	To display top 5 and bottom 5 states
5.	Dashboard design	No of Visualizations / Graphs - 3 Dashboards , 8 Visualizations / Graphs.		

Dashboard 1 :

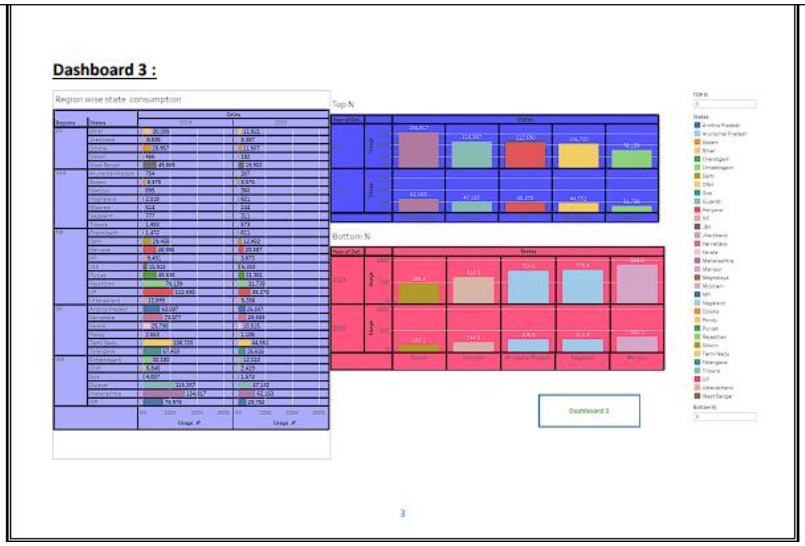
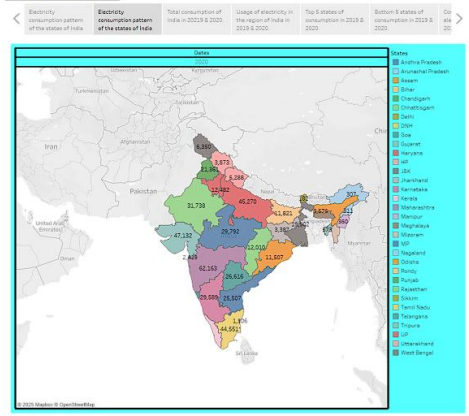
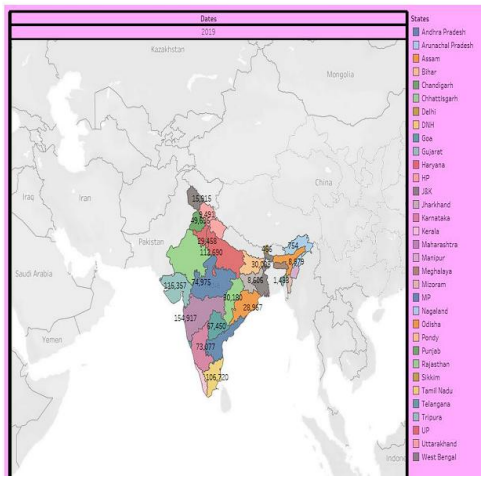


1

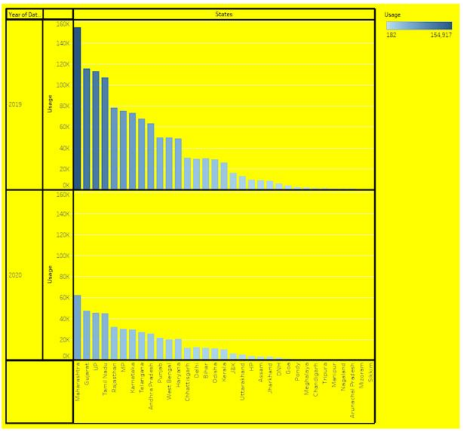
Dashboard 2 :



2

		
6	Story Design	No of Visualizations / Graphs -15 slides. Report of Story:  

Electricity consumption pattern of the states of India | Electricity consumption pattern of the states of India | Total consumption of India in 2021 & 2020. | Usage of electricity in the region of India in 2019 & 2020. | Top 5 states of consumption in 2019 & 2020. | Bottom 5 states of consumption in 2019 & 2020.



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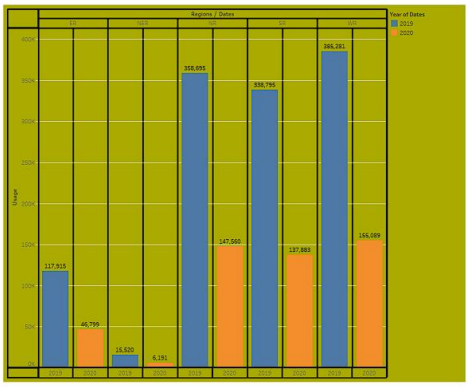

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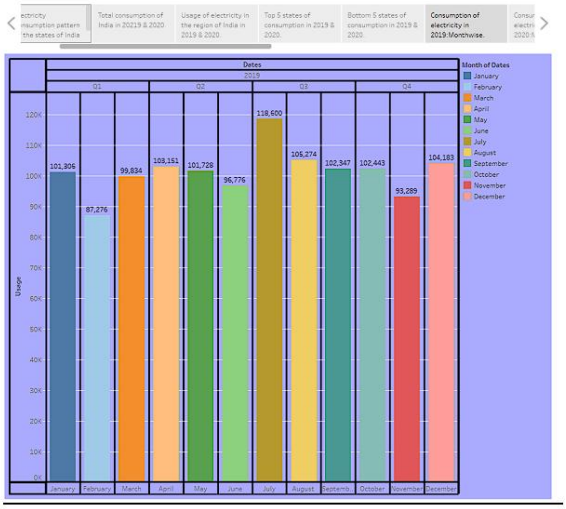
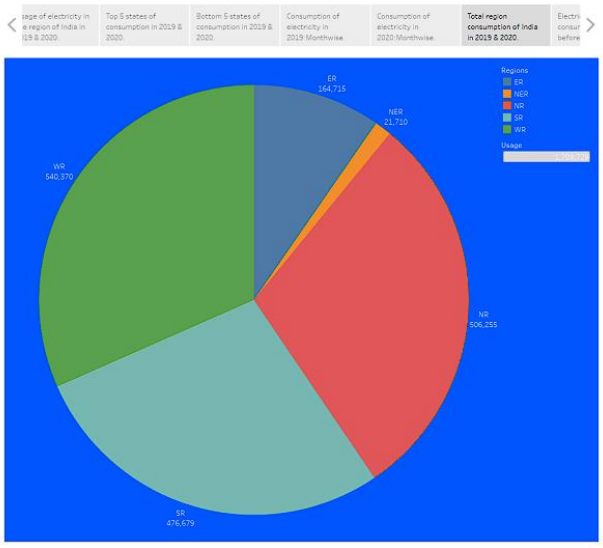
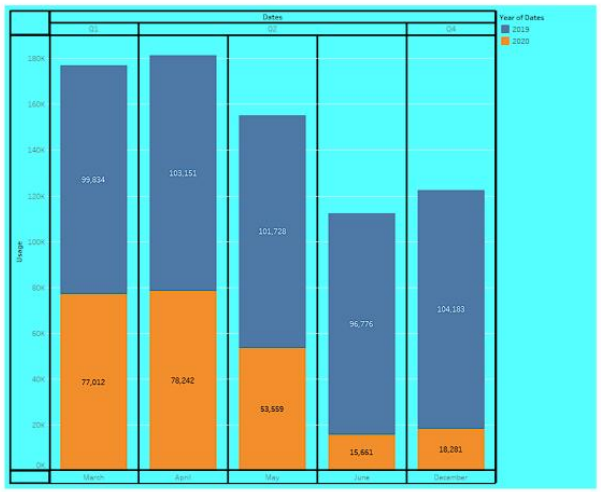
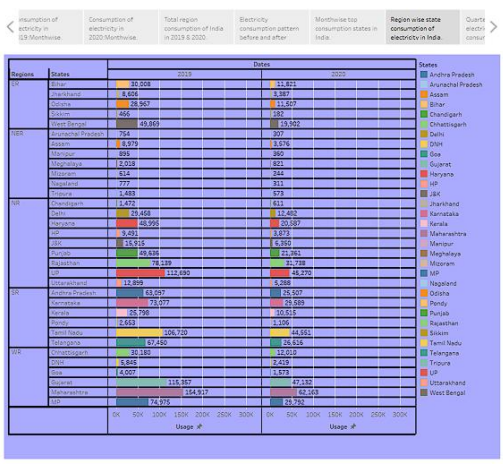
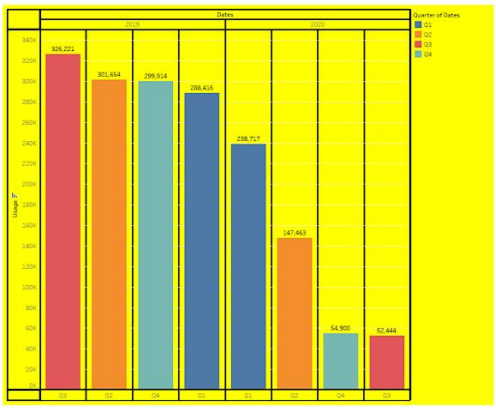
Electricity consumption pattern of the states of India
Electricity consumption pattern of the states of India
Total consumption of India in 2021 & 2020.
Usage of electricity in the region of India in 2019 & 2020.
Top 5 states of consumption in 2019 & 2020.
Bottom 5 states of consumption in 2019 & 2020.
Year of Dat..
States
2019
2020
Usage
466.4
614.3
754.0
774.8
894.6
182.2
244.0
306.3
310.9
360.2
Sikkim
Mizoram
Arunachal Pradesh
Nagaland
Manipur
States
Arunachal Pradesh
Manipur
Mizoram
Nagaland
Sikkim
Bottom N

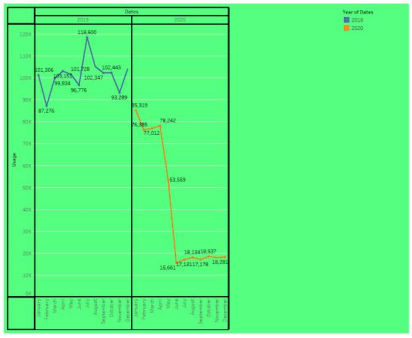

Total consumption of India in 2021 & 2020.
Usage of electricity in the region of India in 2019 & 2020.
Top 5 states of consumption in 2019 & 2020.
Bottom 5 states of consumption in 2019 & 2020.
Consumption of electricity in 2019 Monthwise.
Dates
2019
Q1
Q2
Q3
Q4
Usage
101,906
87,276
99,834
103,151
101,728
96,776
118,600
105,274
102,347
102,443
93,289
104,183
January
February
March
April
May
June
July
August
September
October
November
December
Month of Dates

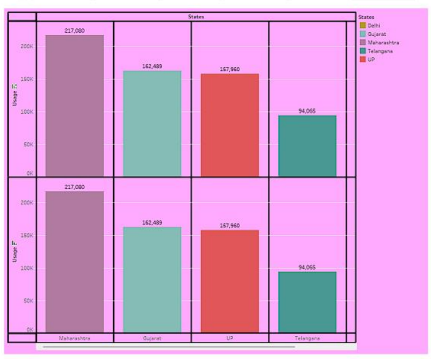

Total consumption of India in 2021 & 2020.
Usage of electricity in the region of India in 2019 & 2020.
Top 5 states of consumption in 2019 & 2020.
Bottom 5 states of consumption in 2019 & 2020.
Consumption of electricity in 2019 Monthwise.
Consumption of electricity in 2020 Monthwise.
Dates
Year of Dates
All
2019
2020
Month of Dates
January
February
March
April
May
June
July
August
September
October
November
December

		 Total region consumption of India in 2019 & 2020. ER 164,715 NER 21,710 NR 506,255 SR 476,679 WR 540,370 Regions ER NER NR SR WR Usage  Electricity consumption pattern before and after Dates Q1 Q2 Q4 Year of Dates 2019 2020 Usage 180K 160K 140K 120K 100K 80K 60K 40K 20K 0K 99,834 103,151 101,728 96,776 104,183 77,012 78,242 53,559 15,661 18,281 March April May June December  Monthwise top consumption states in India. Year of Dat.. Month of D.. States 2019 January February March April May June July August Usage 15K 10K 5K 12,332 9,192 10,254 9,038 11,038 8,187 8,351 7,615 13,026 9,581 8,977 8,407 13,079 9,792 8,871 9,359 12,667 9,556 9,702 8,879 12,395 9,632 8,873 8,500 15,428 11,160 10,652 10,674 13,529 Maharashtra Gujarat UP Tamil Nadu States Gujarat Maharashtra Rajasthan Tamil Nadu UP TOP N 5


Region wise state consumption of electricity in India.
Dates
2019
2020
Regions
States
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chandigarh
Chhattisgarh
Delhi
DNH
Goa
Gujarat
Haryana
HP
J&K
Jharkhand
Karnataka
Kerala
Maharashtra
Manipur
Meghalaya
Mizoram
MP
Nagaland
Odisha
Pondy
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
UP
Uttarakhand
West Bengal
Usage


Quarter wise electricity consumption in India.
Dates
2019
2020
Quarter of Dates
Q1
Q2
Q3
Q4
Usage
326,221
301,454
299,914
288,416
238,717
147,463
54,900
52,444


Usage of electricity by year
Dates
2019
2020
Year of Dates
Usage


Electricity consumption in metarocity states.
States
Delhi
Gujarat
Maharashtra
Telangana
UP
Usage FC
Usage P
217,080
162,499
167,960
94,065
Maharashtra
Gujarat
UP
Telangana