

CHALLENGE #12:

PROVIDE INSIGHTS TO AN AUTOMOTIVE COMPANY ON ELECTRIC VEHICLES LAUNCH IN INDIA



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ABOUT US

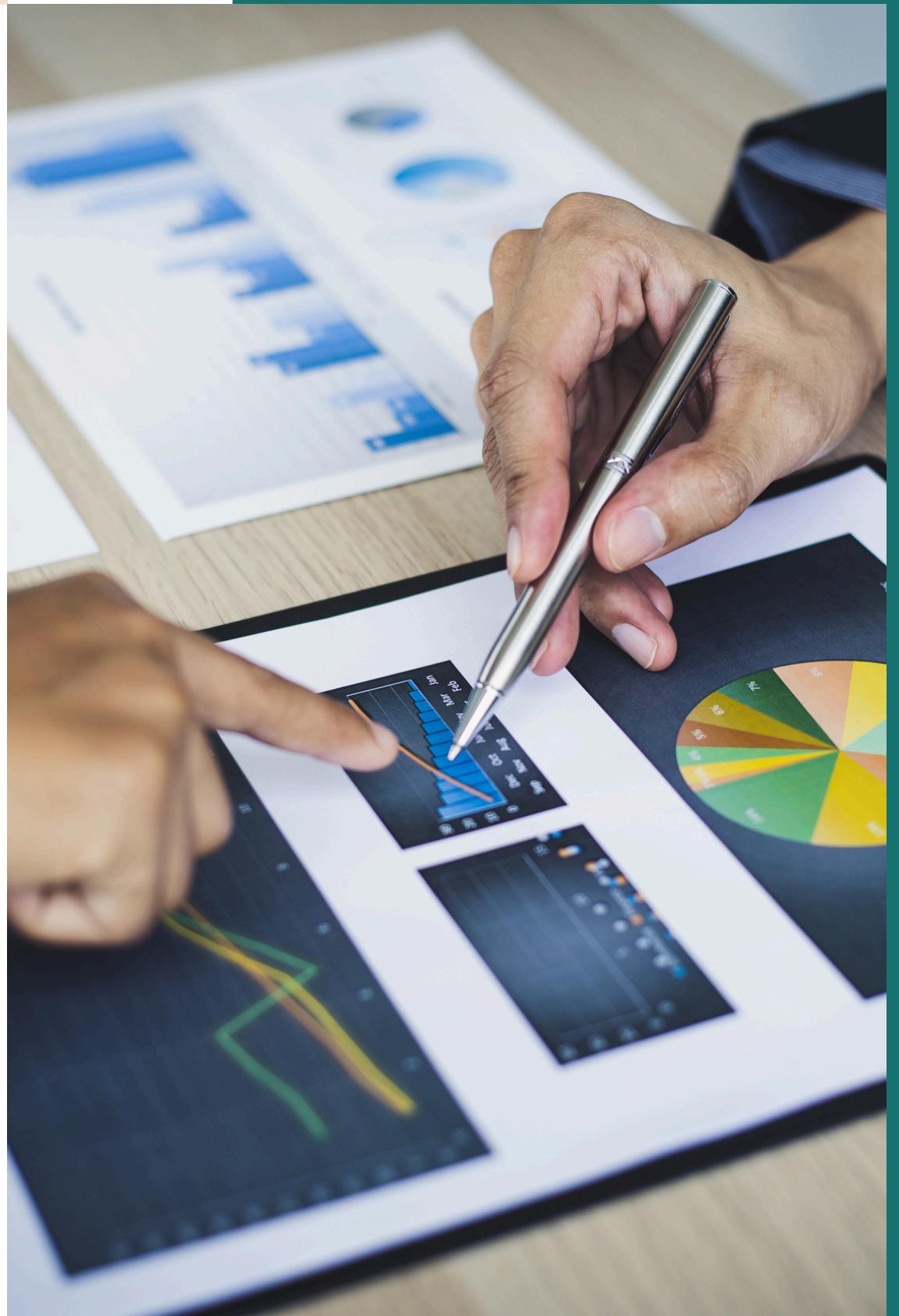
GET TO KNOW US BETTER

Atliq Motors is a leading automotive giant from the USA, specializing in electric vehicles (EVs). Over the past five years, the company has achieved remarkable growth, capturing a 25% market share in the electric and hybrid vehicle segment across North America. Known for innovation, Atliq Motors has been at the forefront of EV technology, offering a diverse range of high-performance electric bikes, cars, SUVs.

Thank you

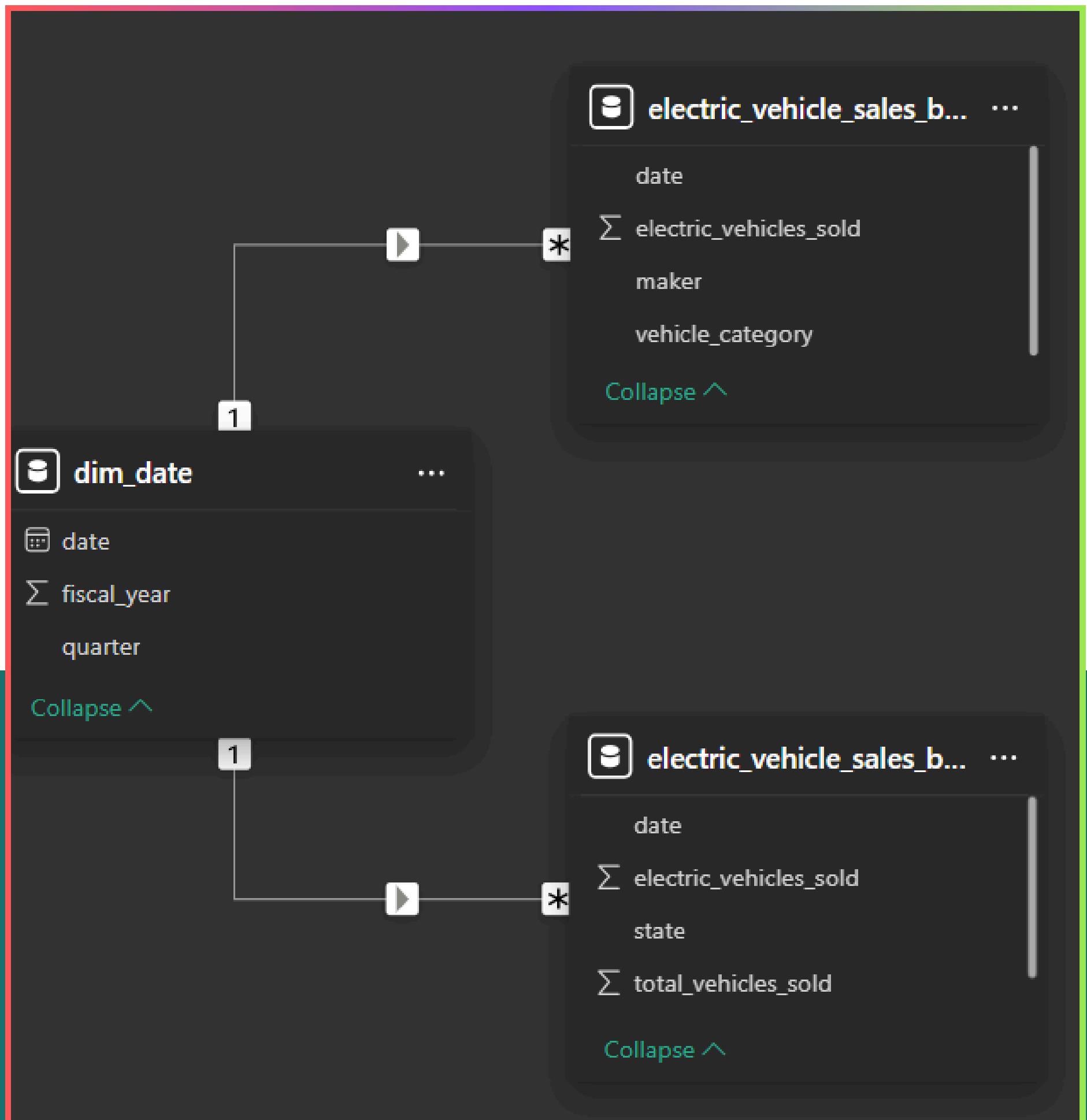
OBJECTIVE

As part of AtliQ Motors' expansion into the Indian market, the company aims to launch its bestselling electric and hybrid vehicle models in India, where its current market share stands at less than 2%. To ensure a successful entry, AtliQ Motors India seeks to conduct a comprehensive market study of the existing EV and hybrid vehicle landscape. This study will focus on understanding the competitive landscape, analyzing consumer preferences, identifying state-wise and manufacturer-wise sales trends, and evaluating government policies and incentives for EV adoption. The insights gathered will inform AtliQ Motors' market entry strategy and guide their product offerings to meet the needs of Indian consumers.



ABOUT DATA

- The organisation has provided with Data in which 2 are fact tables : electric vehicle sales by makers and electric vehicle sales by state and one dimension table with dim date.
- Sales Data is available for fiscal year 2022 to 2024.

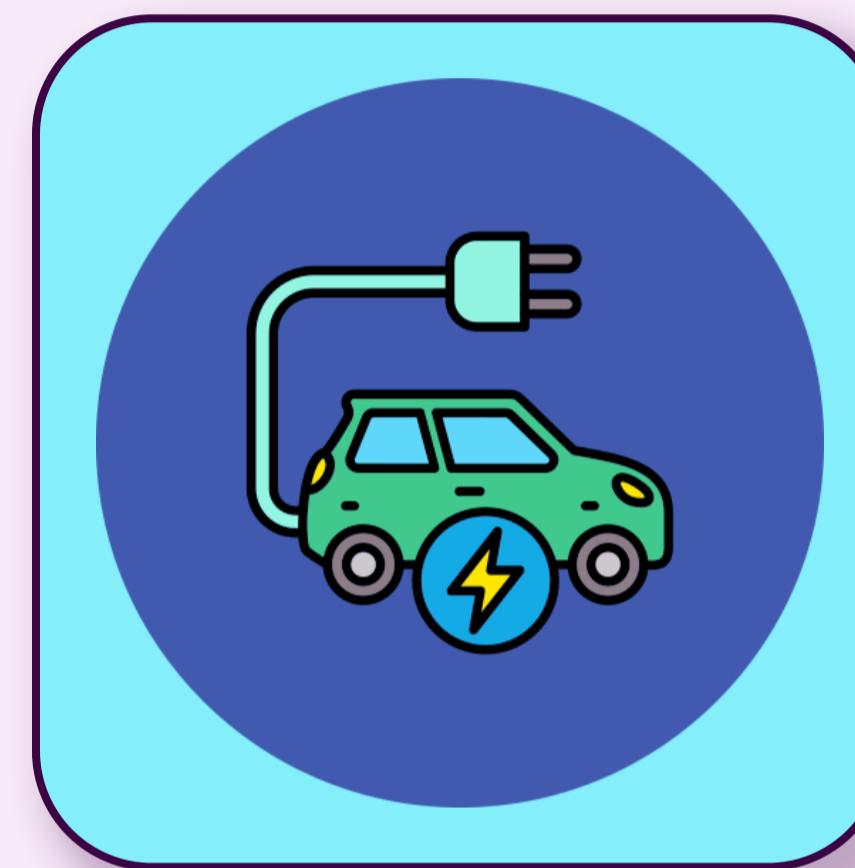


Electric Vehicle Sales Analysis



KEY INDICATOR

Get access to **TOP & BOT performer** with respect to **State** and **Manufacturer**.



MANUFACTURERS VIEW

Get YOY change %, **CAGR**, TOP & BOT Makers, Total EV sales, **Market Share %**, Sales distribution.



STATES VIEW

Get **Penetration %, CAGR**, Projected Sales for 2K30, **RGR**, Sales distribution.

2.1M

Total No. EV Sold by States

57.2M

Total No. Vehicle sold by States

3.61%

Penetration % of EV by state

25.2K

Total No. of Charging Stations

13.6

AVG CAGR PCT by States

2.2M

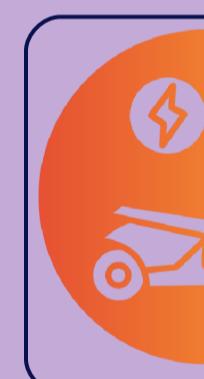
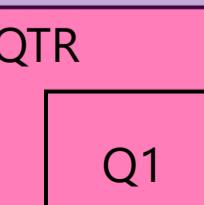
Projected TV sales for 2030

2.1M

Total No. EV sold by Makers

93.9%

AVG CAGR % by Makers

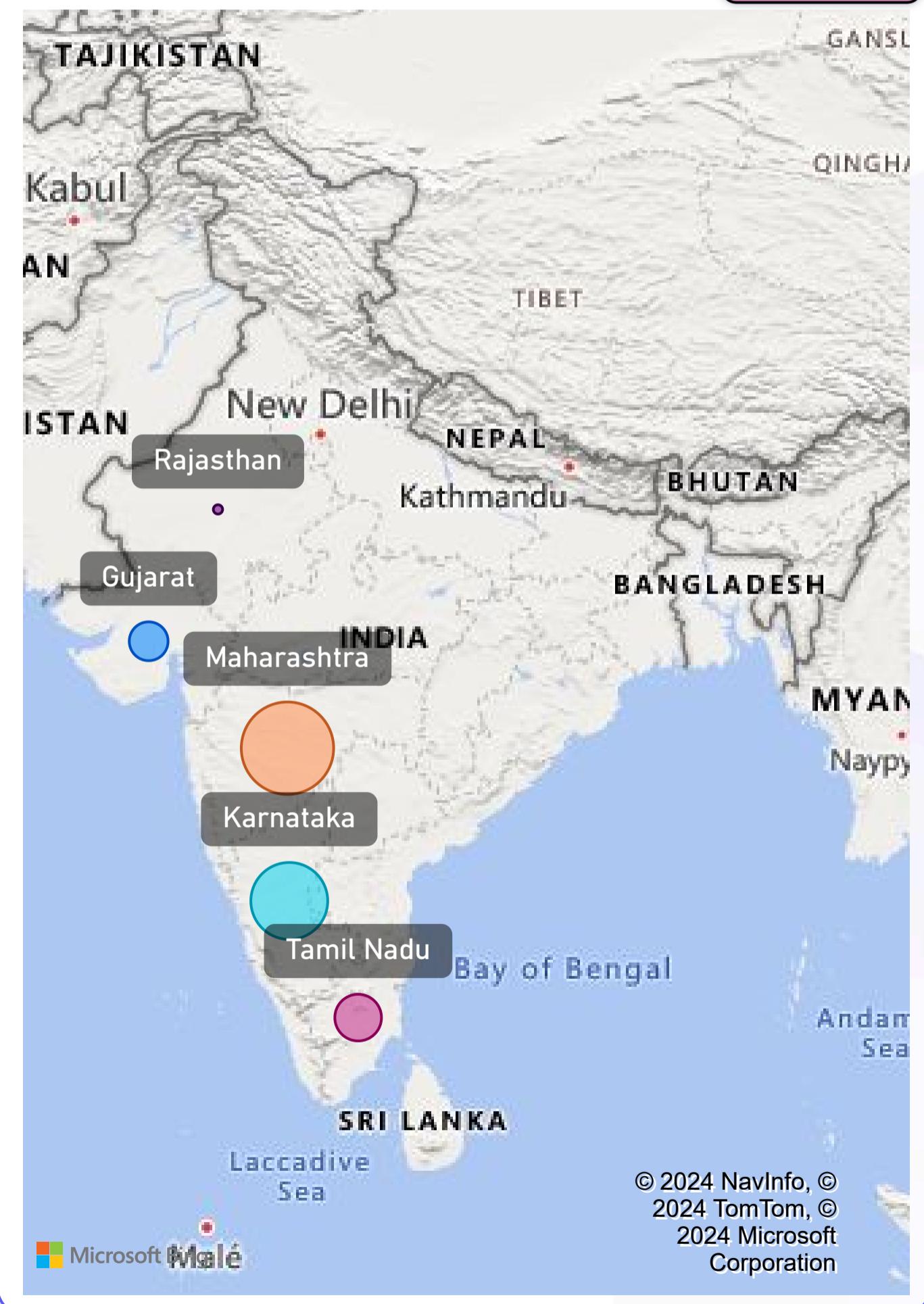
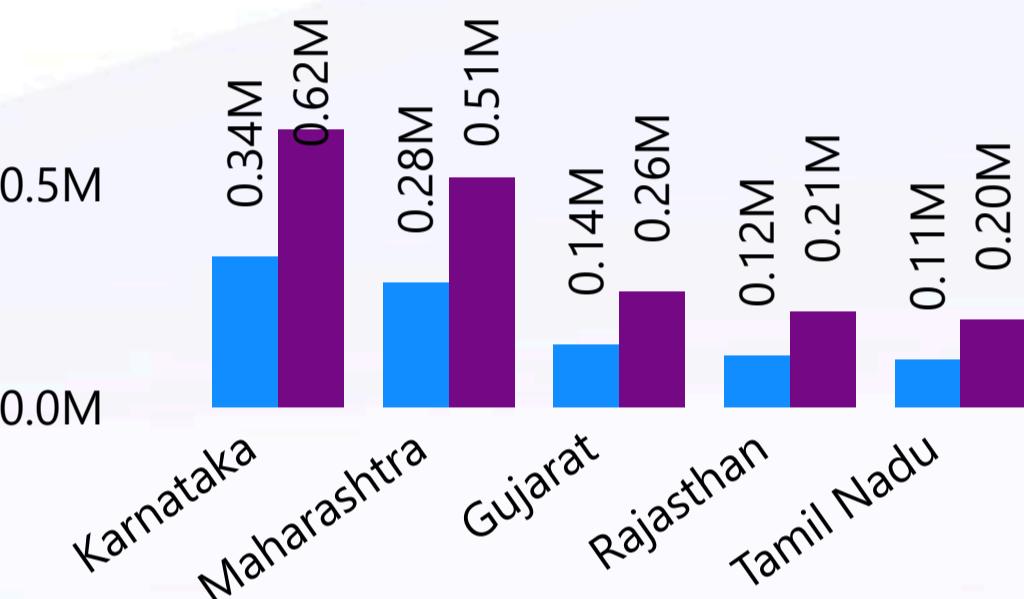
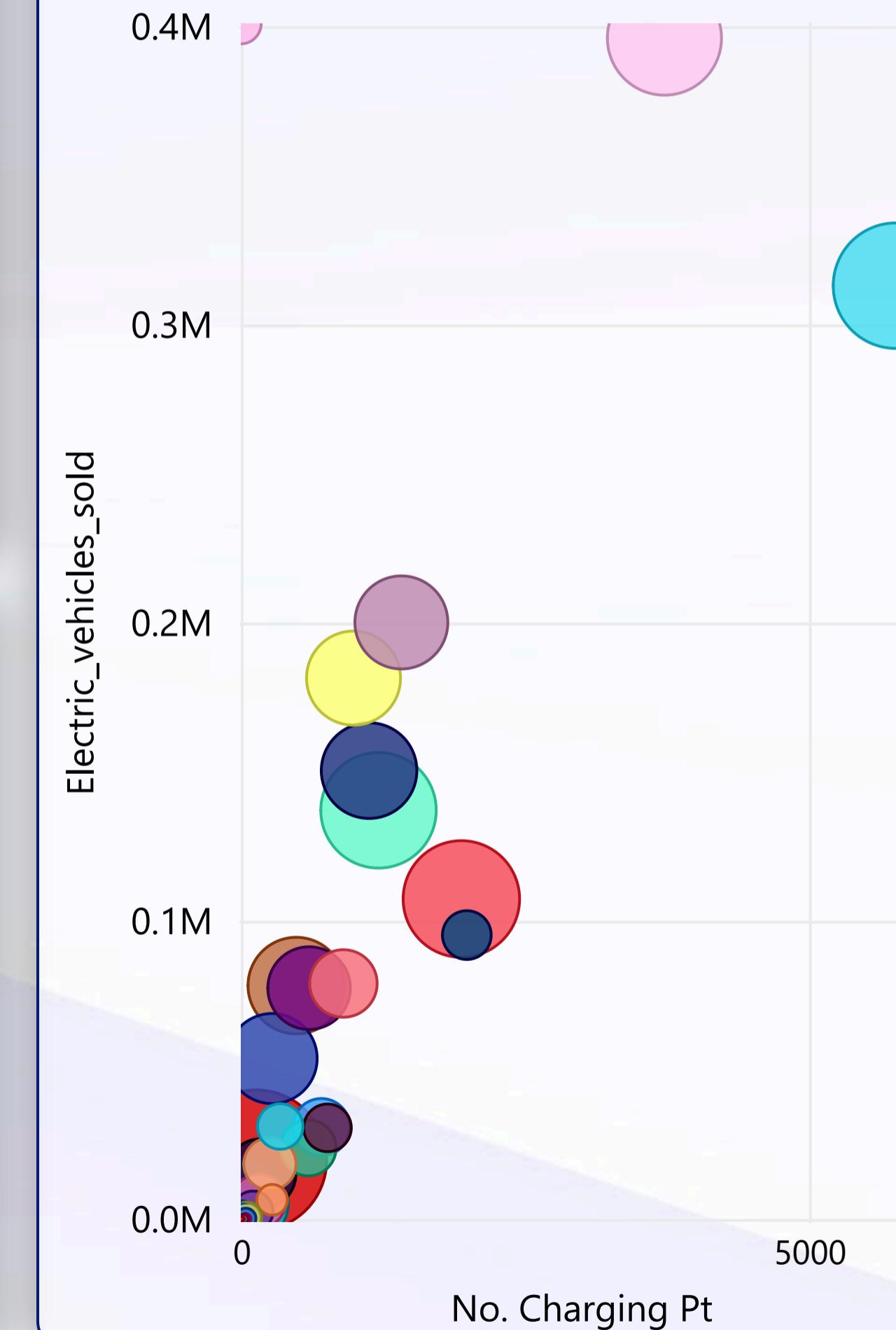
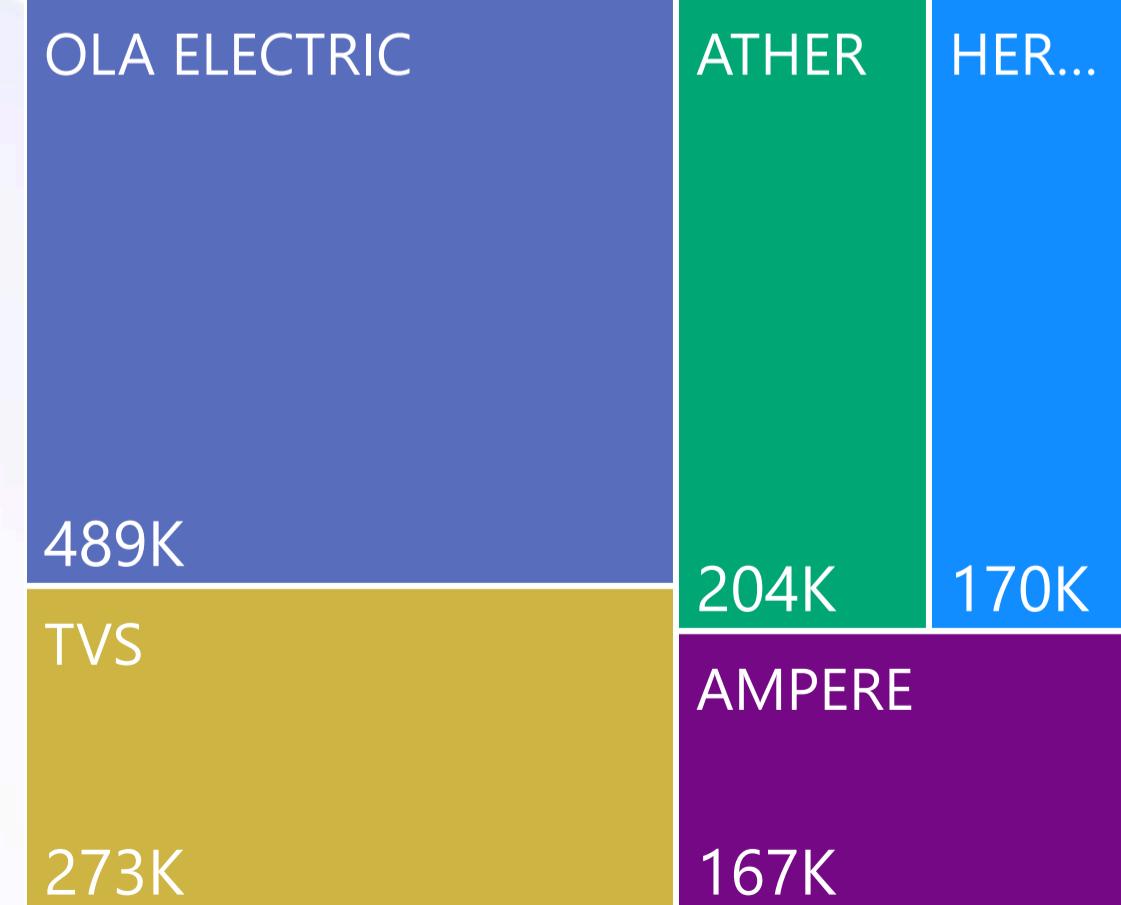
**HOME****KEY INDICATOR****MAKER****STATES****2022****2023****2024****QTR**

Q1

Q2

Q3

Q4

Top 5 States by Sales**BOT****Top States by Pr. Sales for 2030**
● Projected EV sales for 2030 ● Projected_sales_by_st...
**Charging Station VS EV Sold****Top 5 Makers**

Total EV Sold

0.09M✓

LY: 0.05M (+83.08%)

YOY Chg %

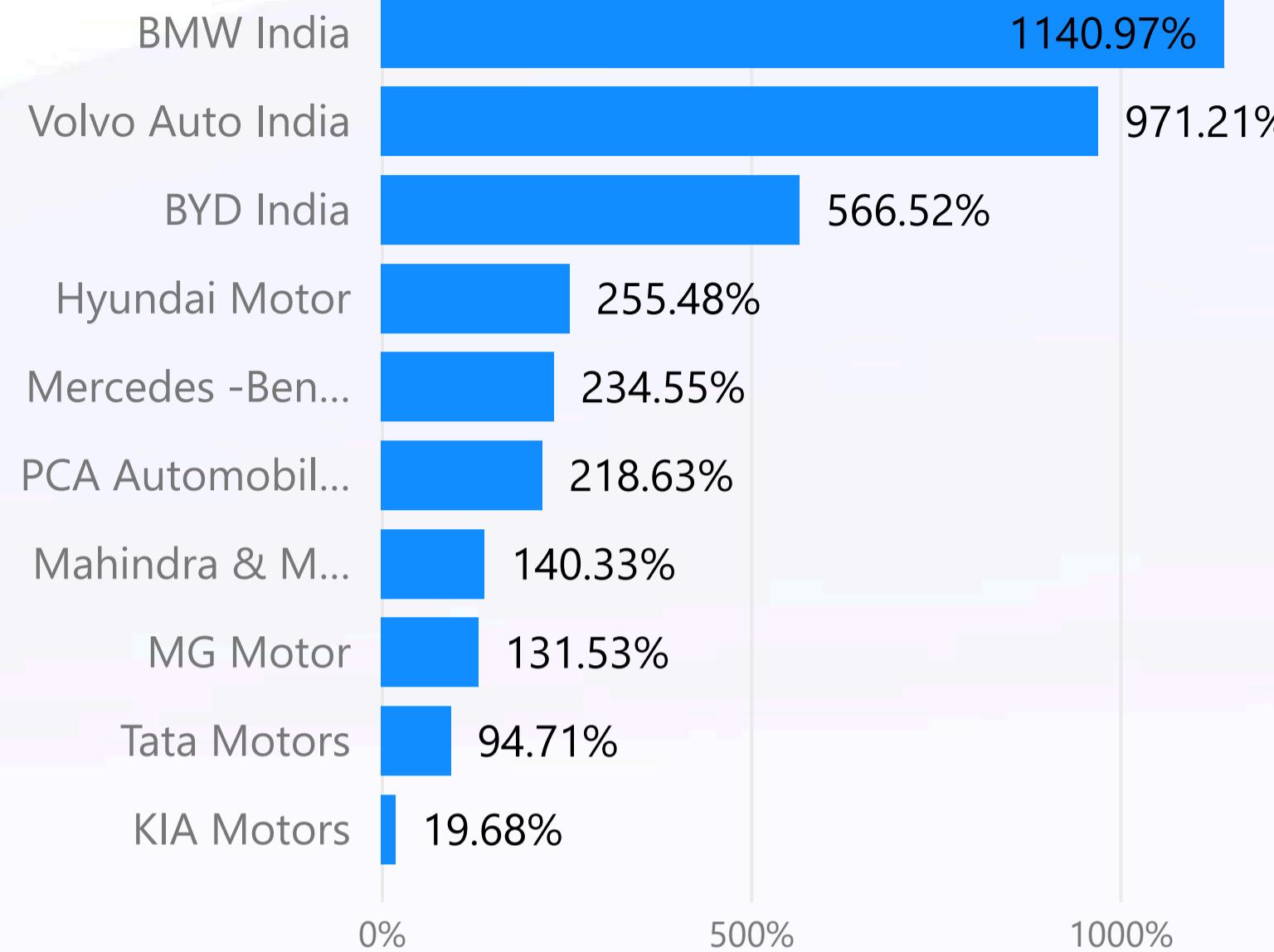
83.08%!

LY: 156% (-46.57%)

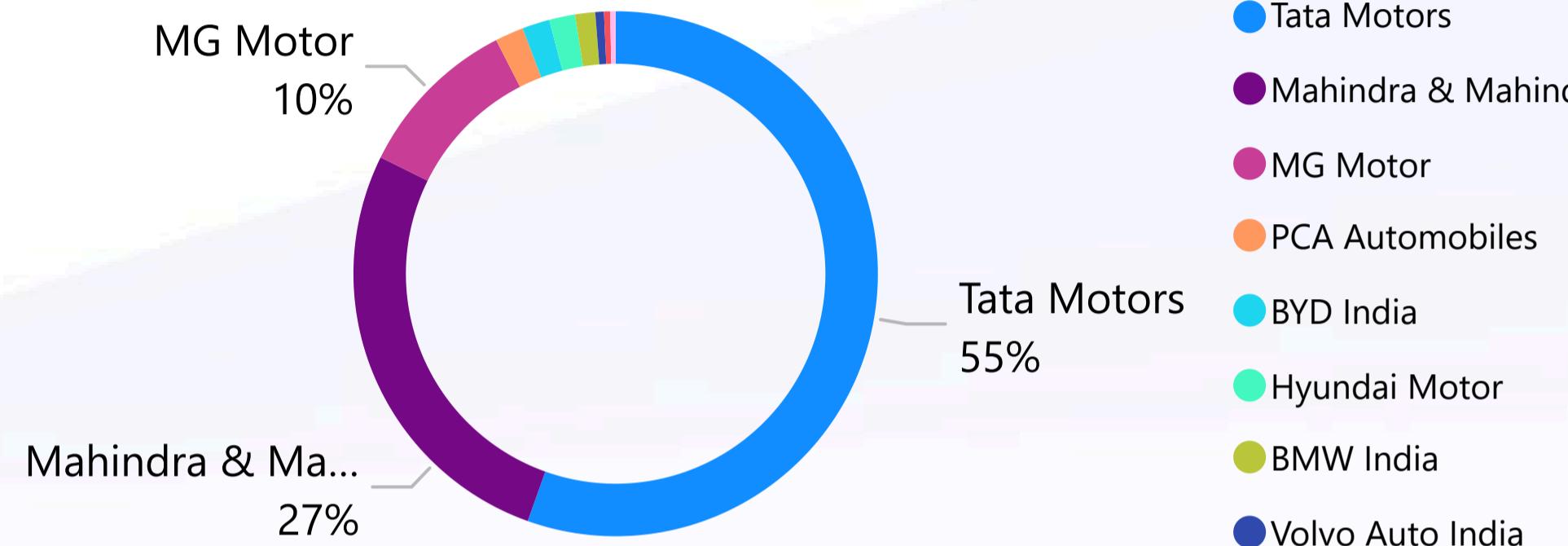
Avg CAGR %

116.3%

Compounded Annual Growth Rate



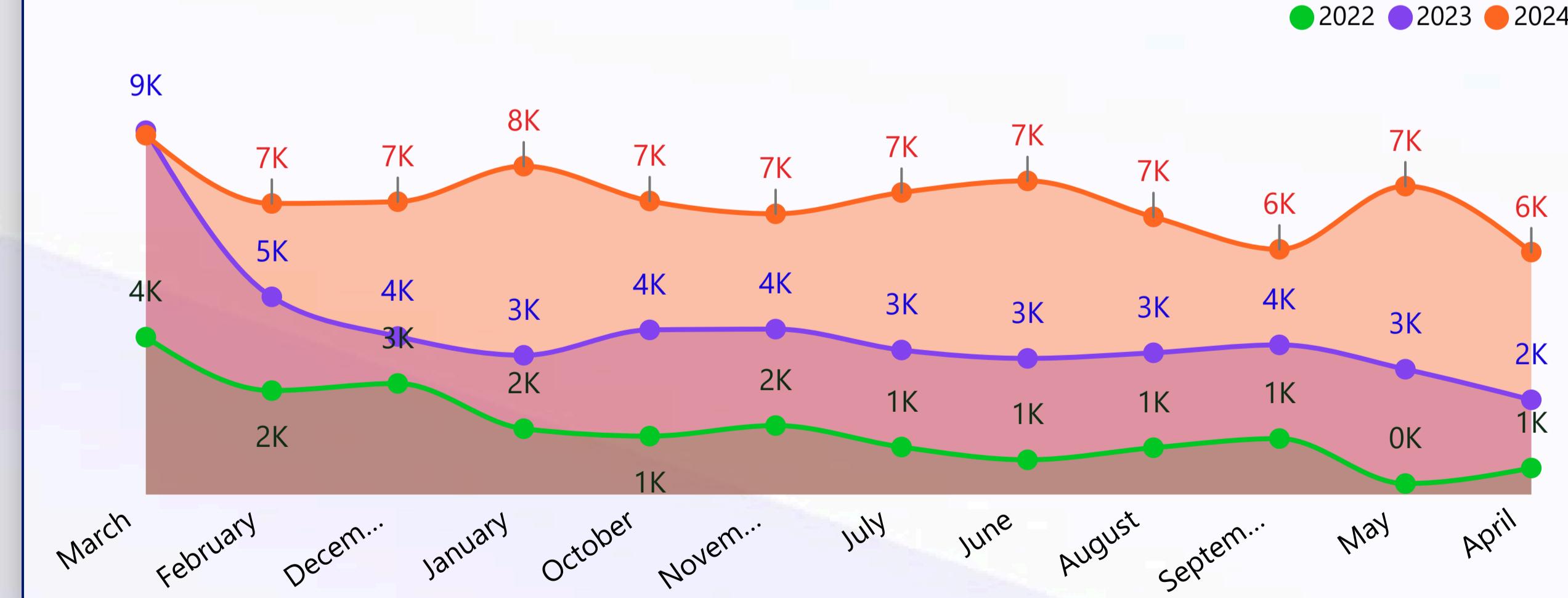
Market Share %



Key Matrix by Maker

Maker	EV_sold	YOY_Chg%
Tata Motors	48.2K	71.8%
Mahindra & Mahindra	23.3K	69.1%
MG Motor	8.8K	169.4%
PCA Automobiles	1.5K	915.2%
BYD India	1.5K	59.3%
Hyundai Motor	1.4K	141.3%
BMW India	1.1K	278.2%
Volvo Auto India	0.5K	337.1%
KIA Motors	0.3K	43.2%
Total	86.9K	83.1%

Sales Trend by Month



HOME



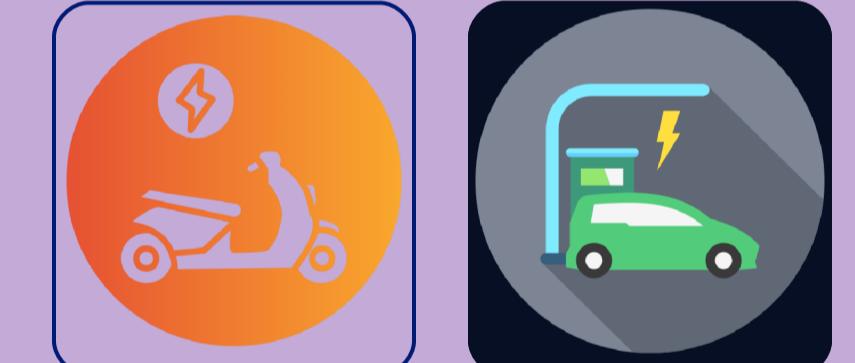
KEY
INDICATOR



MAKER



STATES



2022

2023

2024

QTR

Q1

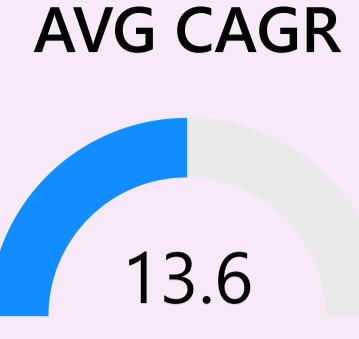
Q2

Q3

Q4

EV Sold
1.02M✓
LY: 0.78M
(+31.5%)

Penetration
4.81%✓
LY: 3.95%
(+21.84%)



Proj. TVS30
2.2M

Pro. Pen.%30
54.2%

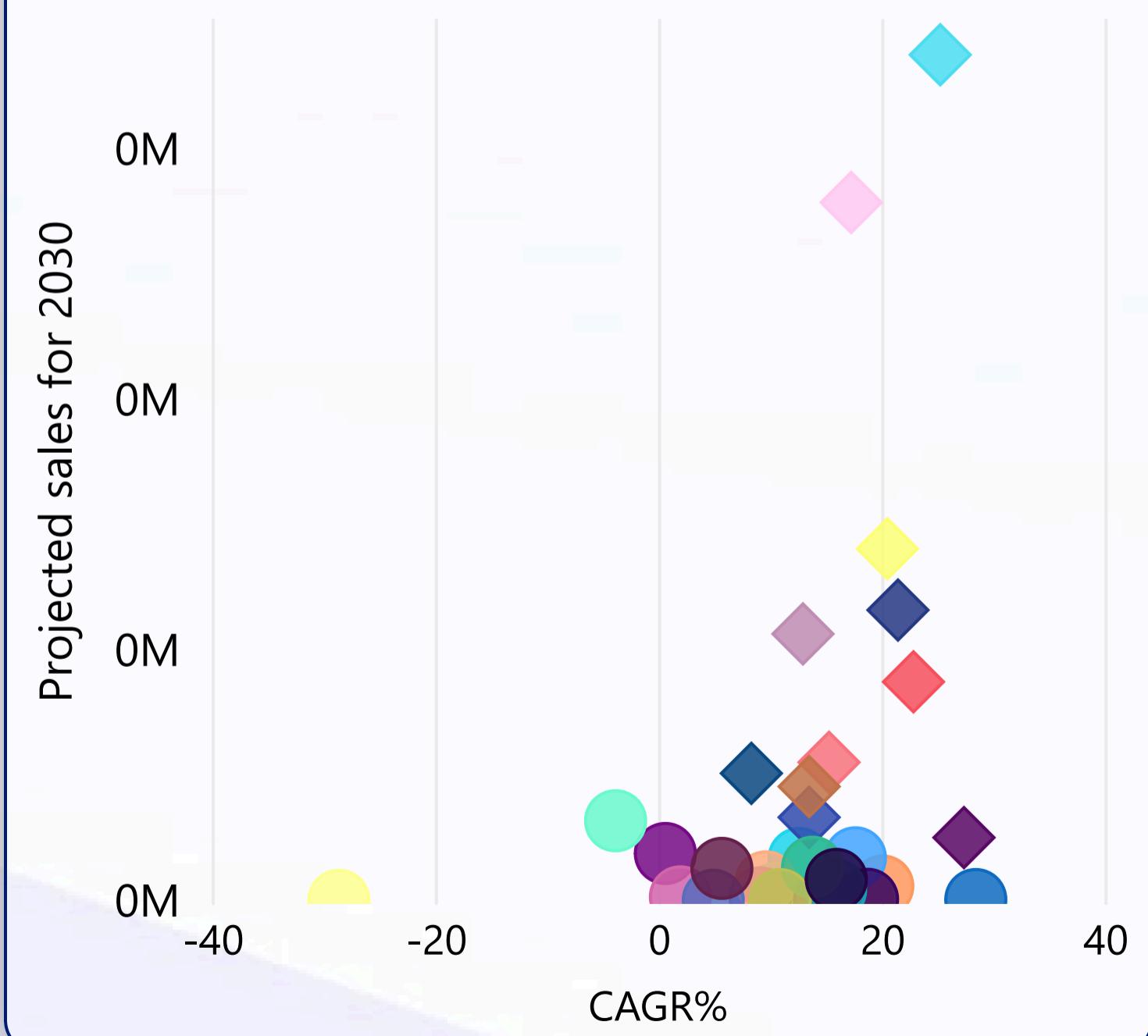
Declining Penetration by States



Performance by State

state	EV_Sold	TV Sold	PRate	23vs24_RGR	22vs24_RGR	GDP	PCI	Chrg St.
Maharashtra	197.17K	2294K	8.60%	25%	177%	14.8%	249K	3728
Karnataka	160.99K	1582K	10.18%	80%	410%	8.0%	227K	5765
Tamil Nadu	94.31K	1717K	5.49%	73%	270%	8.6%	169K	1413
Gujarat	84.36K	1591K	5.30%	53%	425%	7.9%	240K	992
Kerala	73.94K	638K	11.59%	69%	346%	4.0%	232K	1212
Rajasthan	66.44K	1300K	5.11%	55%	361%	4.9%	260K	1129
Uttar Pradesh	57.76K	2932K	1.97%	278%	1087%	8.5%	158K	1989
Delhi	46.72K	606K	7.71%	16%	250%	4.0%	78K	1941
Madhya Pradesh	43.22K	1286K	3.36%	66%	476%	4.2%	124K	903
Odisha	39.12K	618K	6.33%	66%	442%	2.7%	124K	488
Andhra Pradesh	33.18K	783K	4.24%	34%	194%	4.5%	155K	601
Chhattisgarh	28.54K	503K	5.67%	67%	657%	1.5%	113K	276
West Bengal	16.86K	962K	1.75%	85%	567%	6.0%	163K	763
Bihar	15.07K	1133K	1.33%	82%	336%	2.6%	53K	347
Haryana	11.79K	732K	1.61%	48%	625%	3.8%	291K	709
Punjab	11.20K	574K	1.95%	225%	455%	2.9%	86K	593
Goa	10.80K	79K	13.75%	51%	280%	0.4%	520K	137
Jharkhand	7.83K	495K	1.58%	23%	318%	1.4%	75K	256
Uttarakhand	6.34K	233K	2.72%	18%	208%	1.1%	76K	177

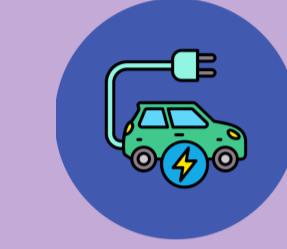
Projected Sales for 2030 w.r.t CAGR%



HOME



KEY
INDICATOR



MAKER



STATES



2022

2023

2024

QTR

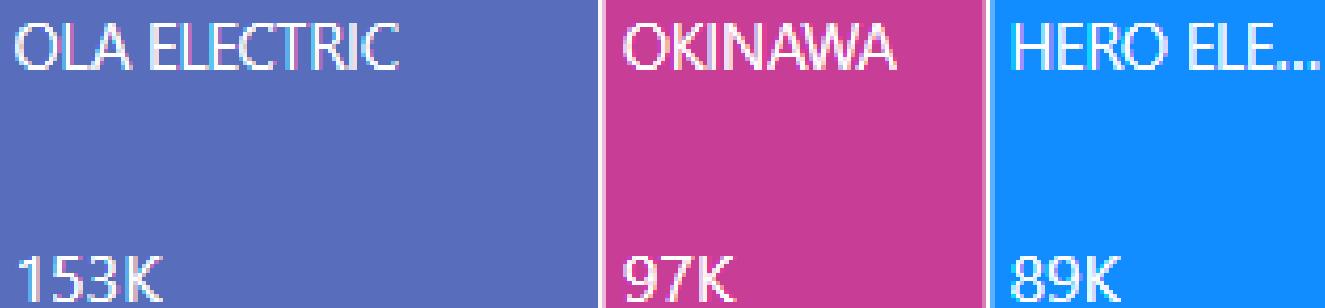
Q1 Q2 Q3 Q4

PROBLEM: 1

List the top 3 and bottom 3 makers for the fiscal years 2023 and 2024 in terms of the number of 2-wheelers sold

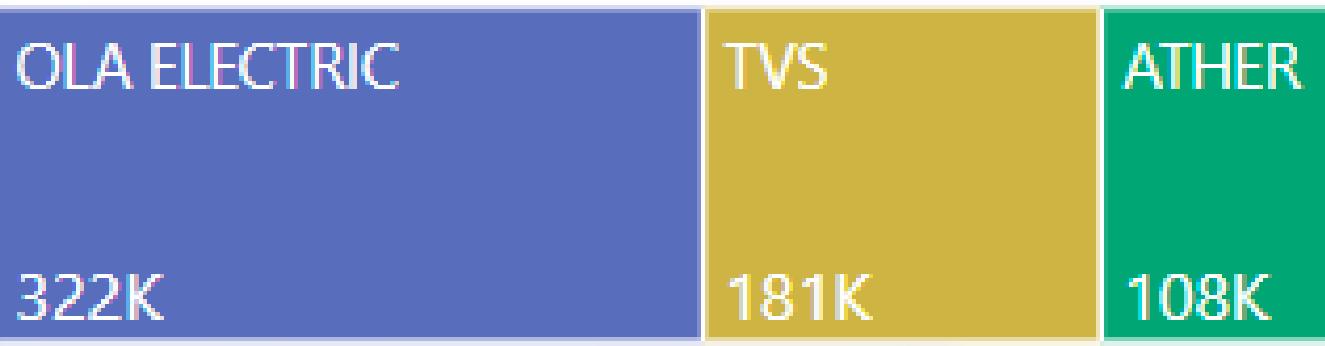
01 Top 3 Makers

Top 3 Makers of 2023



For 2k23, Top 3 Makers are OLA Electric (322K), Okinawa (97K), Hero Electric (89K) respectively.

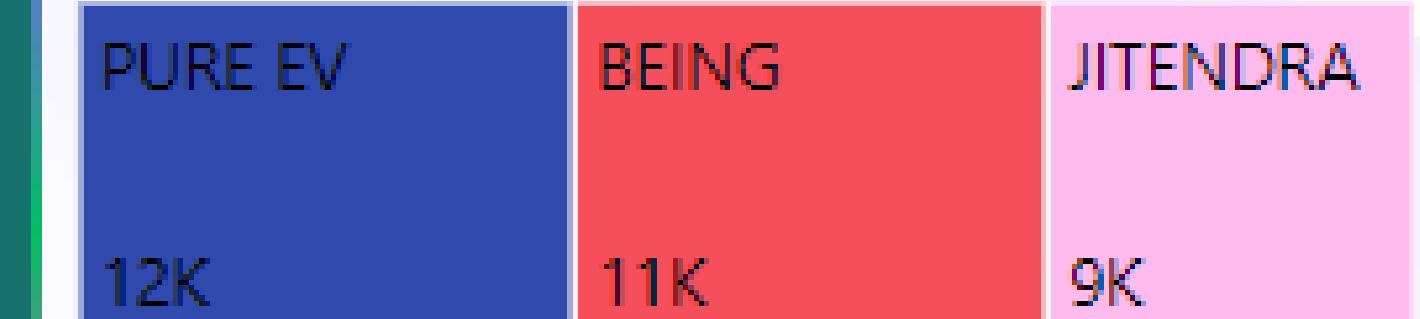
Top 3 Makers of 2024



For 2k24, Top 3 Makers are OLA Electric (322K), TVS (181K), Ather (108K) respectively.

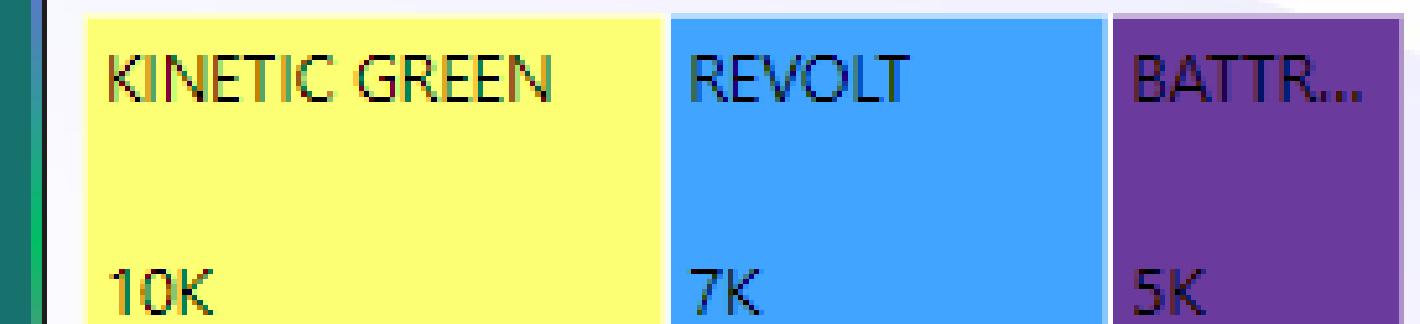
02 Bot 3 Makers

Bottom 3 Makers of 2023



For 2k23, Bot 3 Makers are Pure EV (12K), Being (11K), Jitendra (9K) respectively.

Bottom 3 Makers of 2024

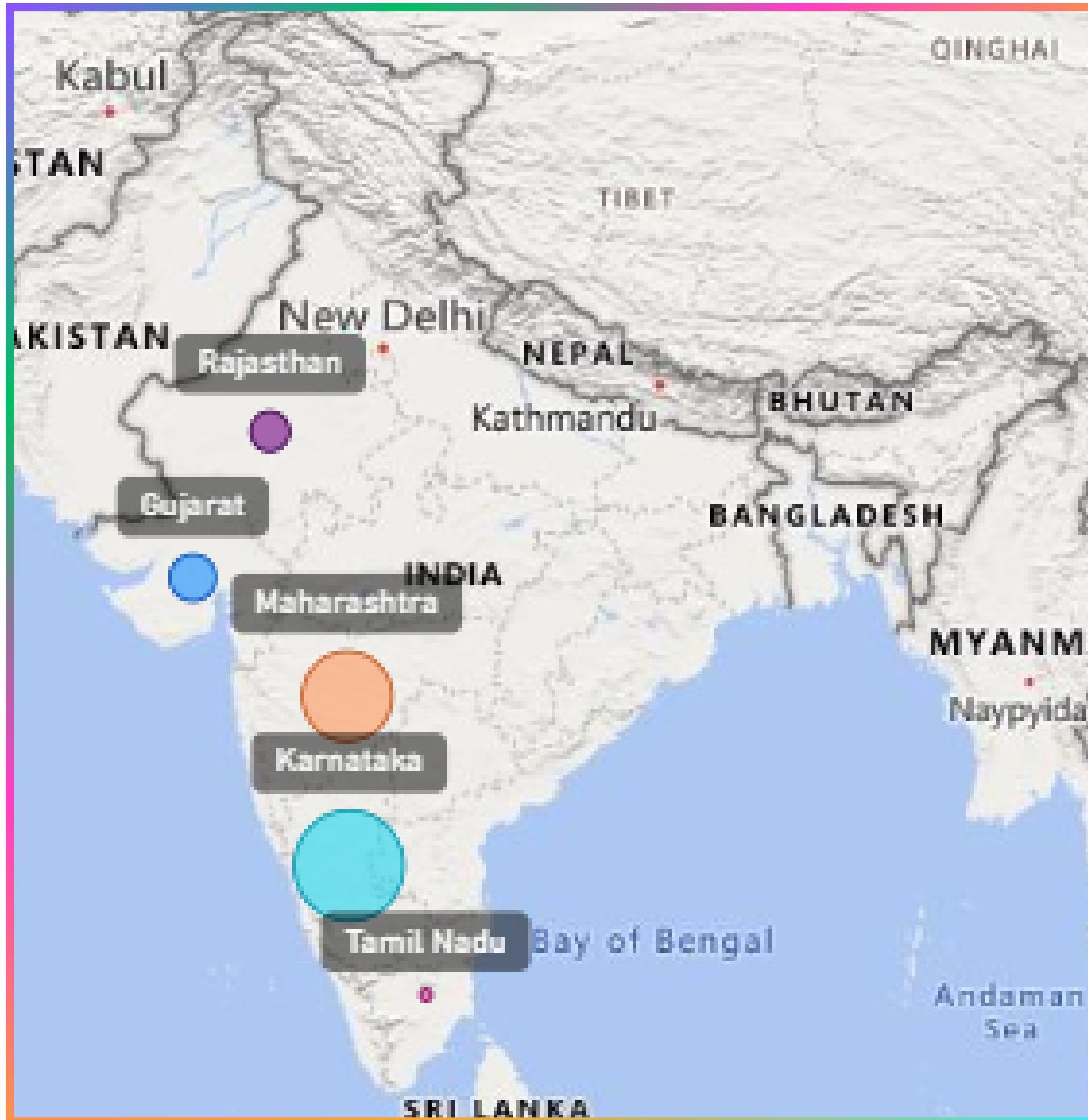


For 2k24, Bot 3 Makers are Kinetic Green (10K), Revolt (7K), Battery (5K) respectively.

PROBLEM: 2

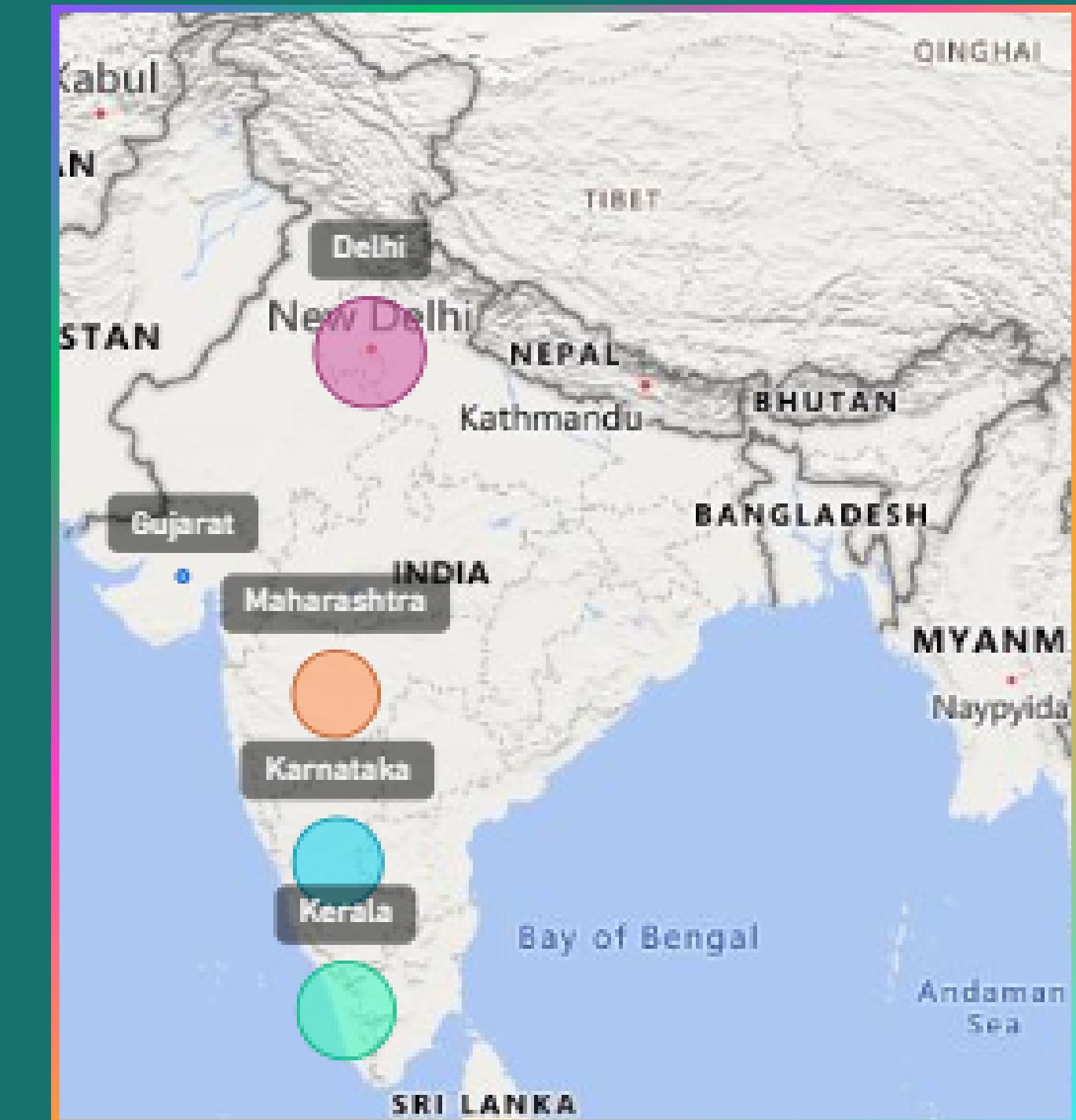
Identify the top 5 states with the highest penetration rate in 2-wheeler and 4-wheeler EV sales in FY 2024.

Top 5 States by Penetration rate in 2-Wheeler EV Segment



1. Karnataka: 9.12%
2. Maharashtra: 7.54%
3. Gujarat: 5.33%
4. Rajasthan: 5.14%
5. Tamil Nadu: 4.8%

Top 5 States by Penetration rate in 4-Wheeler EV Segment

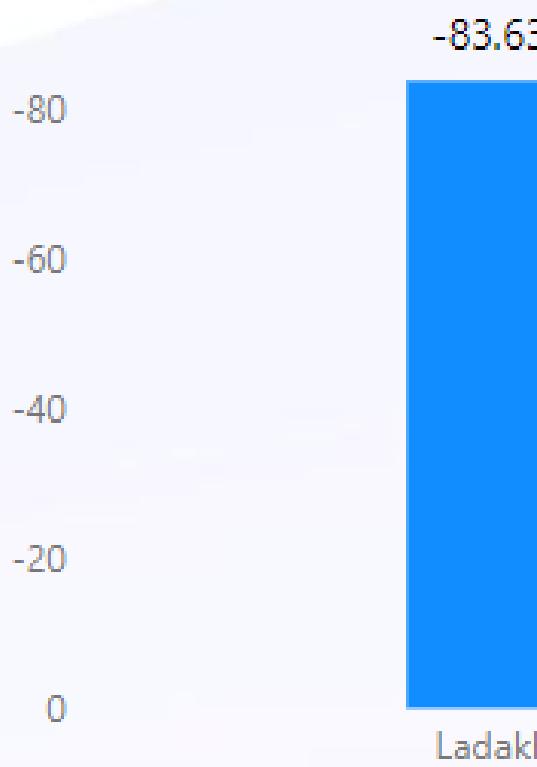


1. Delhi: 3.42%
2. Kerla: 2.91%
3. Karnataka: 2.52%
4. Maharashtra: 2.52%
5. Gujarat: 1.25%

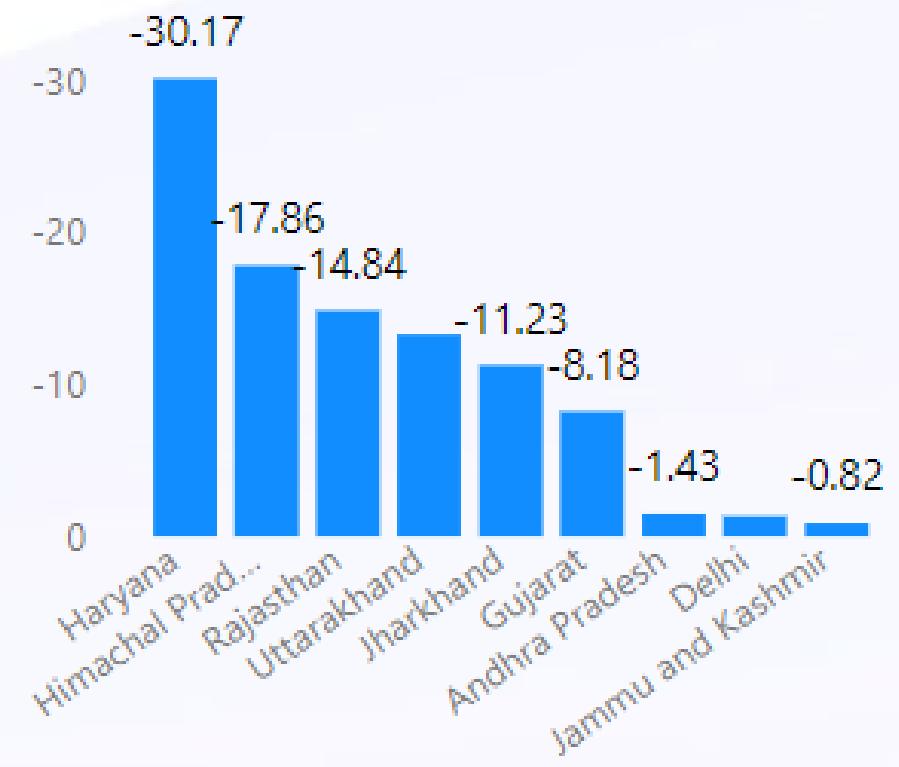
PROBLEM: 3

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

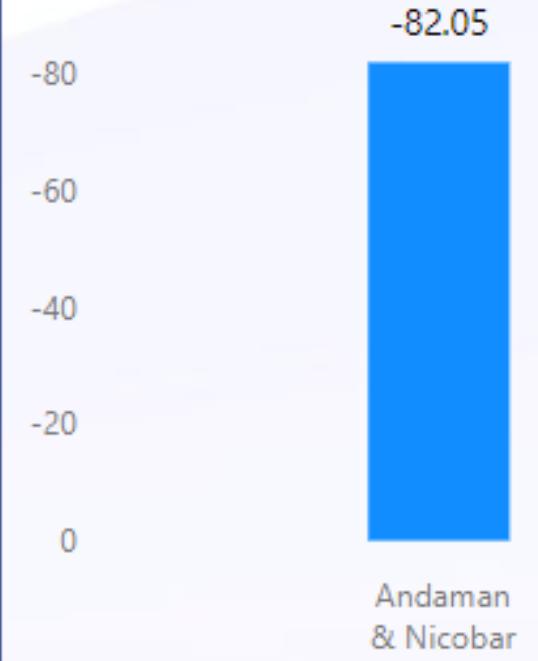
Declining Penetration by States for 2024



Declining Penetration by States for 2024



Declining Penetration by States for 2023



Declining Penetration by States for 2024



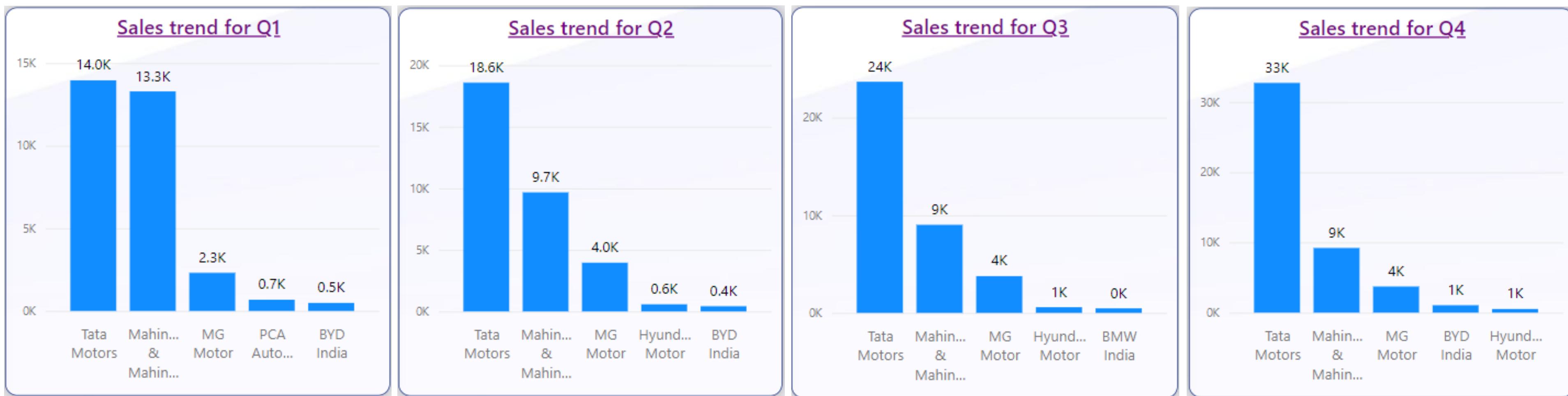
Declining Penetration % for 2-Wheeler Category

There are several factors affecting penetration of EV some of it like Lack of Charging Infrastructure, High Initial Cost of EVs, Geographical and Climatic Challenges, Reliance on Public Transport or Alternative Modes, Limited Model Availability, Perceived Battery and Maintenance Concerns.

Declining Penetration % for 4-Wheeler Category

PROBLEM: 4

What are the quarterly trends based on sales volume for the top 5 EV makers (4-wheelers) from 2022 to 2024?



Quarterly Sales Trend for Top Makers

With these results, Q4 emerged as the top-performing quarter, achieving the highest EV sales i.e 48.5K. It was followed by strong numbers in Q3 with 38.8K and Q2 with 34.1K in total sales. Q1, however, recorded the lowest sales at 31.6K. This impressive growth trajectory toward the year's end highlights Q4 as a key driver of EV demand.

PROBLEM: 5

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

States	EV_Sold	TV Sold	P.Rate	GDP	Chrg Pt.
Karnataka	51.25K	0.43M	17.9%	8.0%	5765
Delhi	13.28K	0.16M	15.5%	4.0%	1941

Karnataka

- Karnataka was one of the first states to adopt dedicated EV policy in 2017. This policy included various incentives, like tax exemptions and subsidies, to encourage EV adoption and manufacturing.
- Additionally, Bengaluru's strong innovation ecosystem, with numerous EV startups, charging infrastructure companies, and research hubs, has made it a prime testing ground for new EV technologies, increasing accessibility and visibility of EVs in the city.
- Because of high commuter demand and extensive charging infrastructure have significantly boosted EV adoption rates.

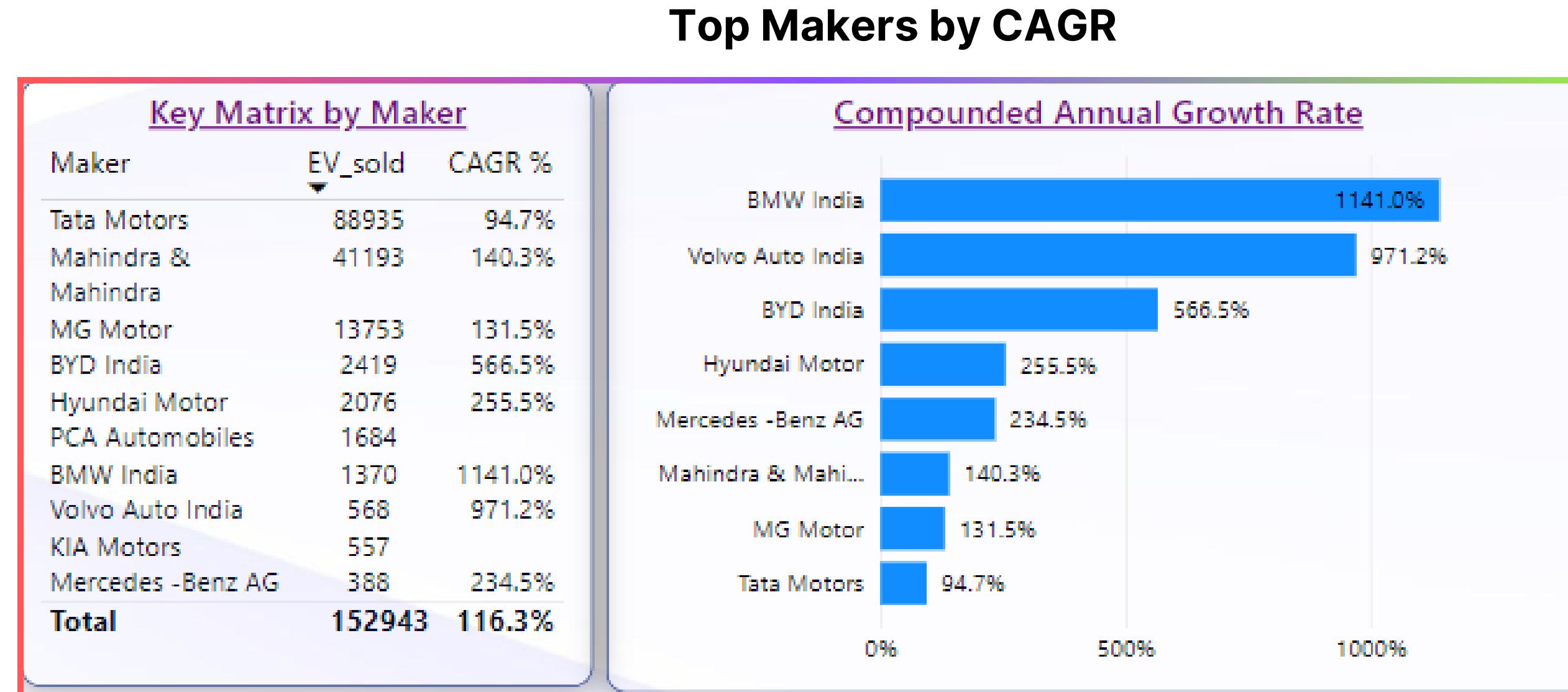
Delhi

- Delhi, while active in EV policy, implemented comprehensive incentives later than Karnataka, only introducing its substantial EV policy in 2020.
- Also penetration of public transportation and the widespread use of CNG in public transit lessen the urgency for EV adoption in Delhi.
- Additionally, Delhi's charging network growth has been more recent and is still catching up with user demand.



PROBLEM: 6

List down the compounded annual growth rate (CAGR) in 4-wheeler units for the top 5 makers from 2022 to 2024.



The Compounded Annual Growth Rate (CAGR) for luxury brands like BMW and Volvo is **high because they are in the early stages** of entering the EV market. However, being in the luxury category, their **sales** volumes will likely **remain lower** compared to mainstream brands. In contrast, makers like Tata, Mahindra & Mahindra, and MG Motor show a **relatively lower CAGR, reflecting a more stable presence** in the EV market. These brands have already established a solid base, leading to steady growth rather than the rapid initial growth seen with luxury brands.

PROBLEM: 7

List down the top 10 states that had the highest compounded annual growth rate (CAGR) from 2022 to 2024 in total Electric vehicles sold.

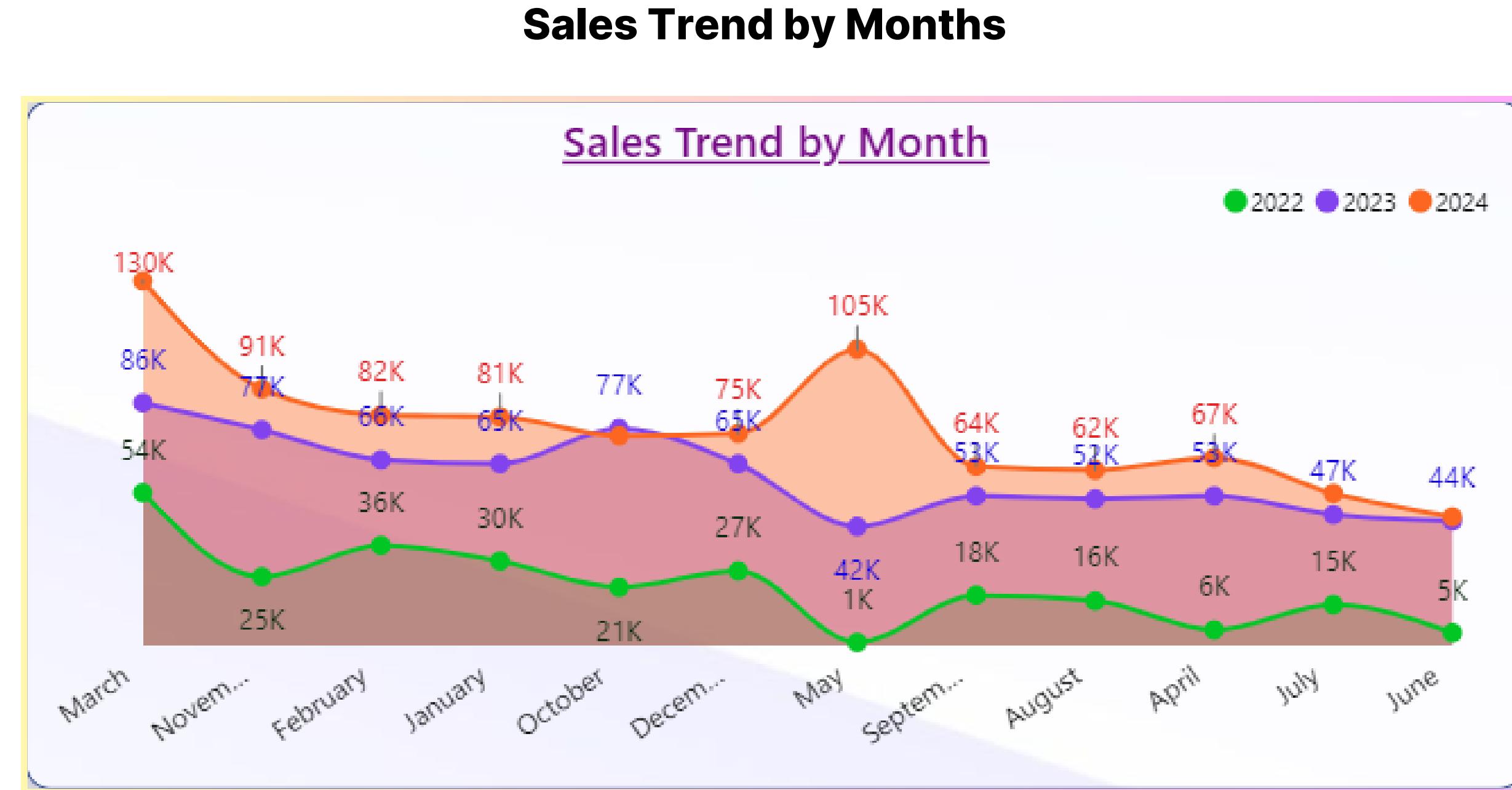
Top 10 States with highest CAGR

Performance by State				
States	EV_Sold	P.Rate	Chrg Pt.	CAGR %
Meghalaya	0.18K	0.7%	43	28.5
Goa	19.68K	22.2%	137	27.4
Karnataka	313.00K	15.8%	5765	25.3
Delhi	107.31K	13.7%	1941	22.9
Rajasthan	150.37K	8.1%	1129	21.5
Gujarat	181.39K	8.3%	992	20.5
Assam	6.42K	1.1%	276	20.1
Mizoram	0.34K	1.3%	12	18.8
Arunachal Pradesh	0.03K	0.2%	41	18.3
Andaman & Nicobar	0.08K	1.1%	4	18.3

A higher Compounded Annual Growth Rate (CAGR) indicates strong future potential for the EV business in that state, making it easier to identify which states to prioritize for focused business expansion.

PROBLEM: 8

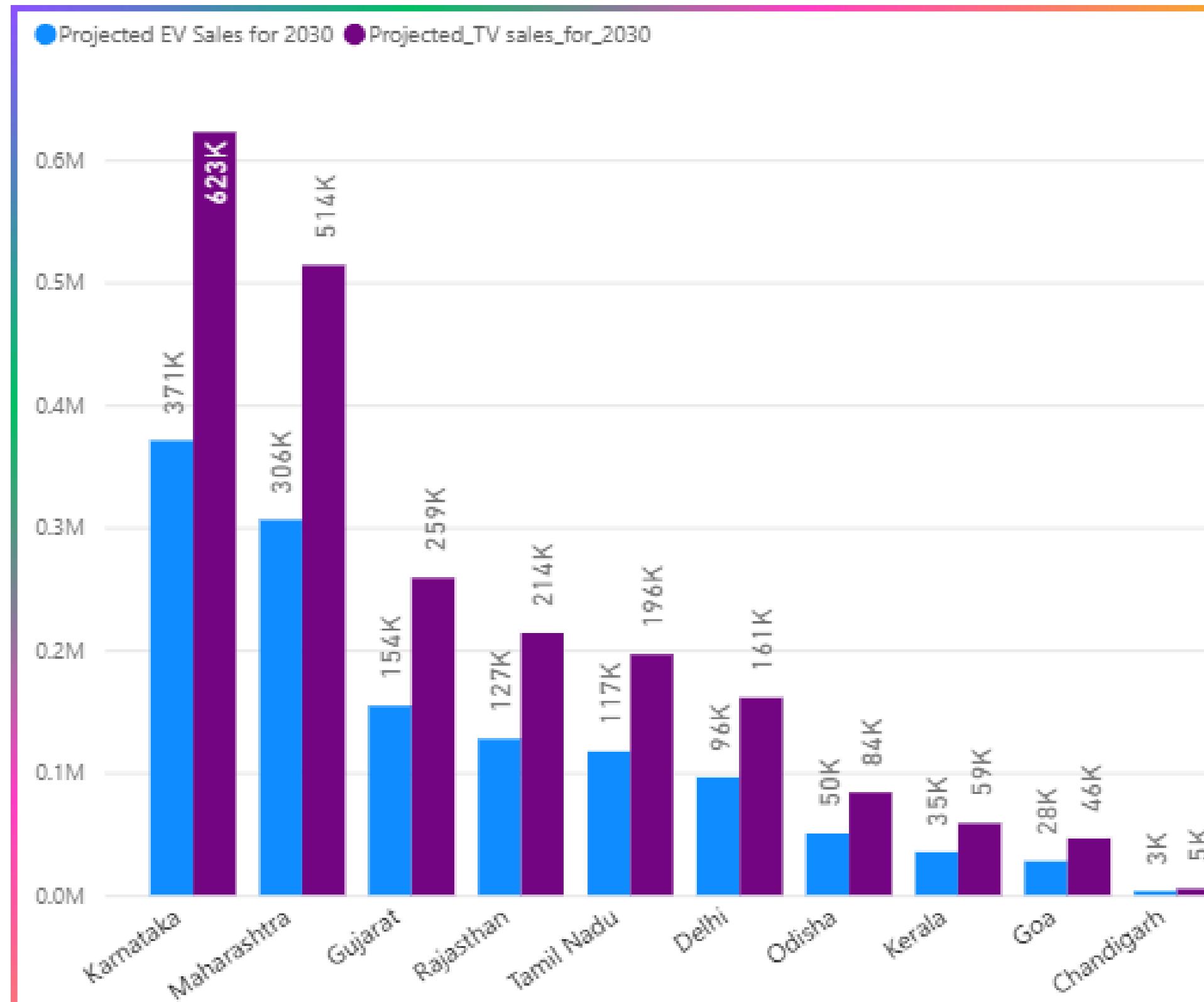
What are the peak and low season months for EV sales based on the data from 2022 to 2024?



The sales trend for the months of March, November, and February in FY 2022 to FY 2024 appears higher, while the sales trend for the months of April, July, and June in the same period appears lower.

PROBLEM: 9

What is the projected number of EV sales (including 2-wheeler and 4-wheelers) for the top 10 states by penetration rate in 2030, based on the compounded annual growth rate (CAGR) from previous years?

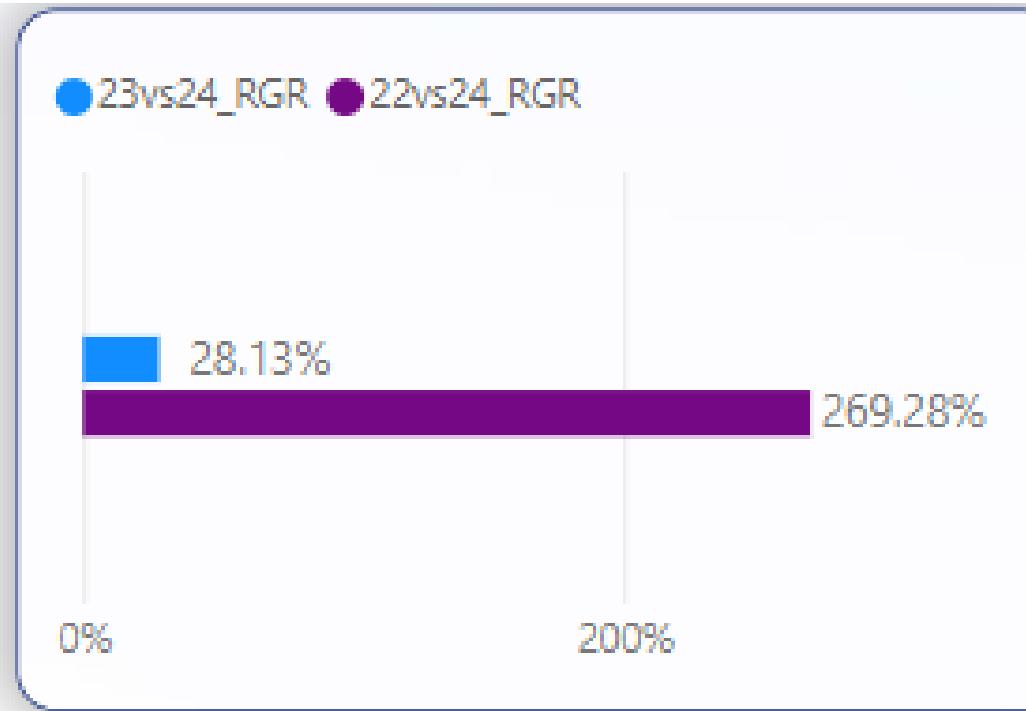


Based on these results, AtliQ Motors should focus on states like Karnataka, Maharashtra, Gujarat, Rajasthan, Tamil Nadu, Delhi, Odisha, Kerla, Goa, Chandigarh to launch their top product, as projected sales in these states is the highest. Even though EV penetration rates in these states are lower compared to Goa and Kerala, this can be viewed as an opportunity to capture market share and establish a strong presence.

PROBLEM: 10

Estimate the revenue growth rate of 4-wheeler and 2-wheelers EVs in India for 2022 vs 2024 and 2023 vs 2024, assuming an average unit price 85,000 for 2-W & 15,00,000 for 4-W.

fiscal_year	EV sold	Total_revenue
2022	0.25M	21bn
2023	0.73M	62bn
2024	0.93M	79bn
Total	1.91M	163bn



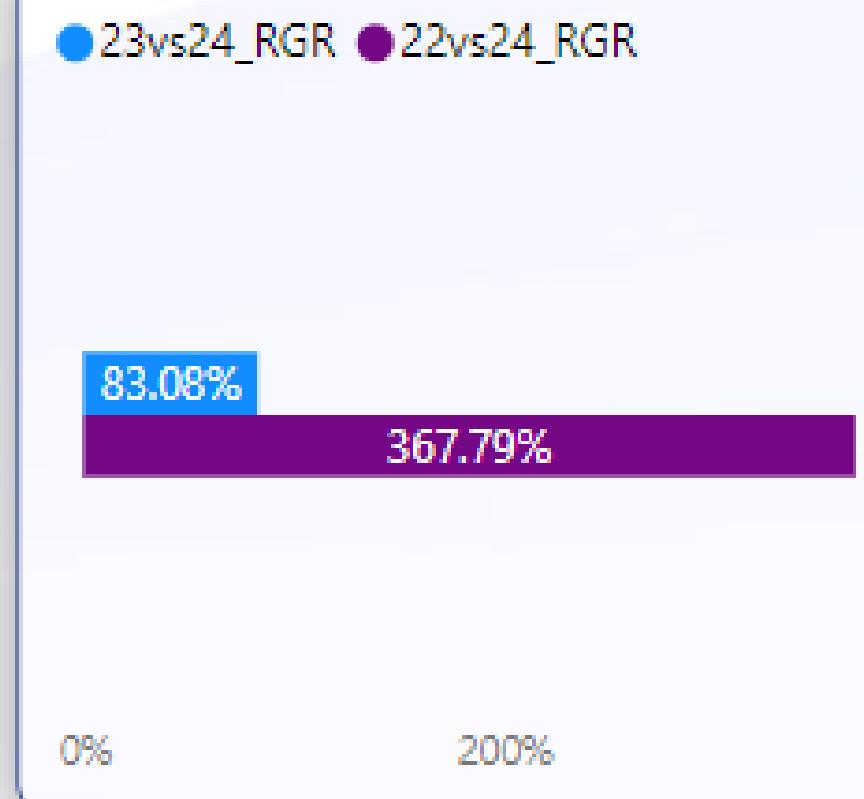
Revenue Growth Rate for 2 Wheeler

With this result Revenue grown by 195.2% from 2022 to 2023 & Increased by 28% from 2023 to 2024.

Revenue Growth Rate for 4 Wheeler

With this result Revenue grown by 153.5% from 2022 to 2023 & Increased by 83% from 2023 to 2024.

fiscal_year	EV sold	Total_revenue
2022	0.02M	28bn
2023	0.05M	71bn
2024	0.09M	130bn
Total	0.15M	229bn



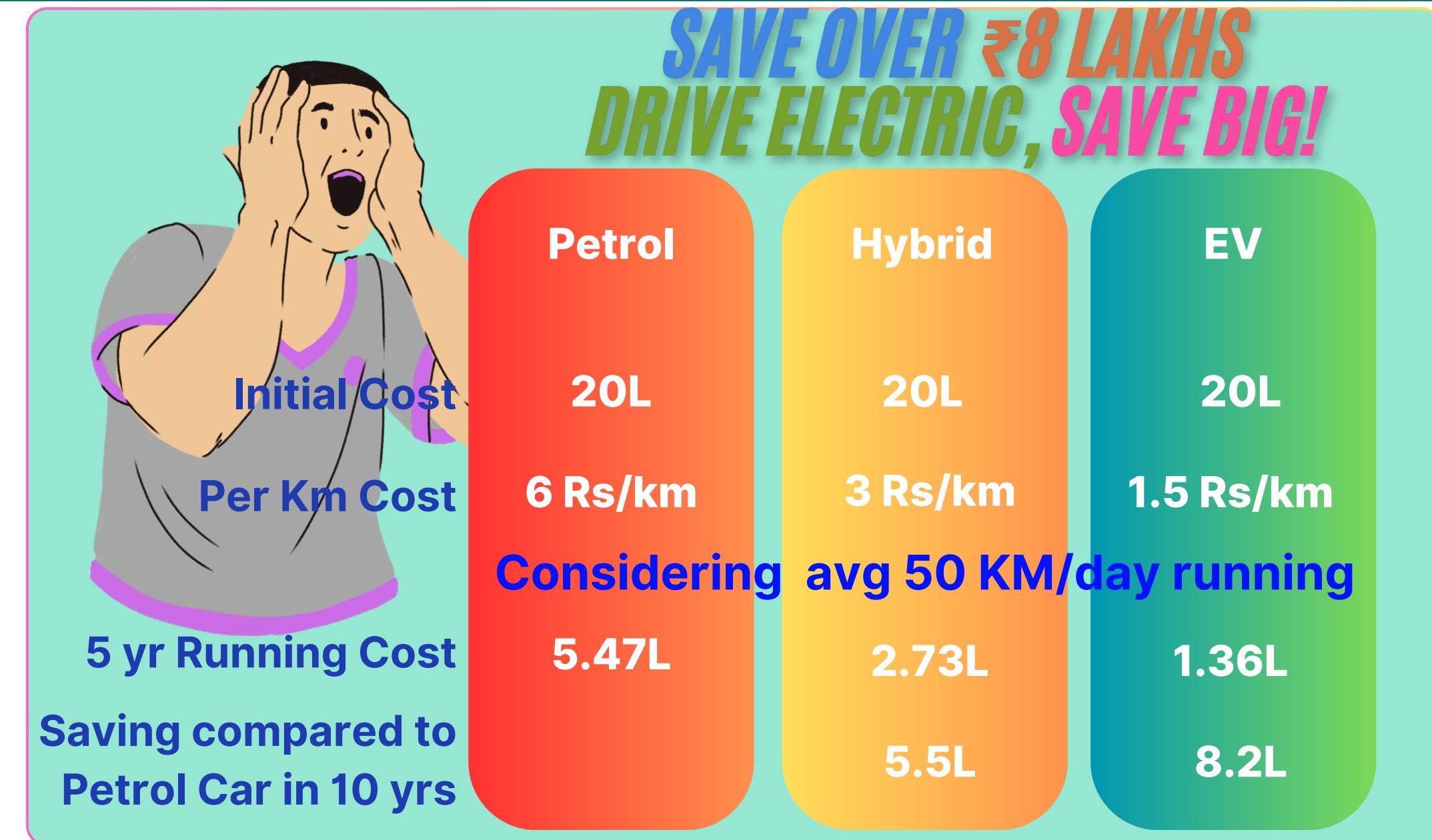
Secondary Questions

PROBLEM: 1

What are the primary reasons for customers choosing 4-wheeler EVs in 2023 and 2024 (cost savings, environmental concerns, government incentives)?

- Four-wheel EVs come with an **average range of 250 to 300 KM/charge**, addressing the widespread range concerns often associated with two-wheel EVs.

- With growing **awareness of climate change**, consumers are increasingly motivated to adopt cleaner technologies. Younger and environmentally conscious customers are especially drawn to EVs.



- Various state governments offer financial incentives, **such as Road tax exemption, registration fee waiver, incentives for scrapping old ICE vehicles**, which are helping to reduce overall cost of EVs. Government of India, the **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme** has provided subsidies to **reduce the initial cost**, encouraging more buyers.

PROBLEM: 2

How do government incentives and subsidies impact the adoption rates of 2-wheelers and 4-wheelers? Which states in India provided most subsidies?

With government incentives and subsidies, the initial cost of EVs is decreasing, making them more affordable and driving an overall increase in EV adoption.

States	Subsidy	Incentive
Maharashtra	Up to 15% on ex-factory price or Max ₹10K for two-wheelers, ₹1.5 lakh for cars.	Road tax exemption, registration fee waiver, incentives for scrapping old ICE vehicles
Delhi	Up to 15% on ex-showroom price or ₹5,000 per kWh (max ₹30,000) for two-wheelers, ₹10,000 per kWh (max ₹1.5 lakh) for cars	Waiver on road tax and registration fees, scrapping incentive for old vehicles
Gujarat	25% of ex-showroom price or Max ₹10K for two-wheelers, ₹30K for three-wheelers, ₹1.5 lakh for four-wheelers	Full exemption from registration fees and road tax, strong focus on developing charging infrastructure
Telangana	Up to 15% on ex-factory price or Max ₹10K for two-wheelers, ₹30K for three-wheelers, ₹1.5 lakh for four-wheelers	Road tax and registration fee waivers
Andhra Pradesh	₹10K subsidy per two-wheeler (up to 15%)	100% exemption from road tax, developing EV charging stations across urban and semi-urban areas

PROBLEM: 3

How does the availability of charging stations infrastructure correlate with the EV sales and penetration rates in the top 5 states?

<u>Performance by State</u>					
States	EV_Sold	TV Sold	P.Rate	GDP	Chrg Pt.
Maharashtra	396.05K	6.10M	13.0%	14.8%	3728
Karnataka	313.00K	3.99M	15.8%	8.0%	5765
Tamil Nadu	200.06K	4.65M	8.6%	8.6%	1413
Gujarat	181.39K	4.13M	8.3%	7.9%	992
Rajasthan	150.37K	3.31M	8.1%	4.9%	1129

The Chart reveals that Karnataka leads with the highest number of EV charging stations—5,765—and has achieved an EV penetration rate of 15.8%, which surpasses other states. In comparison, Maharashtra has 3,728 charging stations and a penetration rate of 13%. This explicitly demonstrates that **a well-developed charging infrastructure significantly supports higher EV adoption.**

PROBLEM: 4

Who should be the brand ambassador if AtliQ Motors launches their EV/Hybrid vehicles in India and why?

Brand Value & Popularity

India's most trusted and successful cricketer, known for his calm demeanor and leadership.

50+ Million followers on Instagram

Relevant Expertise

Strong association with sports brands, fitness, and lifestyle products.

Endorses brands like Pepsi, Reebok, etc.

Endorsement Impact

High endorsement value, known for adding credibility and trust to brands.

₹90-100 crore annually from endorsements

Engagement & Appeal

Large, diverse fanbase across different demographics.

Estimated reach: 500+ Million



MS Dhoni
Former Captain of Indian Cricket team

Brand Value & Popularity

One of Bollywood's most popular and trusted celebrities with wide appeal

80+ Million followers on Instagram

Relevant Expertise

Strong connection with sustainability and social causes, perfect for a green brand like EVs.

Associated with global brands like Gucci, Giva.

Endorsement Impact

Endorses high-end and lifestyle brands, demonstrating influence in fashion and wellness.

Est brand value: ₹350-500 cr

Engagement & Appeal

Popular among all age groups, especially urban women.

200+ M reach across media platforms



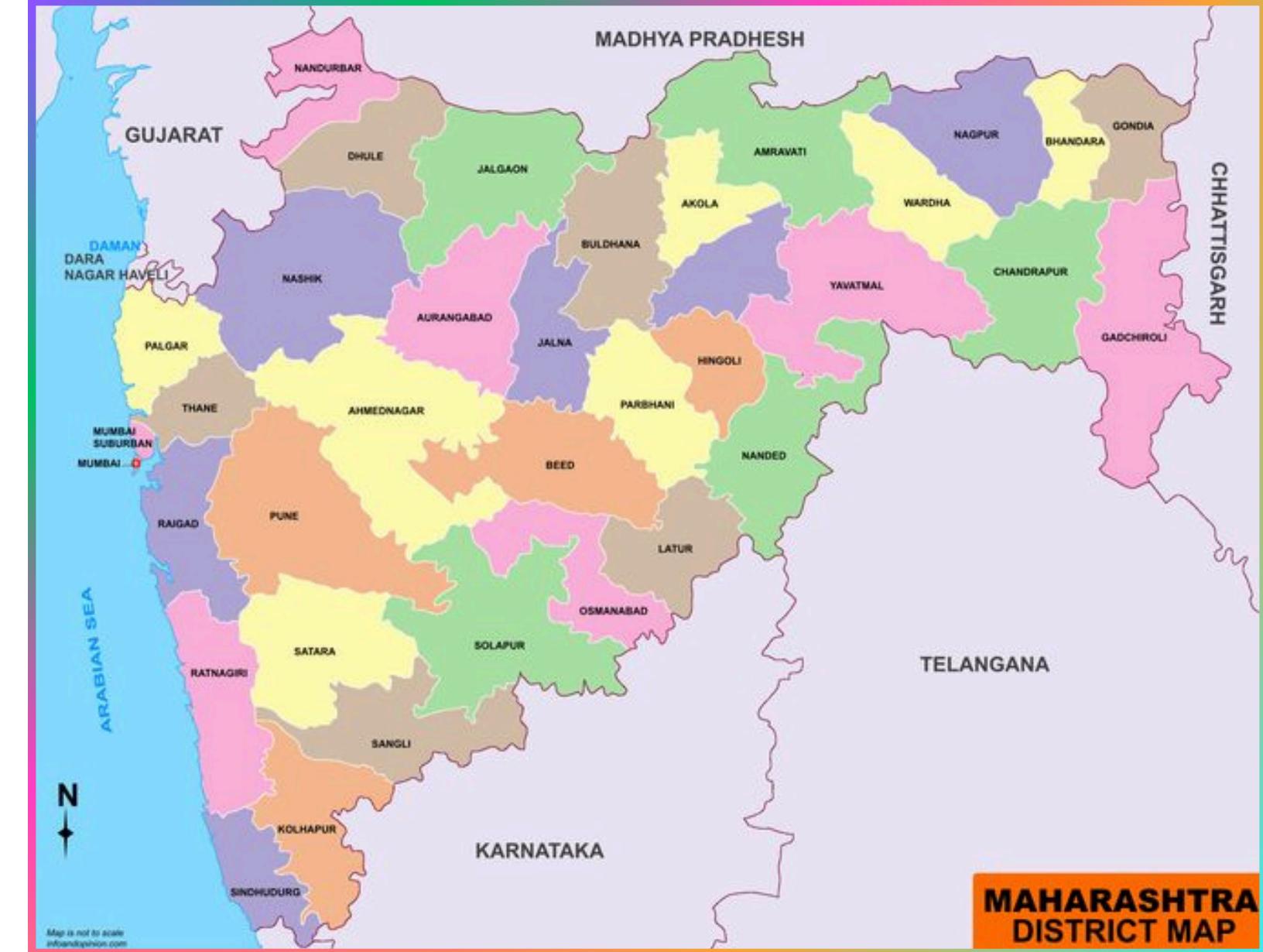
Aliya Bhat
Bollywood Actress

PROBLEM: 5

Which state of India is ideal to start the manufacturing unit?

Maharashtra

Capital Subsidy	Maharashtra provides a subsidy of up to ₹100 crore per project for EV manufacturing units, depending on investment size and employment generated.
SGST Reimbursement	100% reimbursement of the SGST for a period of 10 years or until the capital investment amount is reached.
Electricity Duty Exemption	100% exemption on electricity duty for a period of 10 years for EV manufacturers.
Stamp Duty Exemption	75% exemption on stamp duty in certain areas and 100% in others (e.g., Vidarbha and Marathwada).
Employment Generation Subsidy	Companies get incentives for every local hire, with subsidies ranging from ₹20,000 to ₹30,000 per employee per year.



Maharashtra shares its boundaries with Karnataka, Gujarat, Madhya Pradesh, Chhattisgarh, Goa, and Telangana, making it a strategic central hub. This geographic advantage can significantly reduce transportation costs. Additionally, the projected EV sales in these neighboring states are expected to be high, indicating substantial future growth.

PROBLEM: 6

Your top 3 recommendations for AtliQ Motors.

Net National Income (NNI) per individual, is approximately ₹1,84,000 Indian rupees (INR) **annually** or around
15K monthly

- Considering 15% of down payment
- Affordable EMI Value = 25% of income
- Loan Tenure = 3 Years
- Interested Rate = 10%



A person can afford a bike of ₹1,58,800

So AtliQ Motors's basic 2-wheel model should be less than ₹1,50,000.

Considering avg salary ₹30K monthly

- Considering 30% of down payment
- Affordable EMI Value = 35% of income
- Loan Tenure = 5 Years
- Interested Rate = 10%



A person can afford a Car of ₹9,00,000

If AtliQ Motors launches their basic EV car priced up to 9 lakhs, similar to the MG Comet and TATA Tiago, it could capture a significant share of the market.

----- ₹23,820
----- ₹3750
----- 36 months

----- ₹2,70,000
----- ₹10500
----- 60 months

PROBLEM: 6

Your top 3 recommendations for AtliQ Motors.

- While launching their bestselling models in India, AtliQ should consider the road conditions in Tier 2 and Tier 3 cities and develop robust models accordingly.
- At early stage of the market Some EV companies launched their vehicles with lead-acid batteries to make them more affordable. However, due to the drawbacks of lead-acid batteries, several major companies lost their reputation, customers and trust on them in the market.
- AtliQ should offer Warrenty on Battery and chargers it will instigate trust in customer



THANK YOU

FOR YOUR NICE ATTENTION

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