

Market Study of the Indian EV/Hybrid Market for AtliQ Motors

F.Y. 2021-2023



AtliQ Motors

by Hari Om



INTRODUCTION

AtliQ Motors is an automotive giant from the USA specializing in electric vehicles (EV). In the last 5 years, their market share rose to 25% in electric and hybrid vehicles segment in North America. As a part of their expansion plans, they wanted to launch their bestselling models in India where their market share is less than 2%. Bruce Haryali, the chief of AtliQ Motors India wanted to do a detailed market study of existing EV/Hybrid market in India before proceeding further. Bruce gave this task to the data analytics team of AtliQ motors and Peter Pandey is the data analyst working in this team.

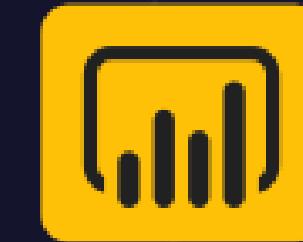


How the Project Was Developed

Data Collection :



Tools Used :



Special Thanks to :



Codebasics



Dhaval Patel



Hemanand Vadivel

A Analytical Approach and Methodology

Assumptions/ Data Cleaning :

- The data for the state of Telangana was missing for the all three years.
- The average prices for vehicle categories have been assumed as follows for this analysis:
 - 2-Wheelers: 85,000
 - 4-Wheelers: 15,00,000

These values are used for illustrative purposes and may not represent actual market prices.
- Names of the few states were corrected.

Data Analysis

- **Trend Analysis:** Analyzed monthly and annual trends to identify patterns and conducted comparative analysis across states.
- **Visualization:** Used Power BI to create interactive dashboards displaying state-wise sales, growth trends, and comparative analysis.
- **CAGR** is used to calculate the growth rate.
- Many More

PRIMARY QUESTIONS



1.List the top 3 and bottom 3 makers for FY 2023 and 2024 in terms of the number of 2-wheelers sold.

2023 BOTTOM STATES

<i>State</i>	<i>EVs Sold</i>
Sikkim	0
Arunachal Pradesh	1
Nagaland	3

2023 TOP STATES

2
0
2
3

<i>State</i>	<i>EVs Sold</i>
Maharashtra	138,810
Karnataka	102,940
Gujarat	75,692

2024 BOTTOM STATES

<i>State</i>	<i>EVs Sold</i>
Sikkim	0
Arunachal Pradesh	3
Nagaland	5

2024 BOTTOM STATES

2
0
2
4

<i>State</i>	<i>EVs Sold</i>
Maharashtra	183,052
Karnataka	148,111
Tamil Nadu	87,405

2. Identify the top 5 states with the highest penetration rate in 2-wheeler and 4-wheeler EV sales in FY 2024.

2 - WHEELERS

State	Penetration Rate
Goa	17.99%
Kerala	13.52%
Karnataka	11.57%
Maharashtra	10.07%
Delhi	9.40%

4 - WHEELERS

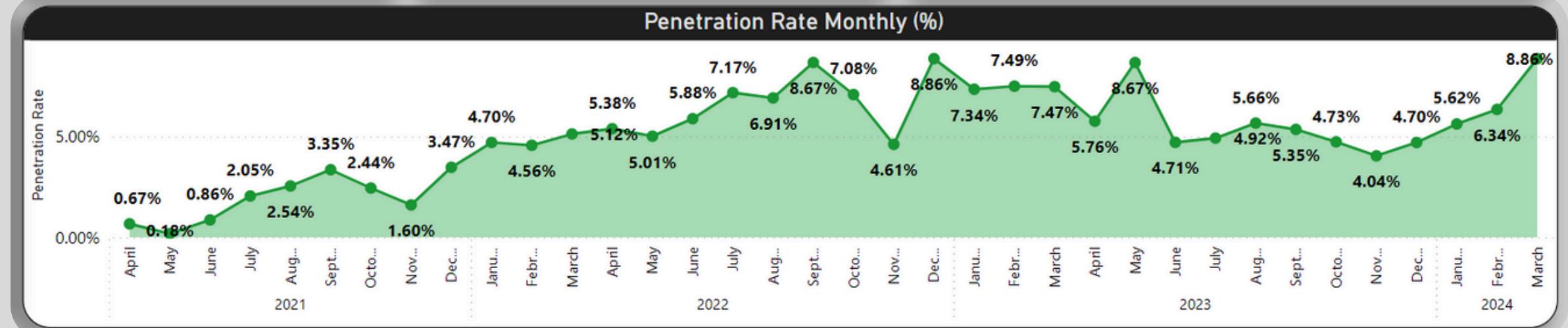
State	Penetration Rate
Kerala	5.76%
Chandigarh	4.50%
Delhi	4.29%
Karnataka	4.26%
Goa	4.25%

3. List the states with negative penetration (decline) in EV sales from 2022 to 2024.

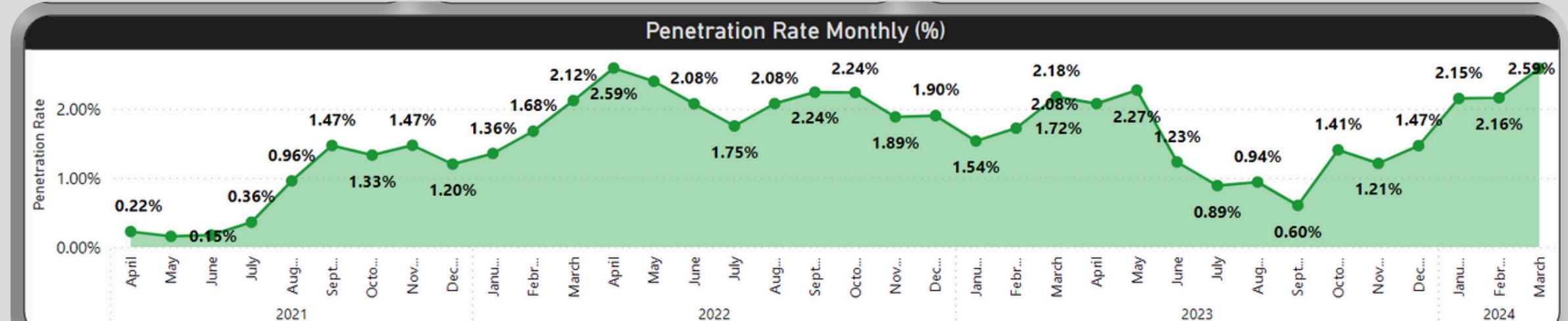
S.No.	State	Penetration Rate 2023	Penetration Rate 2024	Difference
1	Rajasthan	6.58%	5.60%	-0.98%
2	Haryana	2.79%	1.95%	-0.84%
3	Gujarat	6.79%	6.24%	-0.55%
4	Uttarakhand	3.81%	3.30%	-0.51%
5	Himachal Pradesh	1.59%	1.31%	-0.28%
6	Jharkhand	1.89%	1.68%	-0.21%
7	Delhi	9.52%	9.40%	-0.12%
8	Andhra Pradesh	4.58%	4.52%	-0.06%
9	Jammu and Kashmir	2.53%	2.51%	-0.02%

List the states with negative penetration (decline) in EV sales from 2022 to 2024.

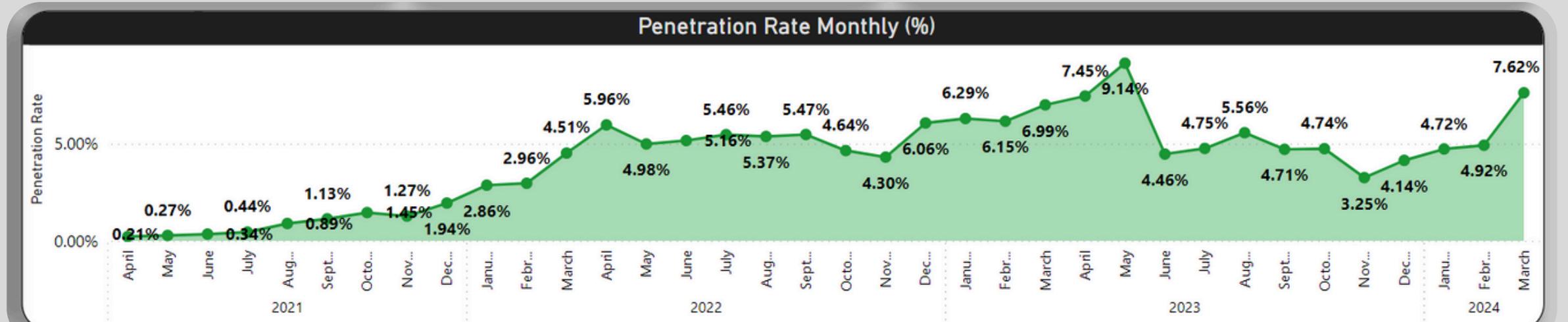
Rajasthan



Haryana



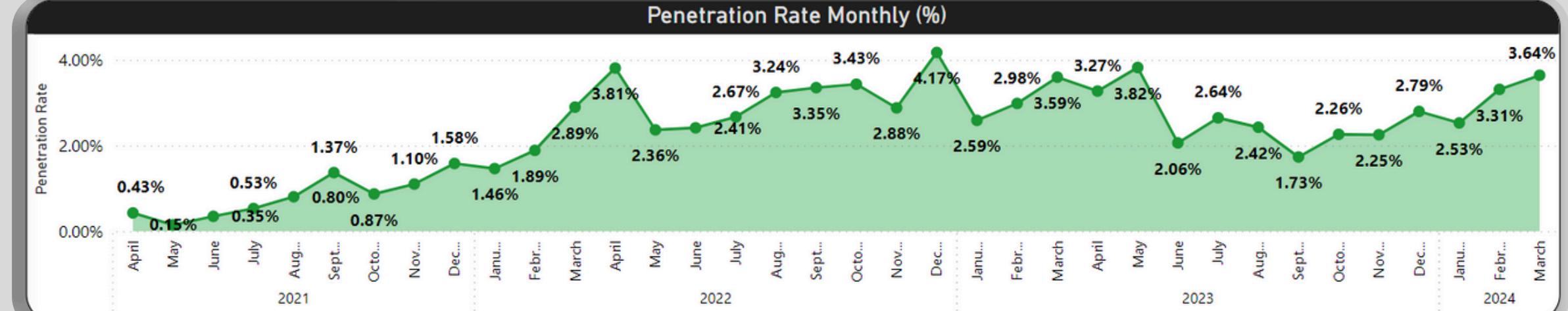
Gujarat



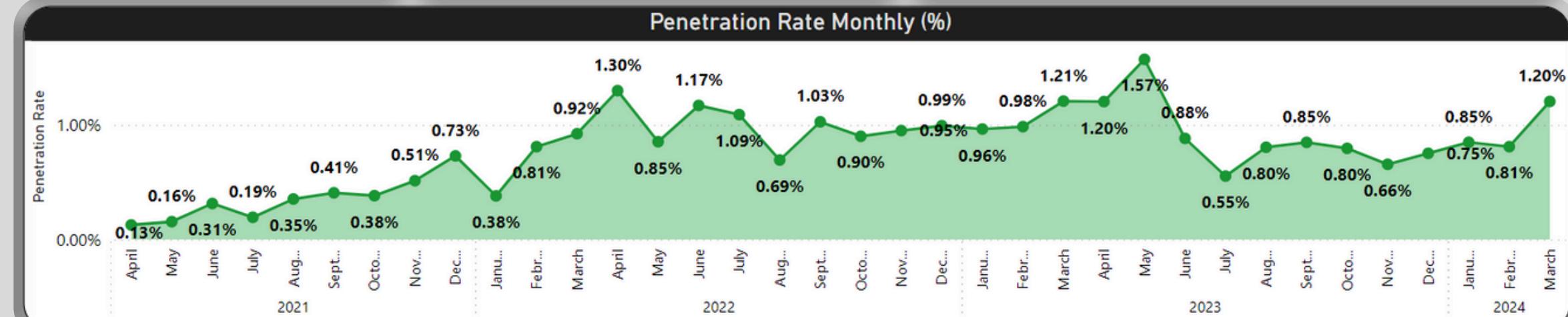
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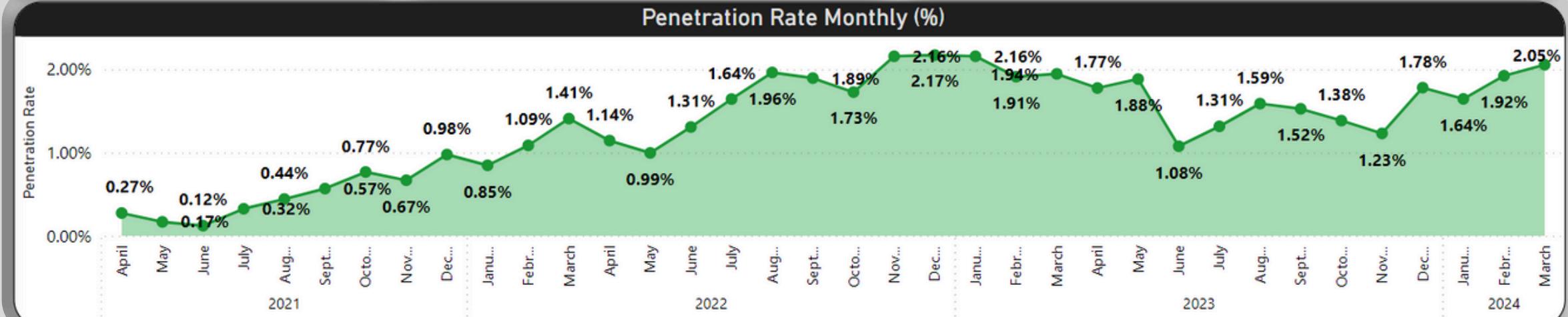
Uttarakhand



Himachal Pradesh



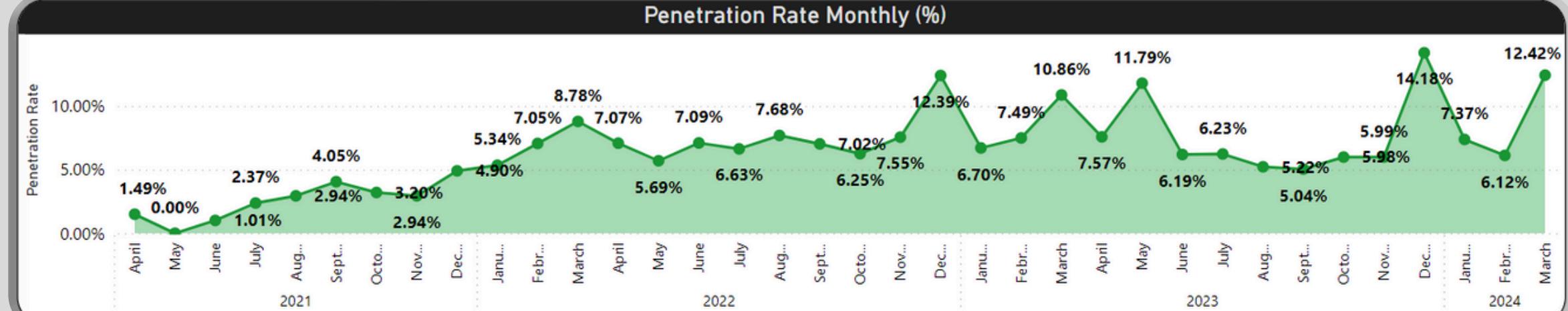
Jharkhand



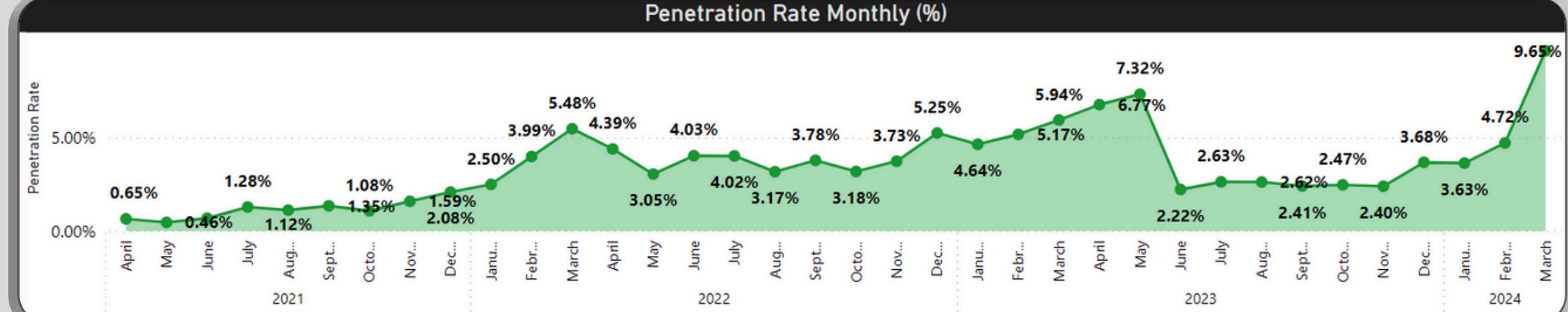
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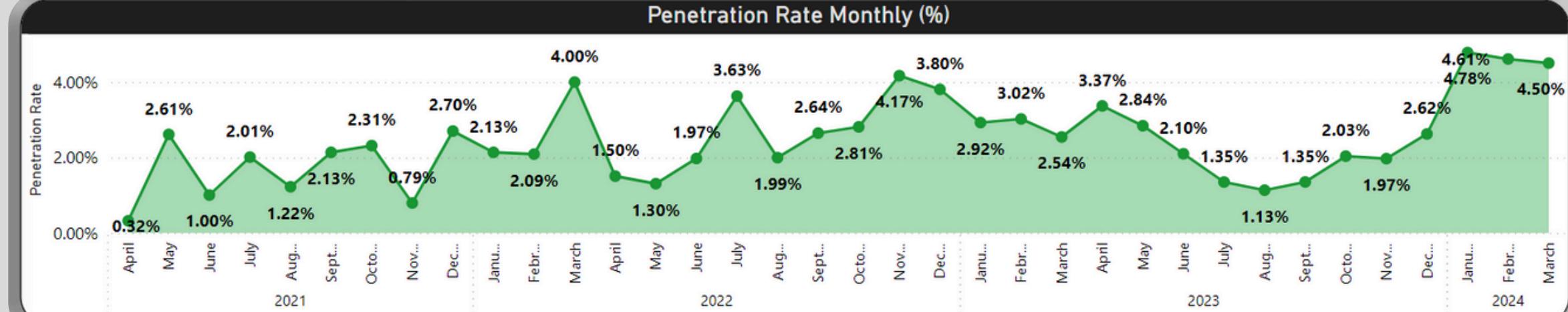
Delhi



Andhra Pradesh

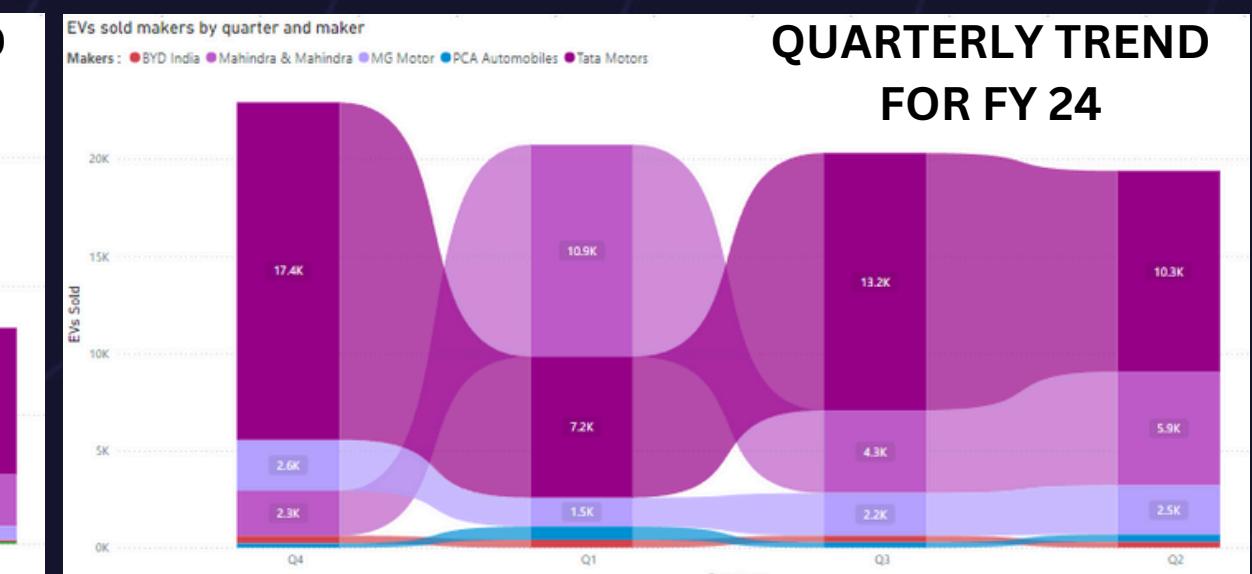
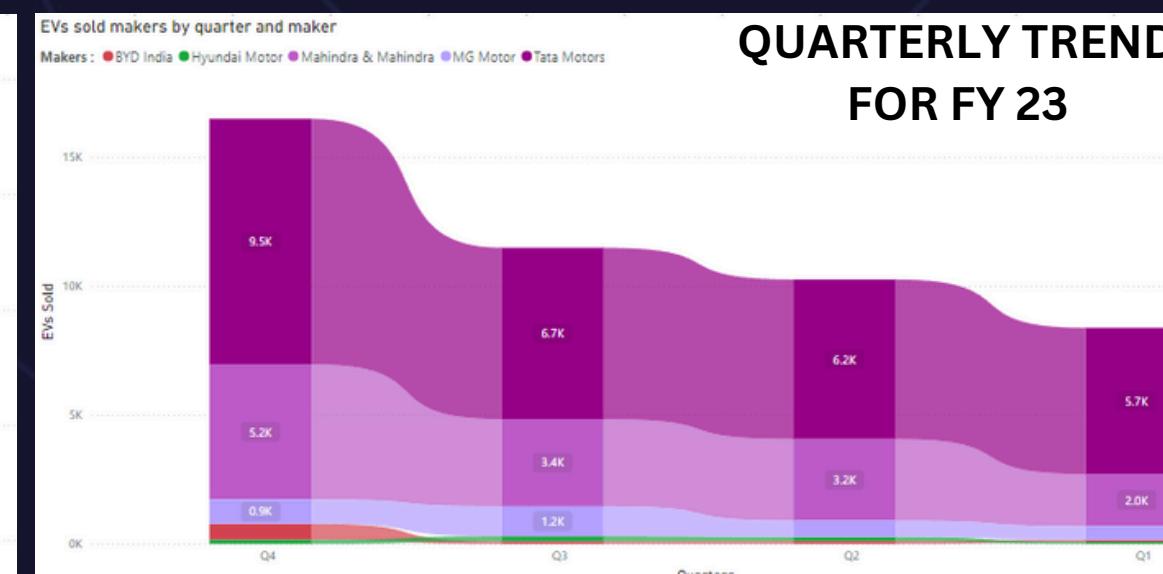
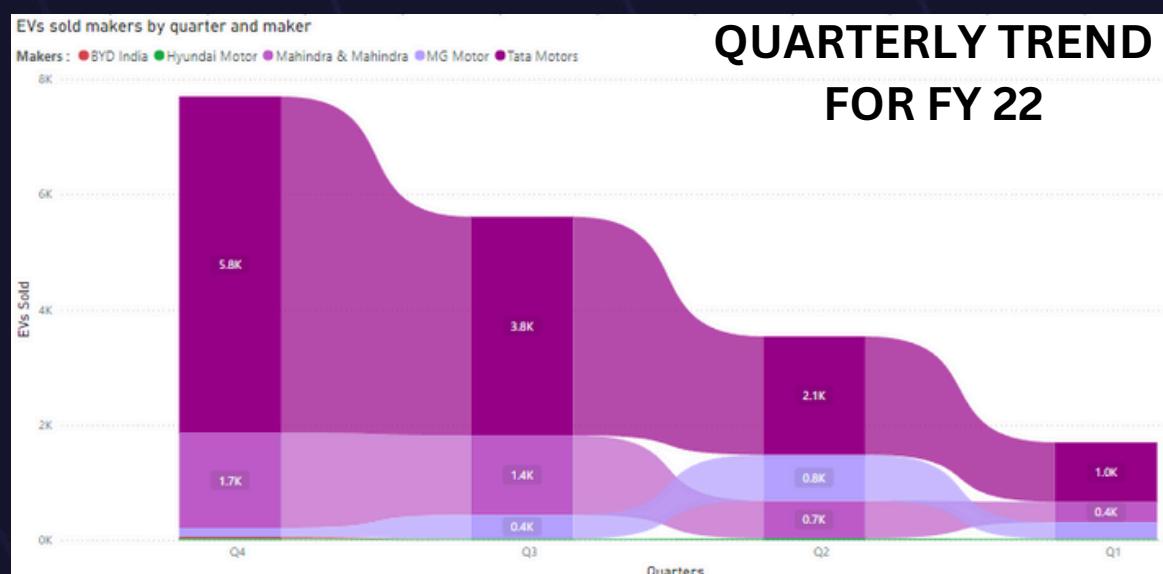
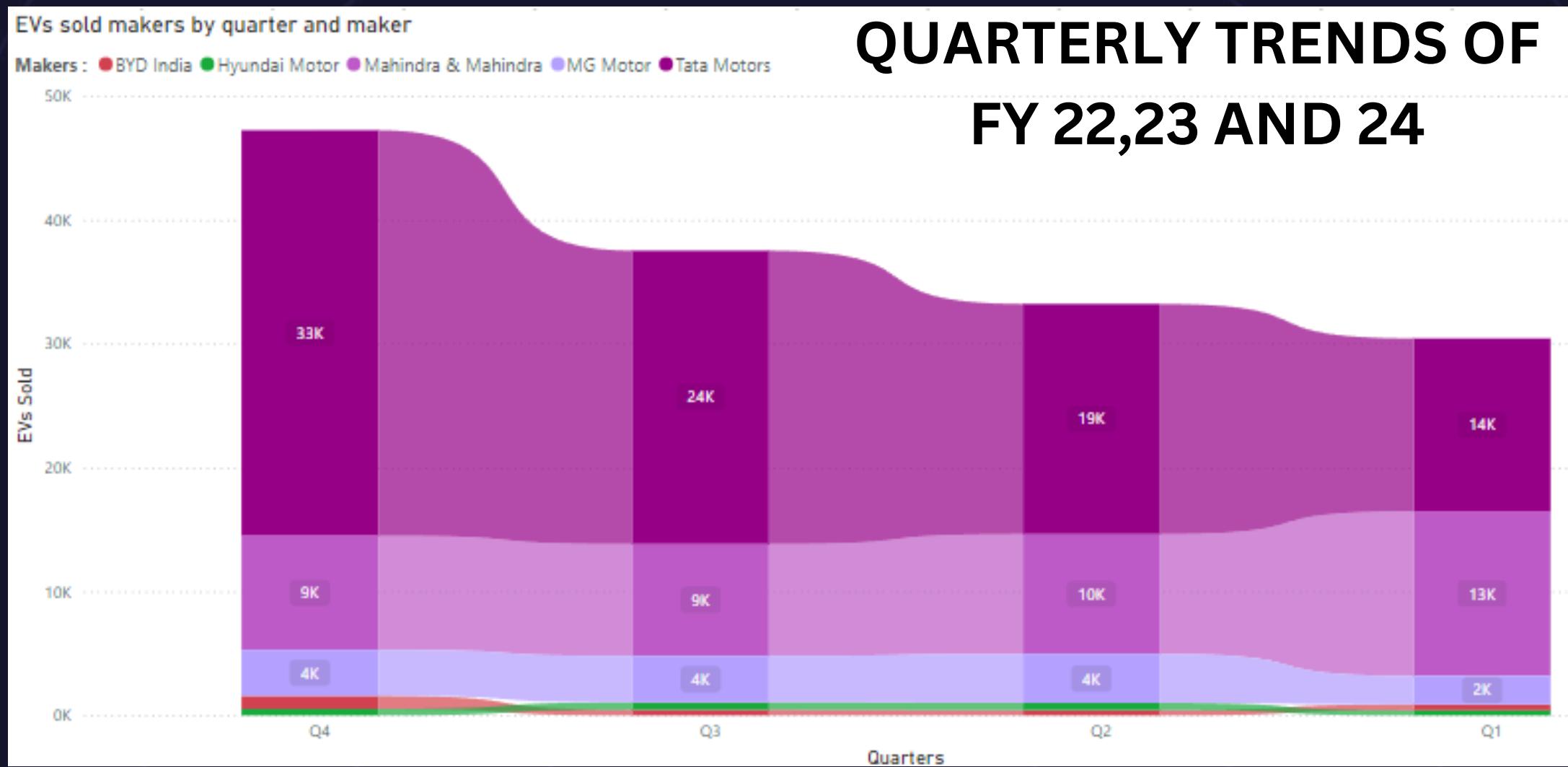


J & K





4. Quarterly trends for the top 5 EV makers (4-wheelers) from 2022 to 2024.

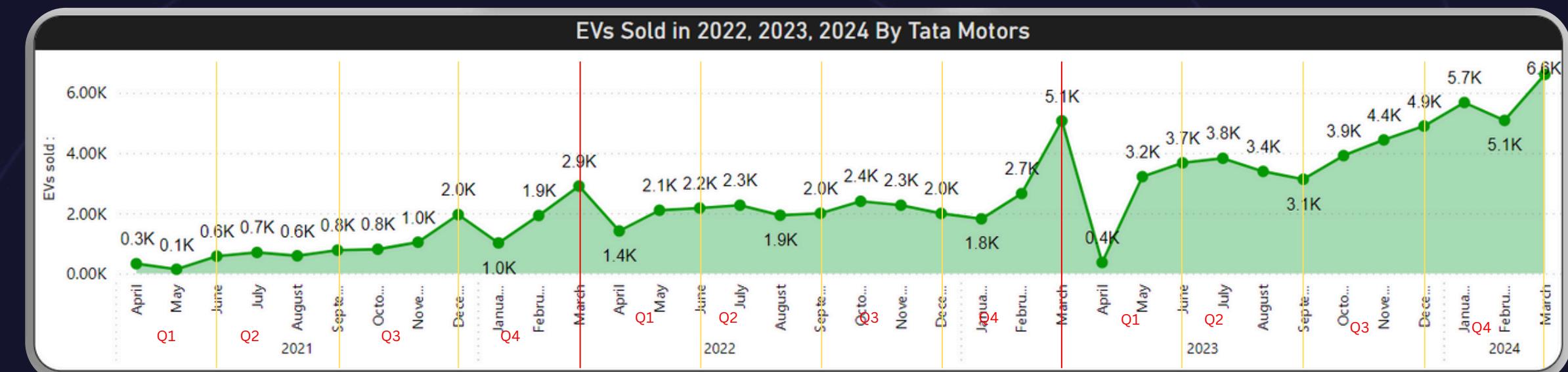


4. Quarterly trends for the top 5 EV makers (4-wheelers) from 2022 to 2024.

1.



TATA MOTORS



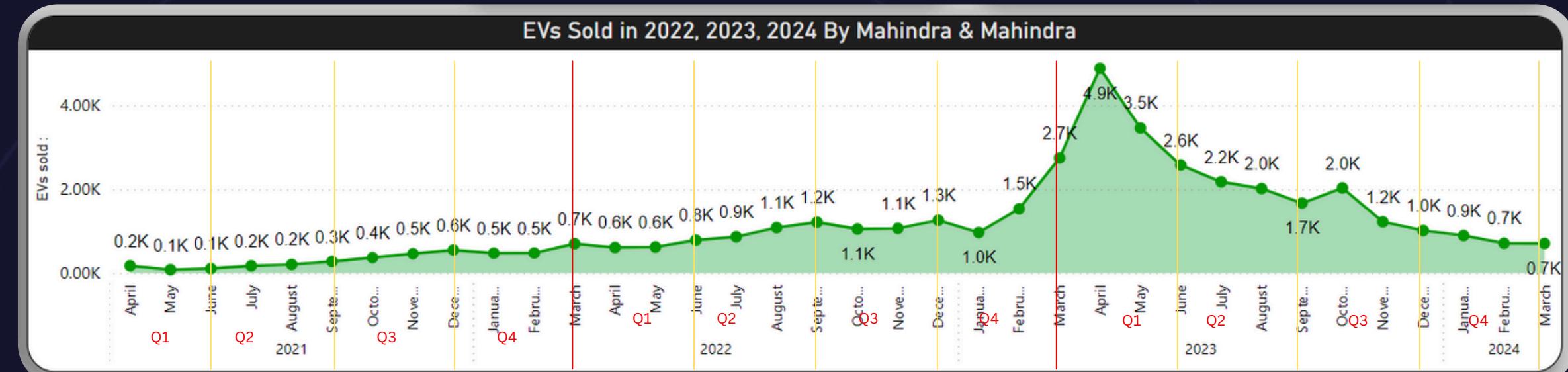
FY	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
2022	Sales began very modestly, with 0.3K units in April 2021. Sales sharply declined to 0.1K in May 2021 and then a sharp increase to 0.6K in June 2021.	Sales slightly fluctuated around 0.6K to 0.8K units	Sales in October 2021 was 0.8K and then increases to 2K in December 2022, Which was the maximum in any particular that month.	Sales were Quite less in the month of January (1k) as compared to the previous month. But this quarter shows similar trends like Previous Quarter. And this time sales almost Tripled in the end of the Quarter (2.9K).
2023	Sales started with a sharp increase from 1.4K units in March 2022 to 2.9K in April 2022. Sales dropped to 2.1K in May 2022 and then slightly increased to 2.2K in June 2022.	Sales remained relatively stable, with a slight rise from 2.2K in July to 2.3K in August, followed by a decline to 1.9K in September 2022.	Sales showed some stability, remaining around 2.4K to 2.3K in October and November 2022, but dropped to 2.0K in December 2022.	Sales began with a decrease from 2.0K in December 2022 to 1.9K in January 2023, then further dropped to 1.8K in February 2023. However, there was a sharp increase to 5.1K units in March 2023.
2024	Sales showed a significant decline from 5.1K in March 2023 to 0.4K in April 2023. They rebounded strongly to 3.2K in May 2023 and continued to rise to 3.7K in June 2023.	Sales peaked at 3.8K in July 2023, then slightly decreased to 3.4K in August 2023 and further to 3.1K in September 2023.	A steady increase was observed, with sales rising from 3.9K in October to 4.4K in November, and then to 4.9K in December 2023.	The trend continued upward, with sales increasing from 5.7K in January to 5.1K in February 2024 and peaking at 6.6K in March 2024.

Quarterly trends for the top 5 EV makers (4-wheelers) from 2022 to 2024.

2.



Mahindra & Mahindra



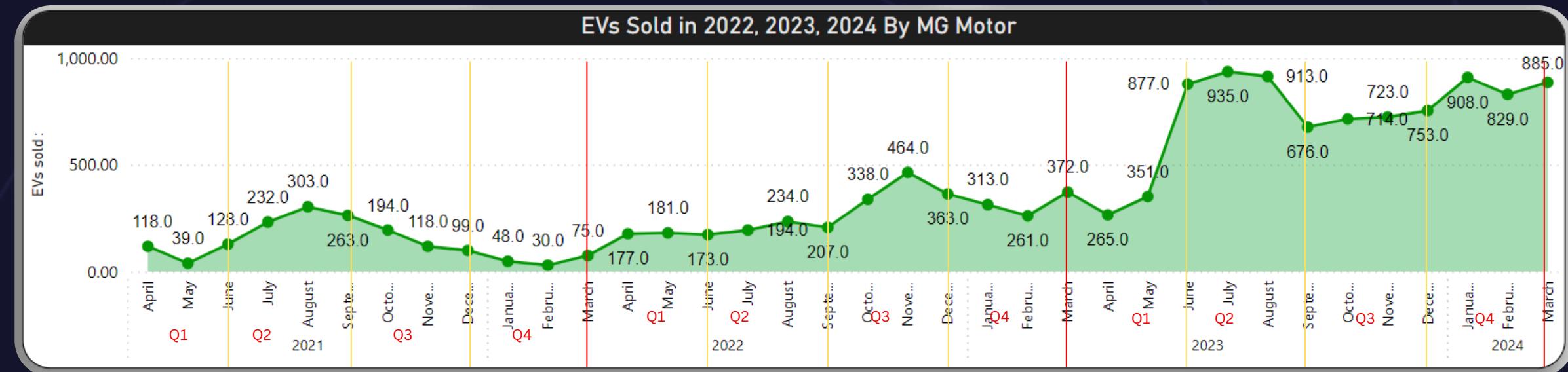
FY	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
2022	The sales were very low, with 0.2K units sold in April 2021. Sales then sharply declined to 0.1K units in May and June 2021.	Sales remained minimal but stable, fluctuating between 0.2K and 0.3K units across these months. There was no significant growth during this quarter.	A gradual increase began (Almost Doubled), with sales growing from 0.3K units in October to 0.6K in December 2021.	Sales continued to improve, increasing to 0.5K units in January 2022 and Feb 2022. In the last month of the Quarter, sales increased by 0.2K.
2023	Sales started with steady growth from 0.5K in March 2022 to 0.7K in April 2022. Sales remained stable at 0.6K for both May and June 2022.	Sales showed continuous growth, increasing from 0.8K in July to 0.9K in August and further to 1.1K in September 2022.	Sales remain same for both the month i.e., Oct 22 and Nov 22 which was 1.2k. In December 2023, it was 1.3K	Sales began to stabilize at 1.1K in January 2023 and 1.0K in February 2023. A sharp spike occurred in March 2023, where sales surged to 2.7K units.
2024	Sales peaked dramatically in April 2023, reaching 4.9K units. This was followed by a decline to 3.5K in May 2023 and further to 2.6K in June 2023.	Sales continued to decline, dropping to 2.2K in July and further to 2.0K in August and 1.7K in September 2023.	Sales showed some recovery, rising to 2.0K in October, but then declined to 1.2K in November and further to 1.0K in December 2023.	The downward trend persisted, with sales decreasing from 0.9K in January to 0.7K in both February and March 2024.

Quarterly trends for the top 5 EV makers (4-wheelers) from 2022 to 2024.

3.



MG Motor



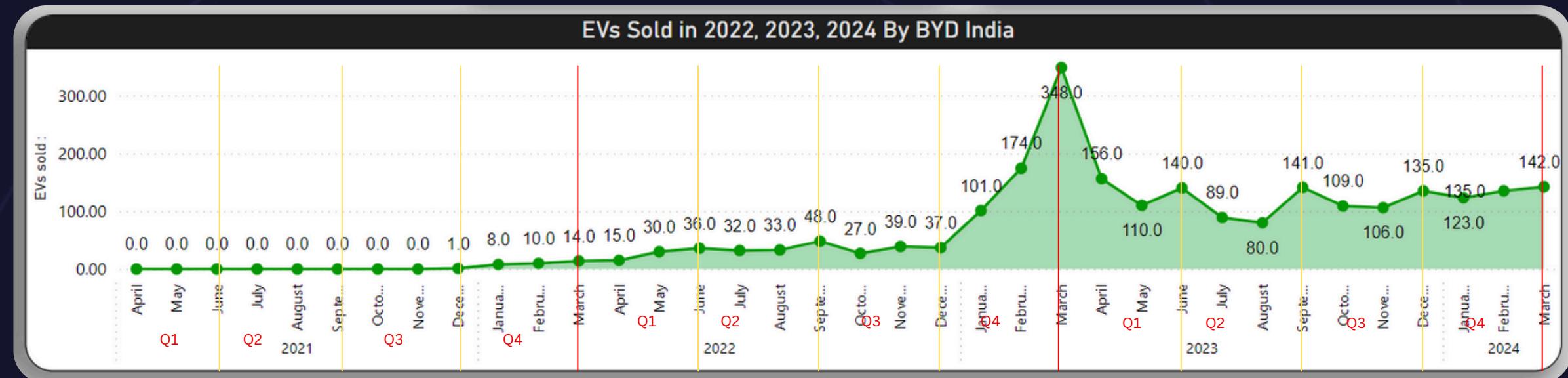
FY	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
2022	<p>(April - June 2021):</p> <ul style="list-style-type: none"> Sales began at 118 units in April 2021 but dropped sharply to 39 units in May 2021. A recovery was observed in June 2021, with sales increasing to 128 units. 	<p>(July - September 2021):</p> <ul style="list-style-type: none"> The growth continued with a significant jump to 232 units in July 2021 and further to 303 units in August 2021. Sales slightly declined to 263 units in September 2021. 	<p>(October - December 2021):</p> <ul style="list-style-type: none"> Sales decreased to 194 units in October 2021 and further down to 118 units in November 2021. A more significant drop occurred in December 2021, with sales at 99 units. 	<p>(January - March 2022):</p> <ul style="list-style-type: none"> The downward trend continued in January 2022, with only 48 units sold. Sales picked up slightly to 30 units in February 2022 and surged to 75 units in March 2022.
2023	<p>(April - June 2022):</p> <ul style="list-style-type: none"> Sales improved, with 177 units in April 2022 and further increased to 181 units in May 2022. However, sales dropped to 173 units in June 2022. 	<p>(July - September 2022):</p> <ul style="list-style-type: none"> Sales remained relatively steady, with 194 units in July 2022 and a slight increase to 234 units in August 2022 and 207 in September. 	<p>(October - December 2022):</p> <ul style="list-style-type: none"> In this quarter, the sales of EVs by MG motor increases Tremendously and doubled to reach 464 in November. December 2022 saw a slight decrease to 363 units. 	<p>(January - March 2023):</p> <p>A slight decrease in sales in comparison to previous quarter. But overall the sales were impressive to all other previous Quarters except the previous one.</p>
2024	<p>(April - June 2023):</p> <ul style="list-style-type: none"> Sales remain constant in first two months but June 2023 saw a significant increase, with sales spiking to 877 units. 	<ul style="list-style-type: none"> In July, sales Reaches all time high to 935 units, followed by 913 units in August 2023. September experienced a decrease in sales and lowest in the Quarter 2 of 2024 (676 Units). 	<p>(October - December 2023):</p> <ul style="list-style-type: none"> Sales showed some recovery, with a rise to 723 units in October 2023, and a significant decrease to 714 units in November 2023. December 2023 saw a slight increase to 753 units. 	<p>(January - March 2024):</p> <ul style="list-style-type: none"> January 2024 started strong, with 908 units sold, followed by an increase to 829 units in February 2024. Sales peaked again at 885 units in March 2024.

Quarterly trends for the top 5 EV makers (4-wheelers) from 2022 to 2024.

4.



BYD India



FY	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
2022	No Sales	No sales	(October - December 2022): BYD India began sales in December 2022, with 1 unit sold.	(January - March 2022): January 2022 saw an increase to 8 units, and February 2022 recorded 10 units sold.
2023	(April - June 2022): <ul style="list-style-type: none"> April 2022 saw sales increase to 15 units, followed by 30 units in May 2022. June 2022 experienced further growth with 36 units sold. 	(July - September 2022): <ul style="list-style-type: none"> July 2022 had 32 units sold, and sales slightly increased to 33 units in August 2022. There was a notable jump to 48 units in September 2022. 	(October - December 2022): <ul style="list-style-type: none"> October 2022 recorded 39 units, and November 2022 saw a slight drop to 37 units. Sales remained steady in December 2022 at 39 units. 	(January - March 2023): <ul style="list-style-type: none"> January 2023 recorded 48 units, then sales surged to 174 units in February 2023. A significant spike occurred in March 2023, with 348 units sold.
2024	(April - June 2023): <ul style="list-style-type: none"> Sales dropped to 156 units in April 2023, followed by 110 units in May 2023 and 140 units in June. 	(July - September 2023): <ul style="list-style-type: none"> Sales in August (80 units) were lowest after January 2023 (101 units). A recovery was observed in September 2022 with 141 units sold. 	(October - December 2023): <ul style="list-style-type: none"> Sales remained steady between 100 and 135 units. 	(January - March 2024): <ul style="list-style-type: none"> Sales remained steady at 135 units in January 2024. February 2024 saw a slight increase to 142 units, followed by another rise to 153 units in March 2024.

Quarterly trends for the top 5 EV makers (4-wheelers) from 2022 to 2024.

5.



HYUNDAI

Hyundai



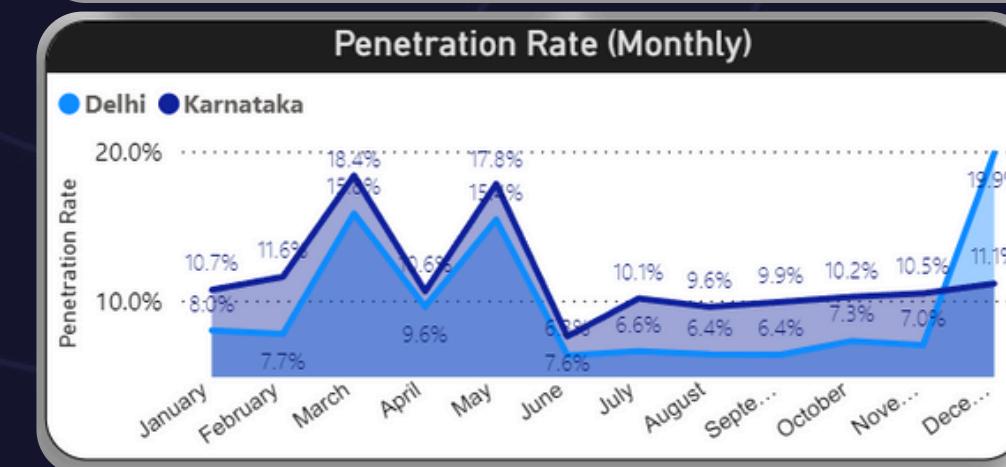
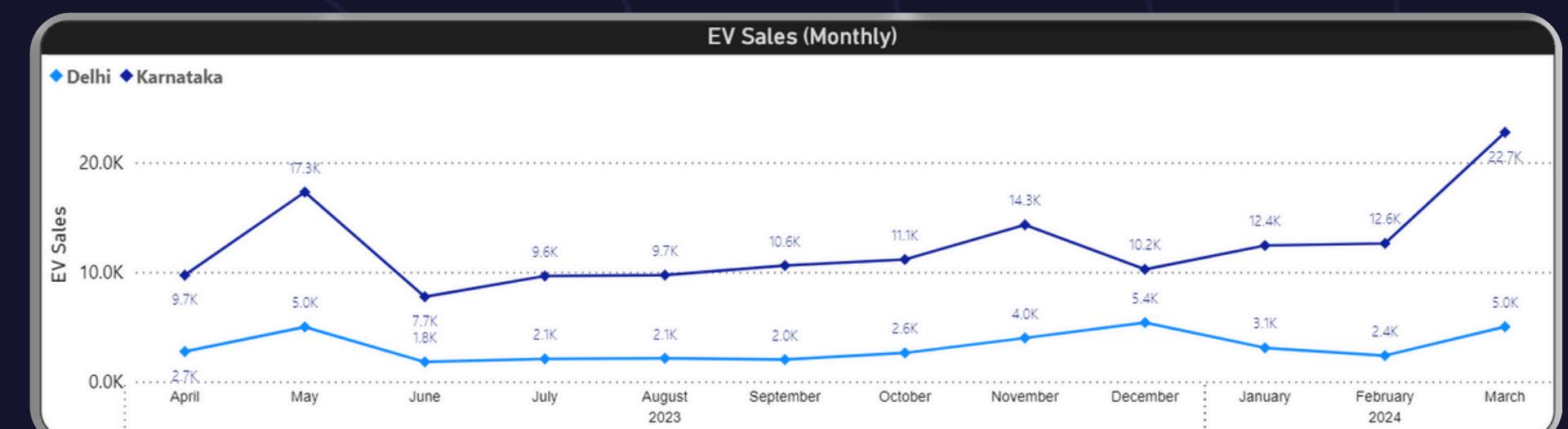
FY	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
2022	Sales Remained stable between 10 to 20 units In all Four Quarters For FY 2022. Sales were low throughout the year, indicating that Hyundai's EV presence was still emerging or facing early challenges.			
2023	<p>(April - June 2022):</p> <ul style="list-style-type: none"> There was a notable increase in sales: 17 units were sold in April, 19 units in May, and finally, 39 units in June, which was the highest compared to previous months. 	<p>(July - September 2022):</p> <ul style="list-style-type: none"> Sales were constantly increasing . July: 45 units August: 53 units September: 57 units 	<p>(October - December 2022):</p> <ul style="list-style-type: none"> Sales remained between 59 units to 68 units. 	<p>(January - March 2023):</p> <ul style="list-style-type: none"> Sales peaked in January with 84 units, followed by the sudden drop in sales to 36 units in February 2023 and followed by 35 units in March, which lowest after June 2022 (39 units).
2024	<p>(April - June 2023):</p> <ul style="list-style-type: none"> This quarter shows the speedy recovery as It touched to sales of 129 units in May. It was the best ever sales, recorded in a single month. 	<p>(July - September 2023):</p> <p>Recovery and growth with July (88 units), a peak in August (161 units), followed by a slight decline in September (148 units).</p>	<p>(October - December 2023):</p> <ul style="list-style-type: none"> Sales fluctuated, starting at 148 units in October, dropping to 125 units in November and 97 units in December. 	<p>(January - March 2024):</p> <ul style="list-style-type: none"> January saw 128 units, followed by February at 94 units, and March at 116 units, indicating Little Fluctuation in sales.

5. How do EV sales and penetration rates in Delhi compare to Karnataka for 2024?

Comparing EV 2-WHEELERS SALES in Delhi and Karnataka for the year 2024 :

- Sales Volume:** Karnataka significantly outperformed Delhi in terms of EV 2-wheeler sales. Karnataka sold a total of 148,111 units, while Delhi sold 38,094 units.
- Penetration Rate:** Karnataka also had a higher EV penetration rate (11.57%) compared to Delhi (9.40%), indicating a broader acceptance of EVs in Karnataka.
- Growth Trends:** Both states saw fluctuations in their monthly EV sales, but Karnataka experienced a more pronounced peak in sales around April, reaching 22.7K units, compared to Delhi's peak in November at 14.3K units.
- Seasonal Variations:** Both states saw similar patterns of seasonal variation, with sales peaking in the middle of the year (around April-May) and again towards the end of the year (November), likely due to specific market dynamics or seasonal promotions.

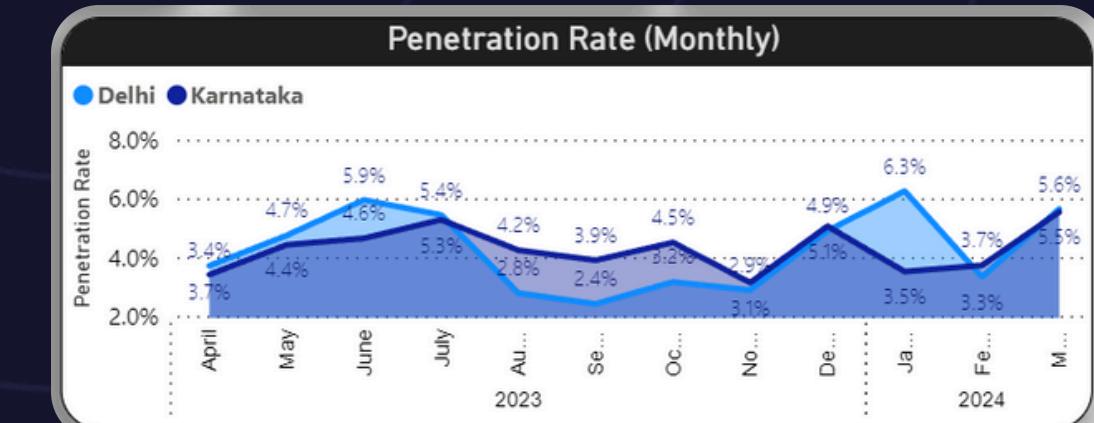
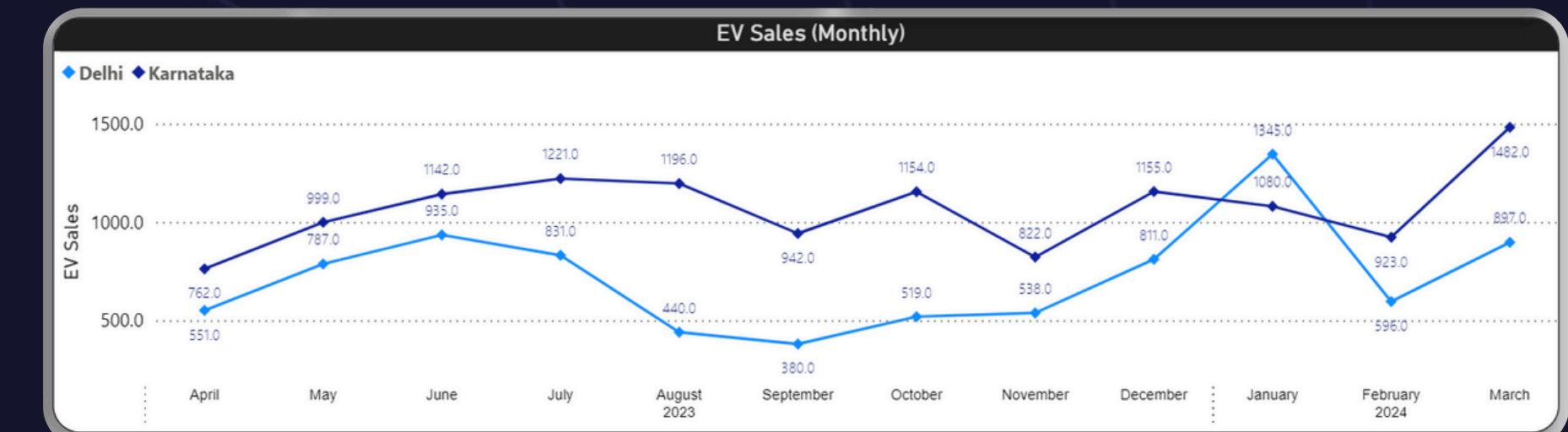
State	EVs Sold	Total Vehicles Sold	Penetration Rate	CAGR	Revenue
Delhi	38,094	405,218	9.40%		₹ 3,237.99M
Karnataka	148,111	1,279,767	11.57%		₹ 12,589.44M
Total	186,205	1,684,985	11.05%		₹ 15,827.43M



Comparing EV 4-WHEELERS SALES in Delhi and Karnataka for the year 2024 :

- Sales Volume:** Karnataka once again outperformed Delhi in EV 4-wheeler sales, with a total of 12,878 units sold compared to Delhi's 8,630 units.
- Penetration Rate:** Both states had a similar EV penetration rate, with Delhi at 4.29% and Karnataka at 4.26%. This indicates that despite the difference in sales volume, the market penetration of EV 4-wheelers was nearly identical.
- Monthly Sales Trends:** Karnataka experienced a peak in March, with 1,482 units sold, while Delhi saw a peak in January with 1,345 units sold. Both states saw a dip in sales around August and September, but Karnataka's sales were generally more stable, while Delhi experienced more fluctuations.
- Seasonal Variation:** The sales trends in both states showed some seasonal patterns, with higher sales at the beginning and middle of the year and lower sales towards the end. However, Karnataka had a more consistent sales performance across the months.

State	EVs Sold	Total Vehicles Sold	Penetration Rate	CAGR	Revenue
Delhi	8,630	201,130	4.29%		₹ 12,945.00M
Karnataka	12,878	302,221	4.26%		₹ 19,317.00M
Total	21,508	503,351	4.27%		₹ 32,262.00M





6. Compounded Annual Growth Rate (CAGR) in 4-wheeler units for the top 5 makers from 2022 to 2024.



TOP 5 Makers (Based on CAGR)

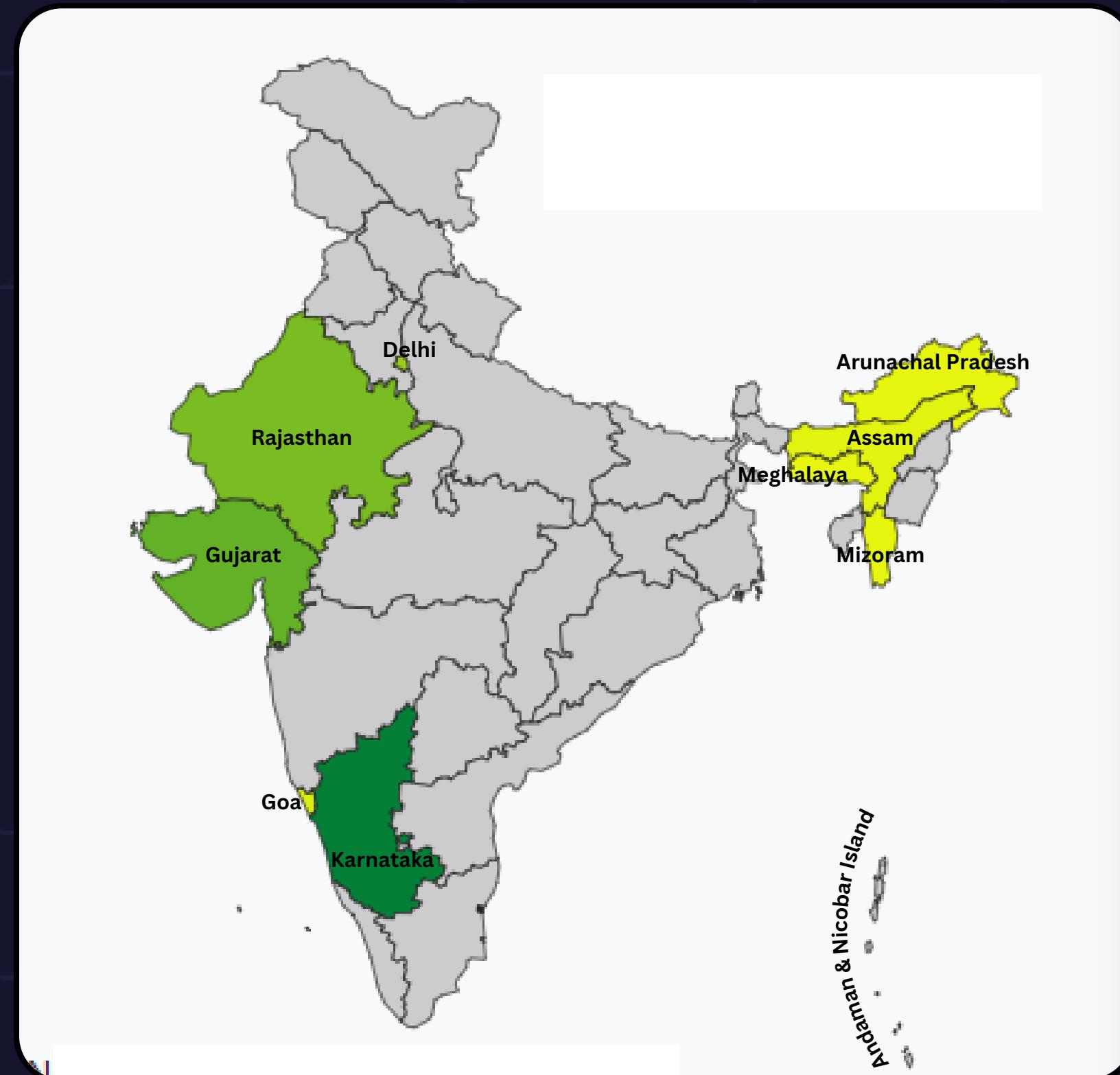
Maker	CAGR (EVs Sold)	EVs sold
BMW India	1140.97%	1,370
Volvo Auto India	971.21%	568
BYD India	566.52%	2,419
Hyundai Motor	255.48%	2,076
Mercedes -Benz AG	234.55%	388

CAGR of TOP 5 Makers (Based on EVs Sold)

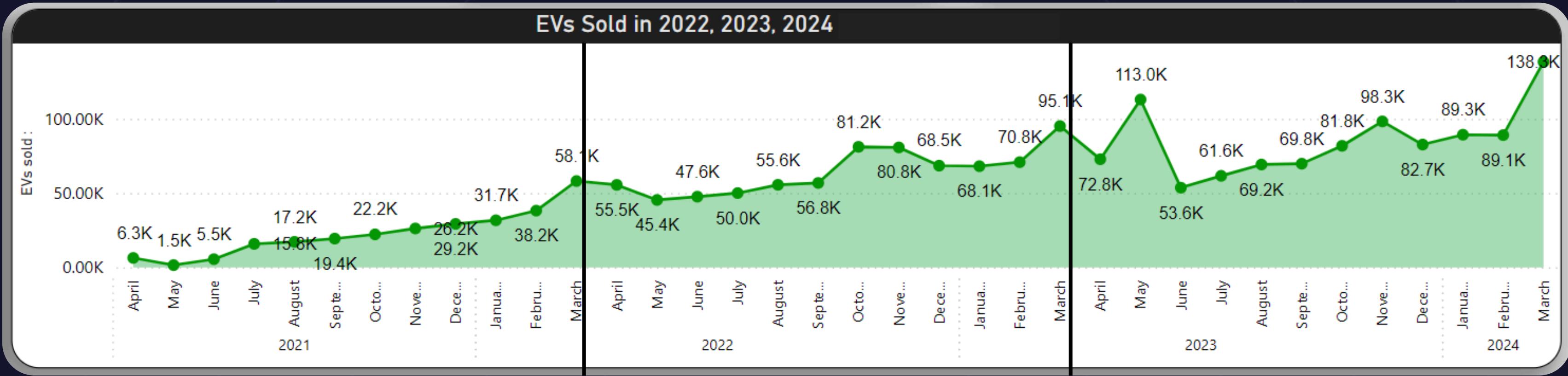
maker	EVs sold	CAGR (EVs Sold)
Tata Motors	88,935	94.71%
Mahindra & Mahindra	41,193	140.33%
MG Motor	13,753	131.53%
BYD India	2,419	566.52%
Hyundai Motor	2,076	255.48%

7. Top 10 states with the highest CAGR in total vehicles sold from 2022 to 2024.

State	Total Vehicle CAGR	Total Vehicle Sold
Meghalaya	28.47%	90,183
Goa	27.41%	199,970
Karnataka	25.28%	3,994,329
Delhi	22.88%	1,588,436
Rajasthan	21.50%	3,307,591
Gujarat	20.55%	4,125,551
Assam	20.13%	1,403,271
Mizoram	18.77%	71,307
Arunachal Pradesh	18.30%	71,547
Andaman & Nicobar Island	18.29%	18,885



8. Peak and low season months for EV sales from 2022 to 2024.



Peak Season Months:

FY 2022:

- **March 2022:** 58.1k EVs were sold, which is a sudden rise in the sales of EVs in a particular month in comparison to the previous month.

FY 2023:

- **October 2022 :** 81.2k EVs were sold. Which is the second highest in a particular month in FY 2023
- **March 2023:** 95.1K EVs were sold. Highest in FY 2023.

FY 2024:

- **May 2023:** 113.0K EVs sold.
- **March 2024:** 138.0K EVs sold (highest peak in the dataset)

Low Season Months:

FY 2022:

May 2021: 1.5K EVs sold (lowest point in the dataset)

FY 2024:

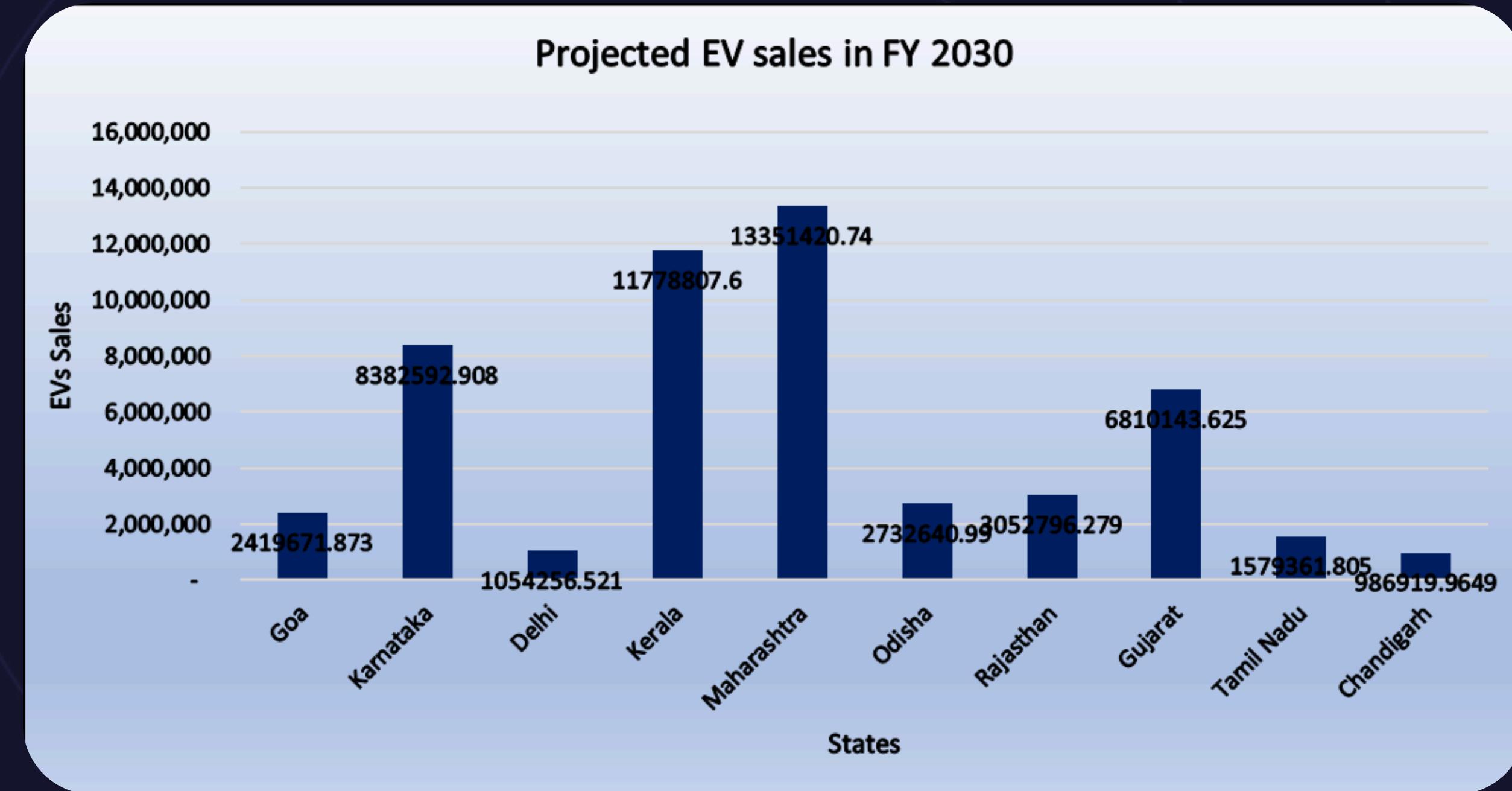
June 2023: 53.6 lowest in the fiscal year 2024.

These months represent the highest and lowest points in EV sales, suggesting May as a peak season and months like May 2021, June 2021, and February 2022 as low seasons in the observed years.



9. What is the projected number of EV sales for the top 10 states by penetration rate in 2030, based on the compounded annual growth rate (CAGR) from previous years?

State	Projected EV sales in 2030
Goa	2,419,672
Karnataka	8,382,593
Delhi	1,054,257
Kerala	11,778,808
Maharashtra	13,351,421
Odisha	2,732,641
Rajasthan	3,052,796
Gujarat	6,810,144
Tamil Nadu	1,579,362
Chandigarh	986,920



Tool Used : Excel

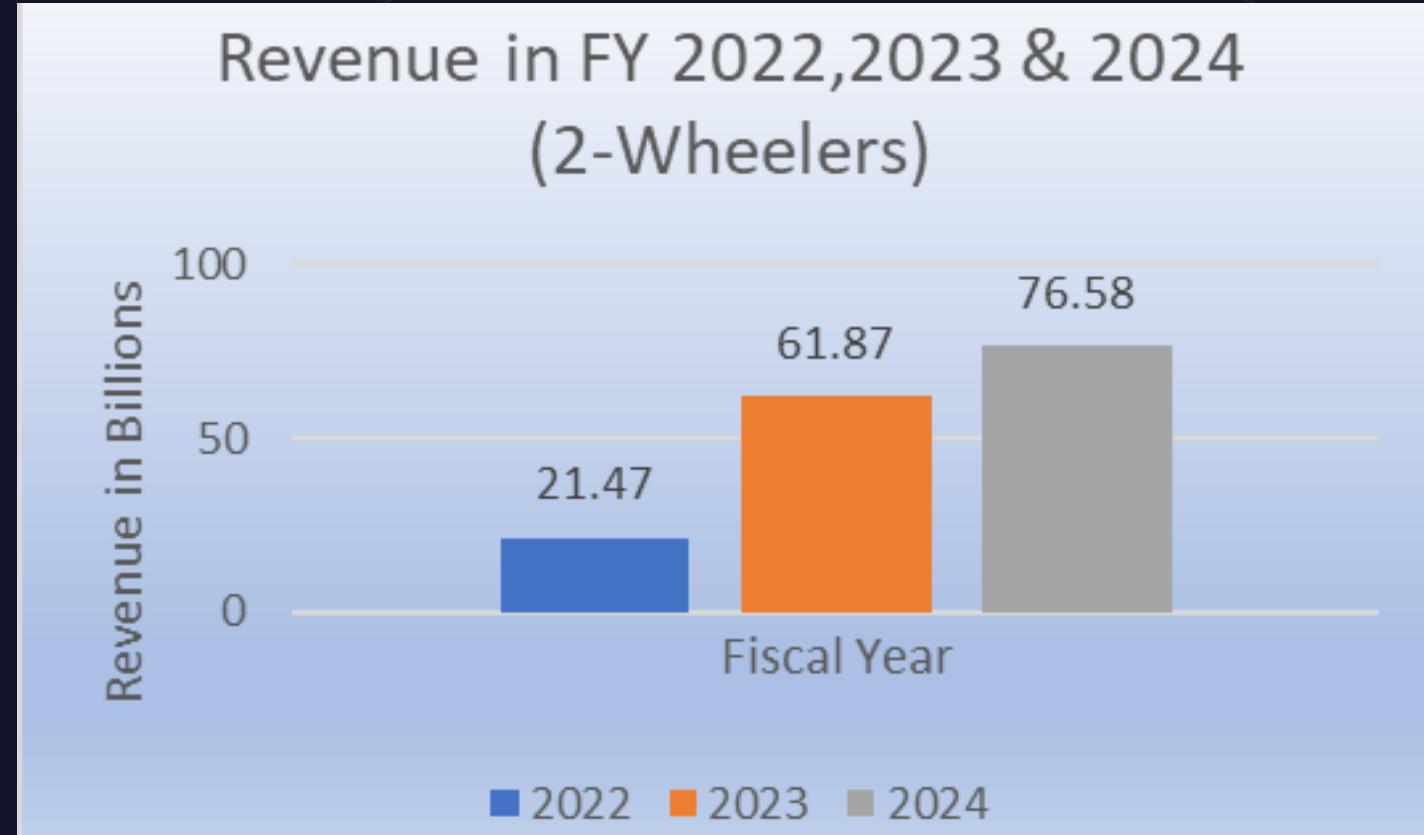


10. Estimate the revenue growth rate of 4-wheelers and 2-wheelers EVs in India for 2022 vs 2024 and 2023 vs 2024.



2-Wheelers Revenue Comparision

Revenue Comparison	
FY	Total Revenue
2022	21,468,705,000
2023	61,871,755,000
2024	79,569,520,000



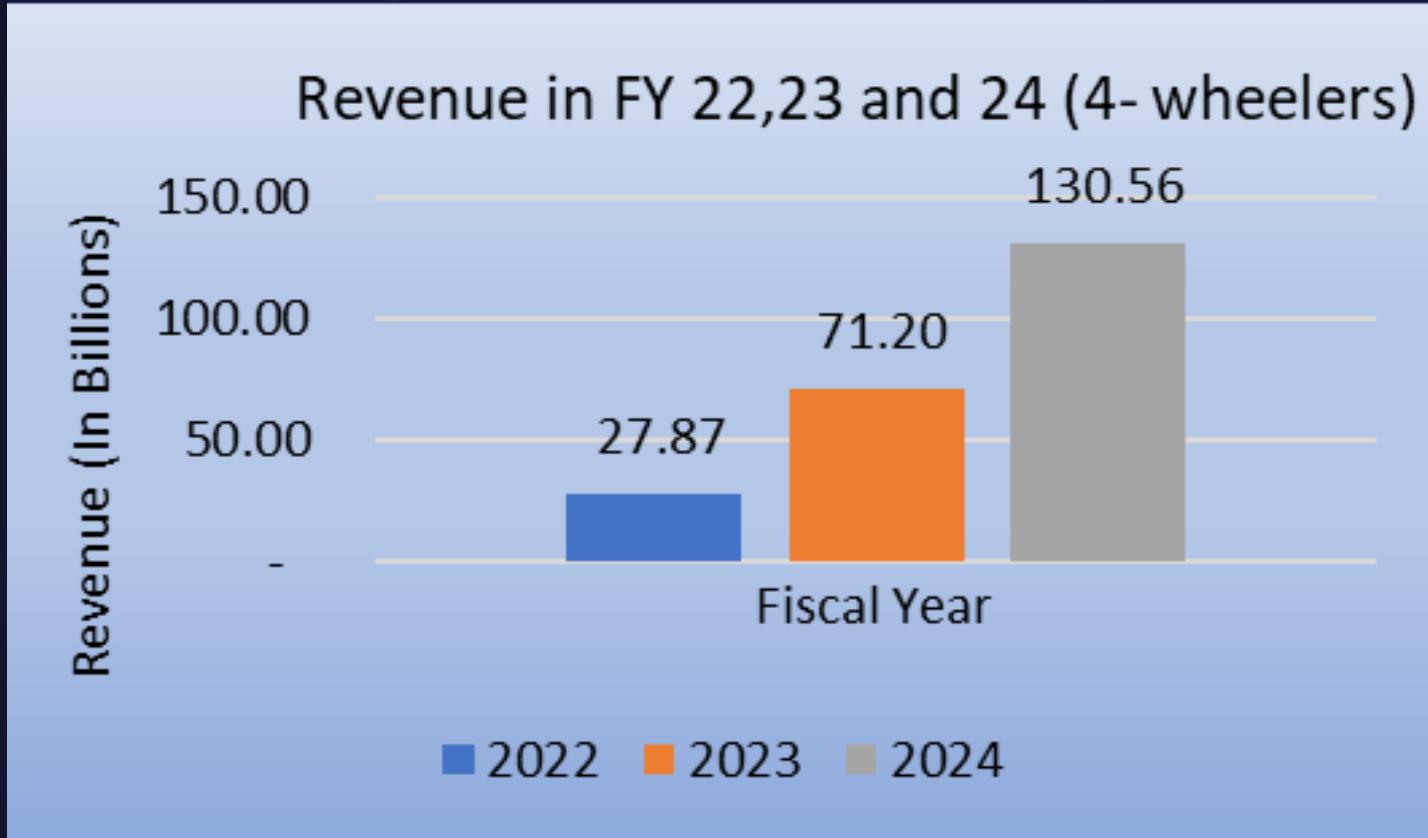
Percentage change	
2023 vs 2024	28.60%
2022 vs 2024	270.63%

The revenue growth of 2-wheelers EVs in India has experienced substantial gains from FY 2022 to FY 2024. The revenue rose from ₹21.47 billion in FY 2022 to ₹79.57 billion in FY 2024, representing an impressive growth rate of 270.63%. Between FY 2023 and FY 2024, the revenue growth was 28.60%, climbing from ₹61.87 billion to ₹79.57 billion. These figures reflect the accelerating momentum in the 2-wheelers EV market, fueled by rising consumer interest, supportive policies, and a growing shift towards sustainable transportation options.

Estimate the revenue growth rate of 4-wheelers and 2-wheelers EVs in India for 2022 vs 2024 and 2023 vs 2024.

4-Wheelers Revenue Comparision

Revenue comparison	
FY	Total Revenue
2022	27,865,500,000
2023	71,197,500,000
2024	130,557,000,000



Percentage change	
2023 vs 2024	83.37%
2022 vs 2024	368.53%

The revenue growth of 4-wheelers EVs in India has been remarkable over the period from FY 2022 to FY 2024. The total revenue increased from ₹27.87 billion in FY 2022 to ₹130.56 billion in FY 2024, indicating a significant growth rate of 368.53%. Additionally, the revenue grew by 83.37% between FY 2023 and FY 2024, rising from ₹71.20 billion to ₹130.56 billion. This substantial increase underscores the rapid expansion and acceptance of 4-wheelers EVs in India, driven by advancements in EV technology, favorable government policies, and a growing consumer preference for sustainable vehicles.

SECONDARY QUESTIONS





Primary reasons for customers choosing 4-wheeler EVs in 2023 and 2024.



Cost Savings on Fuel

- Rising Fuel Prices: The sharp increase in petrol and diesel prices has made EVs more attractive. With electricity costs being significantly lower, EVs offer considerable savings on running costs.
- Statistics: A study by the Council on Energy, Environment, and Water (CEEW) in 2023 indicated that EV owners could save up to ₹1.5 lakh over five years compared to internal combustion engine (ICE) vehicle owners.

Technological Advancements

- Increased Range and Performance: Improvements in battery technology have led to EVs with greater range and better performance.
- Industry Data: The average range of EVs in India increased by 30% from 2022 to 2024, reaching around 350 km on a single charge, according to a report by the International Energy Agency (IEA).

Government Incentives and Subsidies

- FAME II Scheme: The Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME II) scheme offers incentives of up to ₹1.5 lakh for 4-wheeler EVs.
- State-Specific Incentives: Many states like Maharashtra, Delhi, and Gujarat offer additional subsidies, reducing the effective price of EVs.
- Impact: According to the Society of Indian Automobile Manufacturers (SIAM), the incentives have reduced the effective cost of EVs by 20-25%, leading to a surge in adoption.



Impact of Government Incentives



Secondary Question: Impact of government incentives and subsidies on EV adoption rates.

1. FAME India Scheme

- **FAME I (2015-2019):** Introduced subsidies for EV buyers to reduce the initial cost of vehicles.
- **FAME II (2019-2024):** Expanded focus to electrify public transport (e-buses, three-wheelers) and build charging infrastructure with a budget of ₹10,000 crores.
- **Impact:** Key driver for the growth of EVs, especially in public transport, and the development of charging networks.

2. Income Tax Deduction (Section 80EEB)

- **Introduced in Budget 2019-2020:** Tax deduction of up to ₹1.5 lakhs on interest paid on EV loans.
- **Impact:** Made EVs more affordable, encouraging higher adoption among consumers.

3. GST Reduction on EVs

- **Effective from August 1, 2019:** Reduced GST on EVs from 12% to 5%.
- **Impact:** Significantly lowered the cost of EVs, making them more competitive with conventional vehicles.



Impact of Government Incentives

2/2

Secondary Question: Impact of government incentives and subsidies on EV adoption rates.

4. Production Linked Incentive (PLI) Scheme for ACC Batteries

- **Announced in Budget 2021-2022:** ₹18,100 crores allocated to boost domestic battery manufacturing.
- **Impact:** Reduced dependence on imports, lowered EV costs, and supported local manufacturing.

6. Battery Swapping Policy

- **Announced in Budget 2022-2023:** Focused on electric two-wheelers and three-wheelers.
- **Impact:** Reduced range anxiety and downtime, encouraging adoption in commercial and delivery sectors.

7. Custom Duty Reductions

- **Implemented across multiple budgets:** Reduced duties on key EV components like lithium-ion batteries.
- **Impact:** Lowered production costs, contributing to more affordable EVs for consumers.

8. Expansion of Charging Infrastructure

- **Public Sector Initiatives:** PSUs involved in setting up EV charging stations across the country.
- **Impact:** Alleviated range anxiety, making EVs a more viable option for a wider audience.

Overall Impact on EV Adoption:

These initiatives collectively reduced the cost of EV ownership, improved infrastructure, and boosted consumer confidence, leading to a steady rise in EV adoption across India, particularly in the two-wheeler and public transport segments.



Charging Infrastructure & EV Sales Correlation

1/2



Secondary Question: Correlation between charging stations infrastructure and EV sales.

India's EV infrastructure is highly uneven, with 12,146 public charging stations supporting varying levels of EV sales across states. Expanding the PCS network nationwide is critical for fostering sustainable EV growth across the country.

Correlation Between Charging Stations and EV Sales

Overall Findings:

- **Two-Wheelers:** A strong positive correlation of 0.82 between charging stations and two-wheeler EV sales suggests that as the number of public charging stations (PCS) increases, two-wheeler sales also rise significantly.
- **Four-Wheelers:** An even stronger positive correlation of 0.94 indicates that four-wheeler EV sales are highly dependent on the availability of charging infrastructure.



State-wise Analysis:

Top Performers:

- **Maharashtra:** Leading in both PCS (3,079) and total EV sales (396,045), indicating a well-developed infrastructure supporting high EV adoption.
- **Karnataka:** With 1,041 PCS and 312,995 EV sales, Karnataka shows a strong market, driven by a solid charging network.
- **Gujarat:** Despite having fewer PCS (476), Gujarat maintains high EV sales (181,389), demonstrating efficient infrastructure use.





Charging Infrastructure & EV Sales Correlation



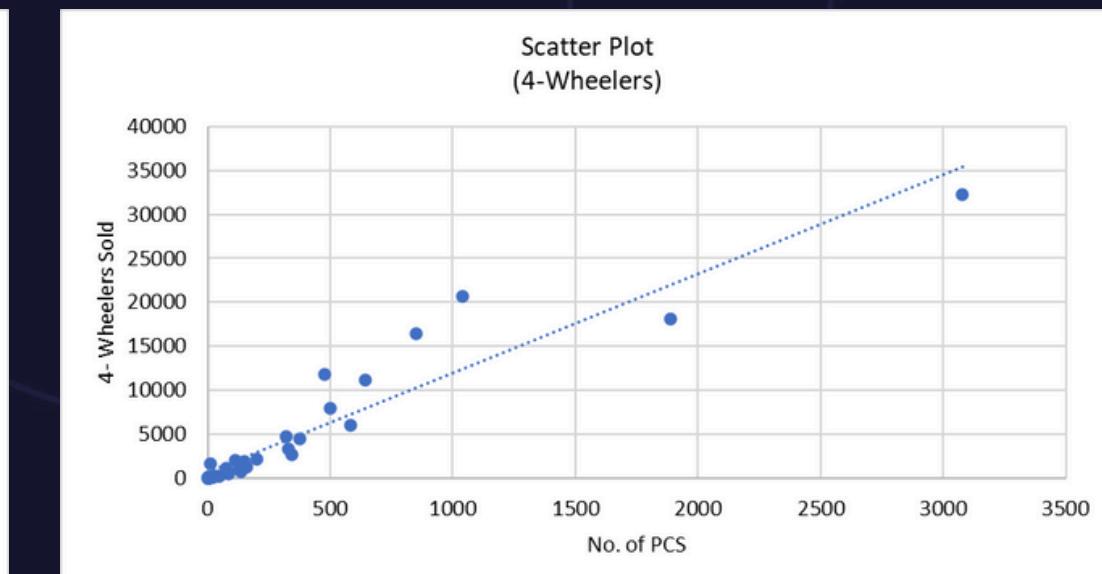
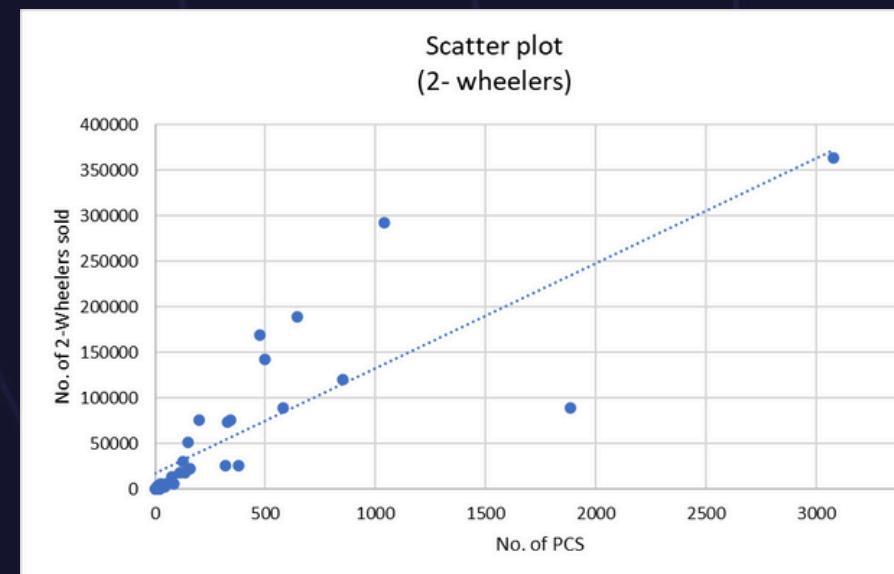
Low Performers:

- Arunachal Pradesh, Manipur, Nagaland, Sikkim: These states show low PCS and EV sales, indicating significant potential for market development if infrastructure is improved.
- D&D and DNH: With only 1 PCS and 355 EV sales, infrastructure development is crucial for boosting adoption.



Conclusion:

Expanding charging infrastructure is key to driving EV adoption across states, with high correlation values particularly in four-wheeler sales. States with well-developed infrastructure see higher EV sales, while those with fewer PCS show lower adoption, underscoring the importance of continued investment in charging stations.



2. Scatter Plots:

The scatter plots for both two-wheelers and four-wheelers visually confirm the positive correlation. The upward trend in both plots indicates that regions with more charging stations typically have higher EV sales.



Brand Ambassador Recommendation

NEERAJ CHOPRA

Why Neeraj Chopra?

Alignment with Brand Values:

- Gold medalist, representing dedication, success, and national pride—ideal for AtliQ Motors' innovative and high-quality EV/Hybrid vehicles.
- Discipline & Perseverance: His journey reflects the perseverance and commitment that resonate with AtliQ Motors' focus on long-term sustainability.

Appeal to Target Audience:

- Youth & Aspiring Athletes: A role model for the youth, especially in sports, health, and fitness—aligning with the eco-conscious and active lifestyle of potential EV customers.
- National Pride: His success story fosters a strong connection with a patriotic and broad audience across India.

Image & Influence:

- Clean & Positive Image: Humble, down-to-earth, and trustworthy—perfect for promoting sustainable and responsible products.
- Growing Popularity: An emerging sports icon with long-term potential, helping AtliQ Motors to tap into new market segments and build a strong brand presence.

Conclusion:

Neeraj Chopra's association with AtliQ Motors will not only enhance the brand's image but also establish a deep connection with a wide audience, making him the ideal brand ambassador for the Indian market.



Ideal State for Manufacturing Unit

GUJARAT

→ Strategic Location & Infrastructure:

- Longest Coastline (1,600 km): Major ports like Mundra & Kandla handle 40% of India's cargo, ideal for export/import.
- Industrial Hubs: Sanand houses major auto giants like Tata Motors, offering ready-to-use infrastructure.

→ Government Incentives:

- Subsidies: Up to 25% capital subsidy under Gujarat EV Policy 2021.
- Low Power Tariffs: Concessional rates as low as ₹4.75 per unit.
- Fast Approvals: Single-window clearance system expedited 90,000+ approvals.

→ Skilled Workforce:

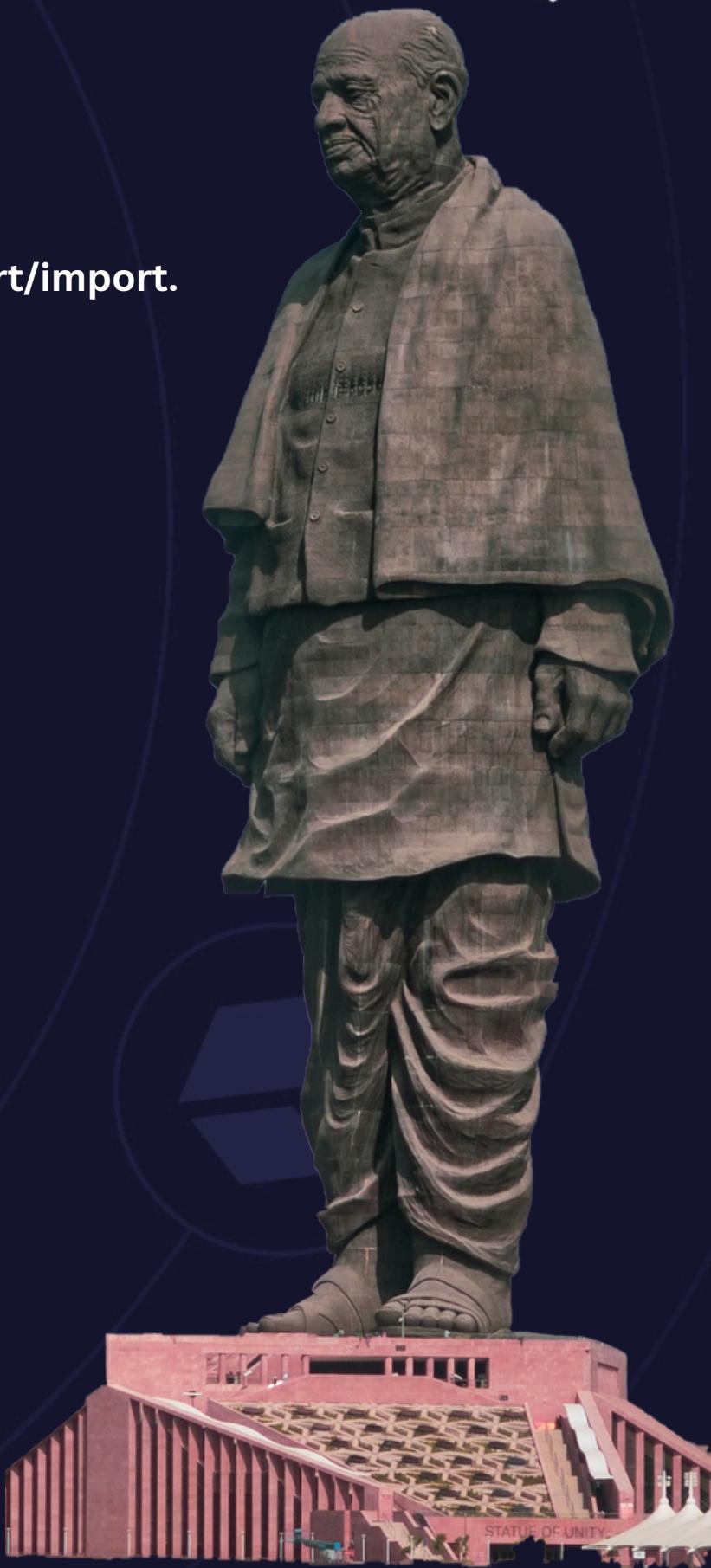
- Talent Pool: Over 65,000 engineering graduates annually from 200+ colleges.
- Training Institutes: 300+ ITIs offering industry-specific courses.

→ Business Environment:

- Ease of Doing Business: Top 3 in India; ₹1.63 lakh crore (\$22B) investments in 2021.
- Strong Economy: 9.6% GDP growth in FY 2021-22, above national average.

→ Renewable Energy:

- 19 GW Installed Capacity: Solar power leads with 10 GW.
- Sustainability: Additional incentives for green manufacturing practices.





Top 3 Recommendations for AtliQ Motors

- **Focus on Tier-2 and Tier-3 Cities:**

According to a study by Frost & Sullivan, Tier-2 and Tier-3 cities in India are witnessing a 50% year-on-year growth in electric vehicle (EV) adoption. Cities like Pune, Coimbatore, and Nagpur have shown significant increases in EV sales due to rising disposable incomes and growing environmental awareness .

The NITI Aayog's report on EV adoption highlights that 70% of the projected EV market growth in the next five years is expected to come from these smaller cities, where the market is less saturated compared to metro areas .

- **Enhancing After-Sales Service and Support for Long-Range Trips:**

A survey by J.D. Power revealed that 40% of potential EV buyers cited concerns about after-sales service availability as a major barrier to purchase . Furthermore, regions with established service networks see customer satisfaction ratings increase by 30%, which directly correlates to higher brand loyalty and repeat purchases .

The Ministry of Heavy Industries and Public Enterprises noted that customer confidence in EVs improves significantly when charging infrastructure is available along major highways, leading to a 25% higher likelihood of purchasing an EV for long-distance travel .

- **Offering Easy EMI Options:**

A report from the Reserve Bank of India (RBI) highlights that 60% of car buyers in Tier-2 and Tier-3 cities prefer easy EMI schemes, as it makes ownership more affordable . Additionally, data from a market survey by McKinsey & Company indicates that offering flexible financing options can increase the likelihood of purchase by 45%, especially in the INR 10-15 lakh vehicle segment .





The background features a dark blue circular network diagram. At the center is a large, semi-transparent circle containing the word "THANKYOU" in a bold, yellow sans-serif font. Surrounding this central circle are several smaller circles, each containing a stylized white geometric logo. These smaller circles are interconnected by thin, light-colored lines, creating a network-like pattern that radiates outwards.

THANKYOU