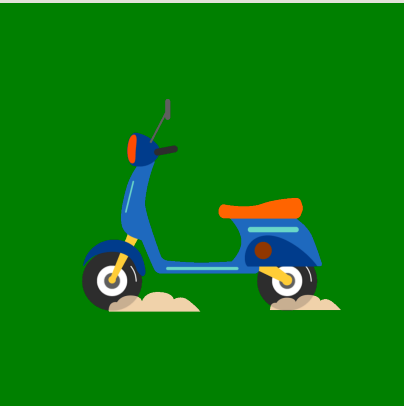
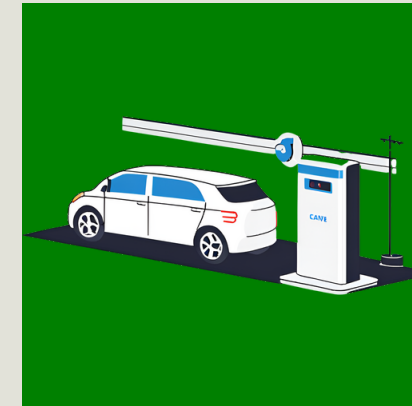
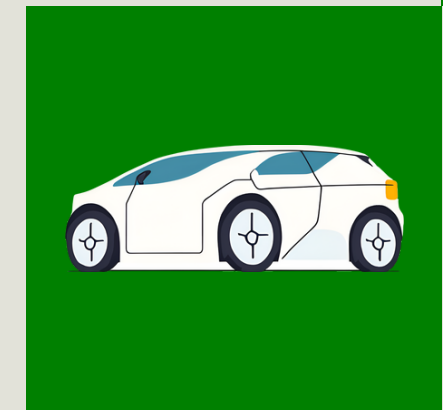
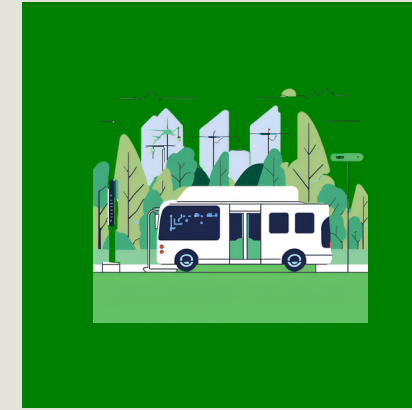




# Electric Vehicle Analysis



Created By  
**Ritik Sharma**

# Project Overview

## Objectives

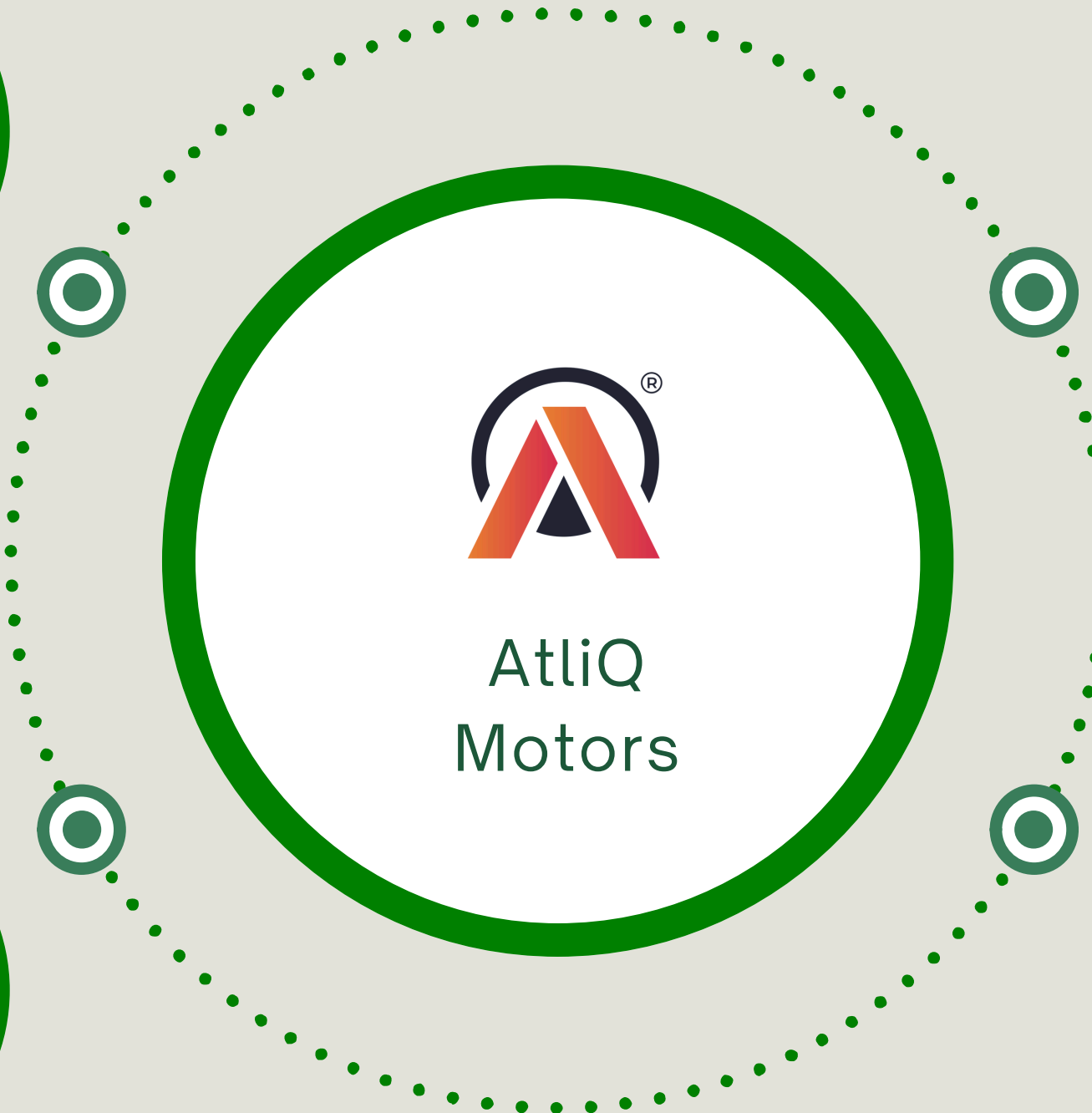
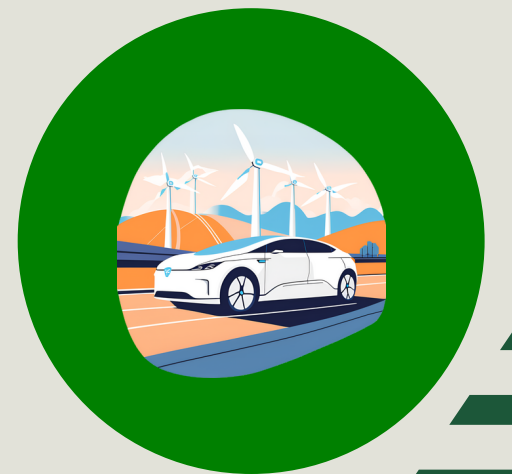
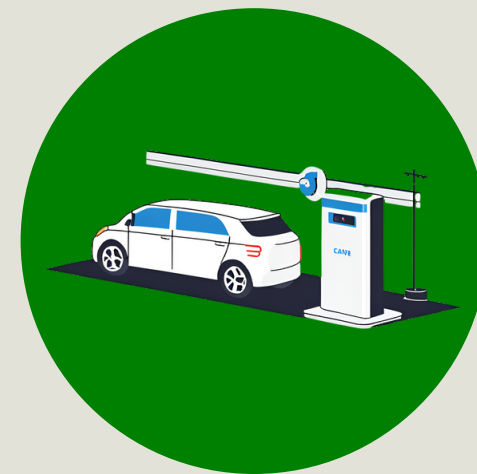
AtliQ Motors is an automotive giant from the USA specializing in electric vehicles (EV).

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%.

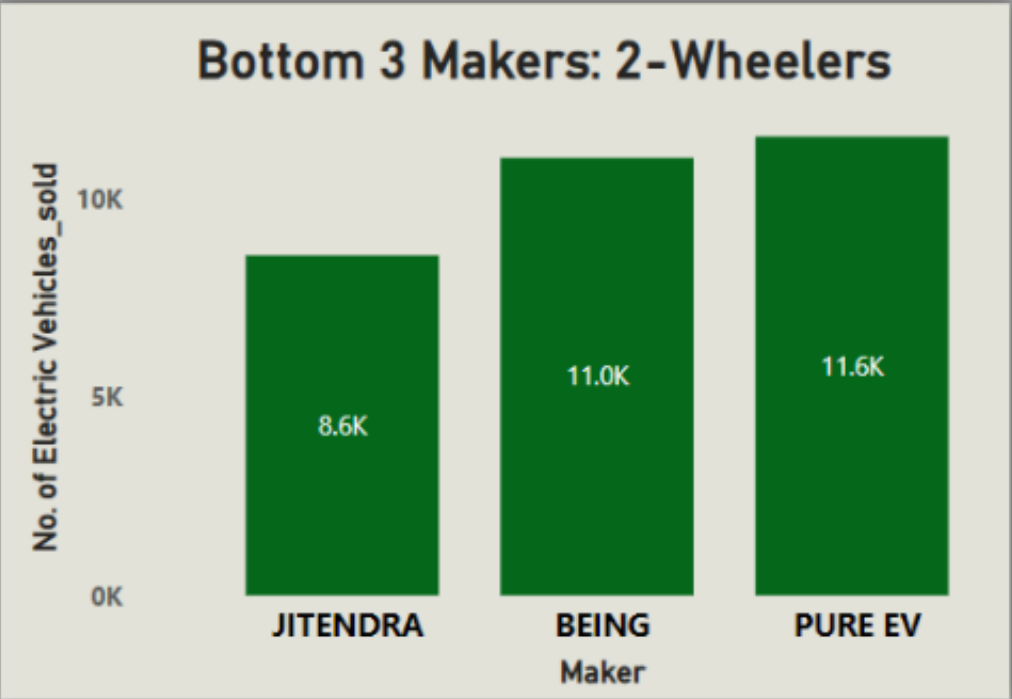
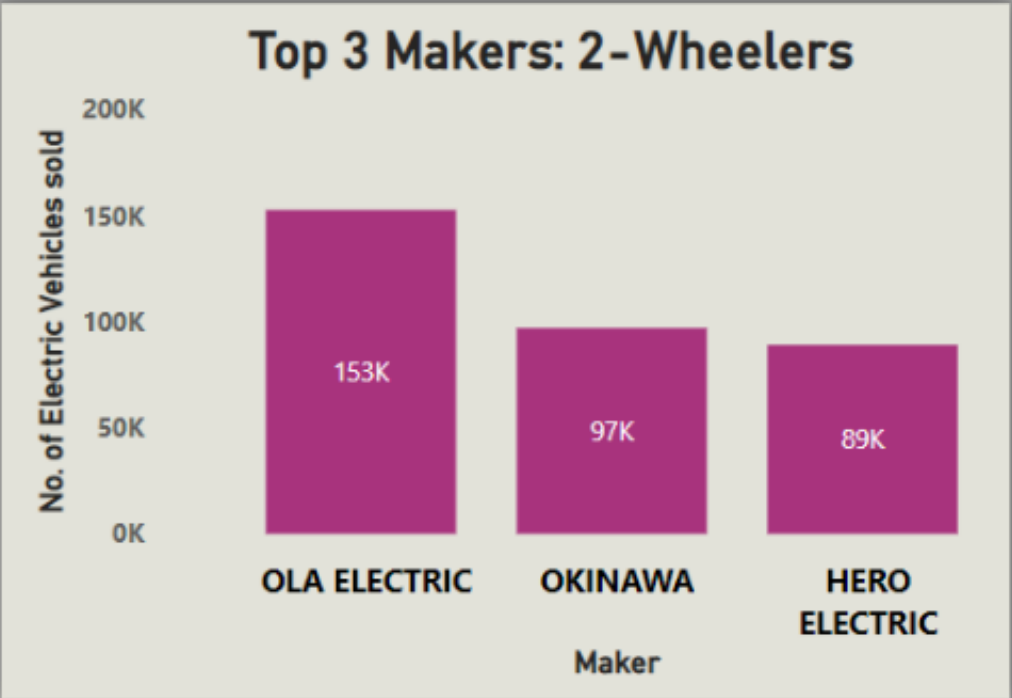
## Task

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.

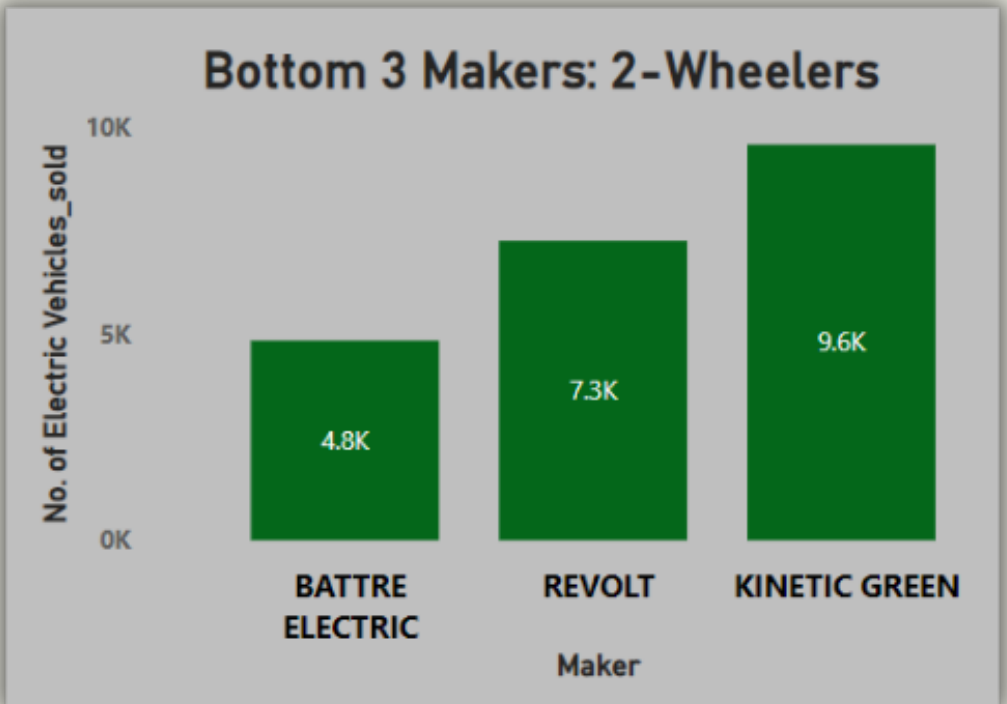
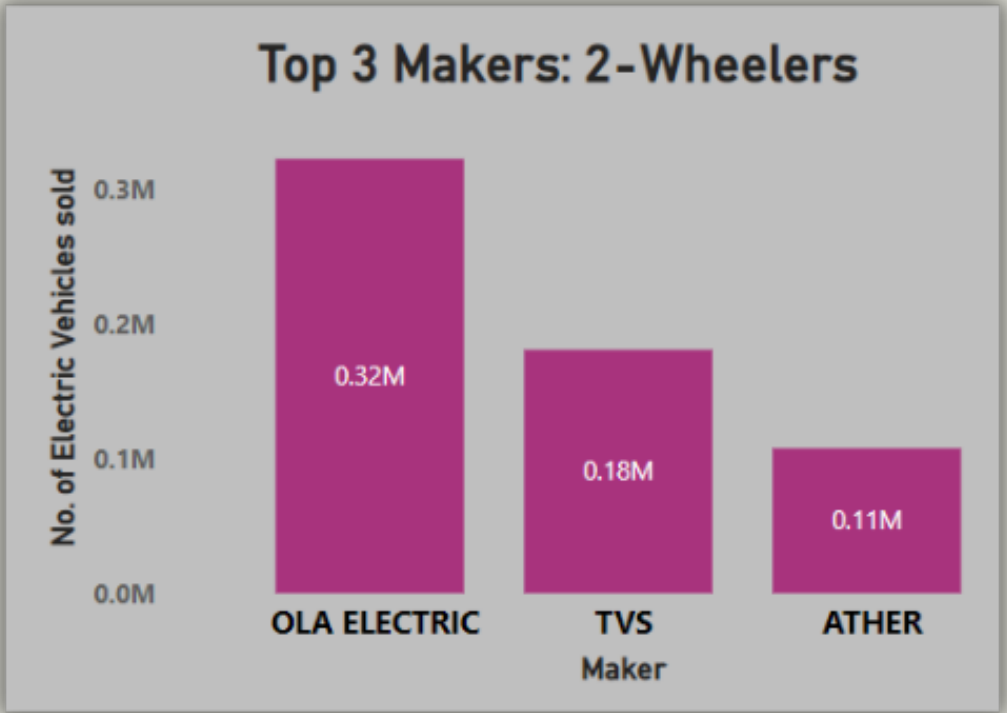


Q1)List the top 3 and bottom 3 makers for the fiscal years 2023 and 2024 in terms of the number of 2-wheelers sold.

2023



2024



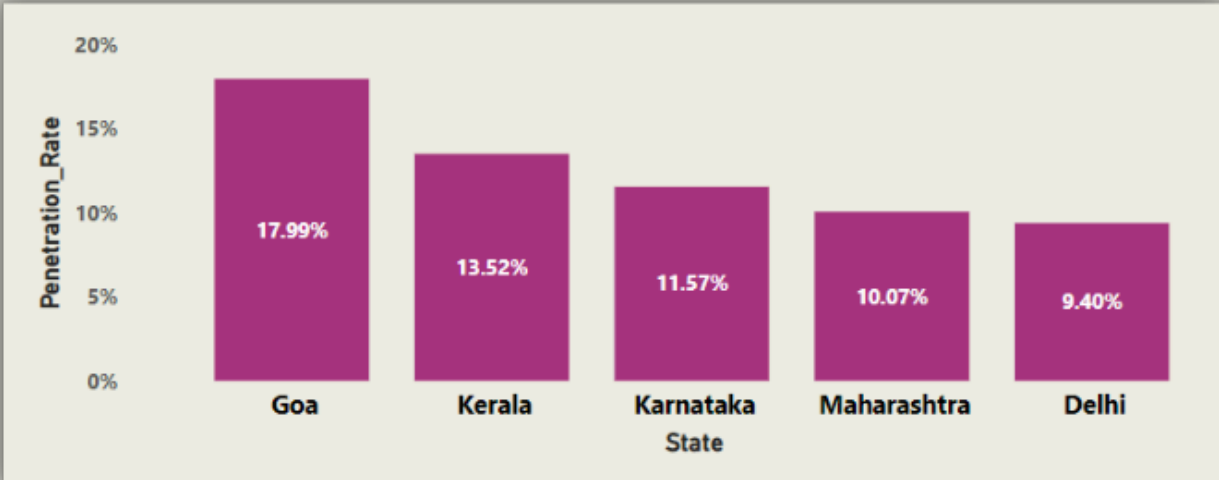
Insights:

- **Ola's** sales witnessed an impressive growth of over **109%**.
- All the three bottom makers in 2024 are changes as compared to 2023.
- **TVS & Ather** shows impressive improvement.

Q2) Identify the top 5 states with the highest penetration rate in 2-wheeler and 4-wheeler EV sales in FY 2024.

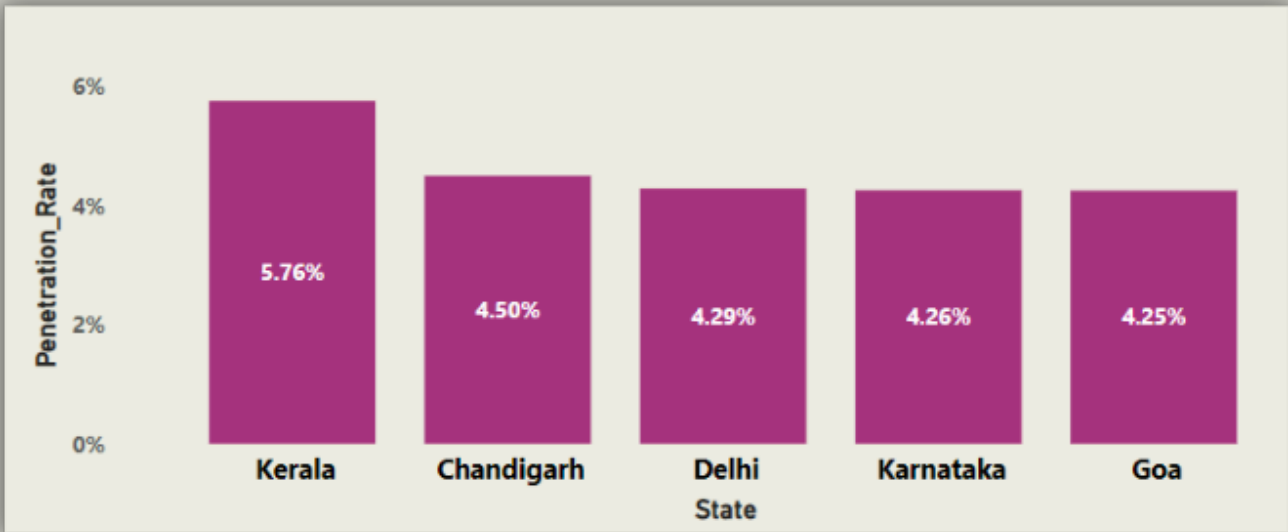
## 2-Wheelers

State	No. of electric_vehicles_sold	No. of total_vehicles_sold	Penetration_Rate
Goa	9768	54290	17.99%
Kerala	64769	478887	13.52%
Karnataka	148111	1279767	11.57%
Maharashtra	183052	1817343	10.07%
Delhi	38094	405218	9.40%



## 4-Wheelers

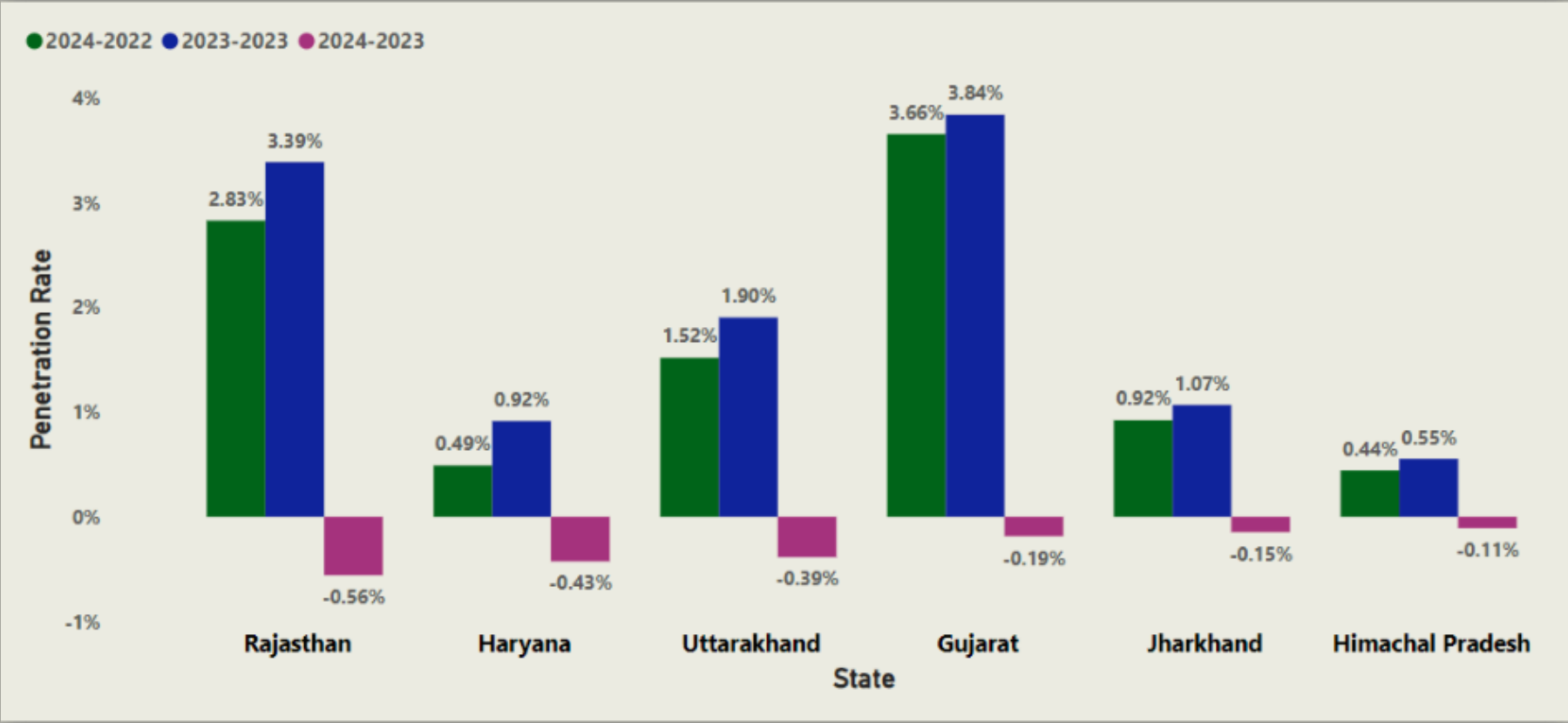
State	No. of electric_vehicles_sold	No. of total_vehicles_sold	Penetration_Rate
Kerala	9169	159227	5.76%
Chandigarh	1020	22651	4.50%
Delhi	8630	201130	4.29%
Karnataka	12878	302221	4.26%
Goa	1031	24234	4.25%



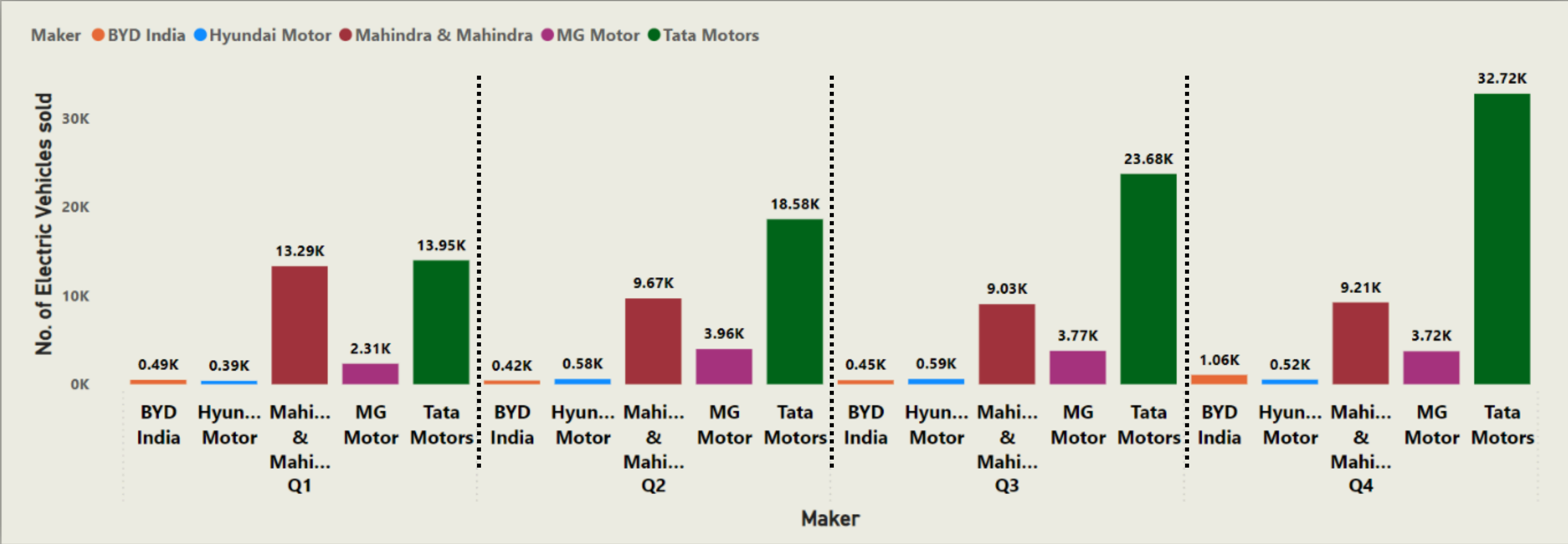
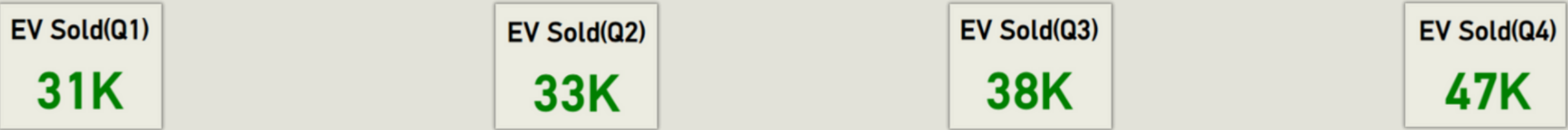
### Insights:

- **Kerala** leads in 4-wheeler EV penetration at **5.76%** and ranks 2nd in 2-wheelers with **13.52%**, highlighting its strong focus on electric mobility.
- 4 out of 5 states are the same in both categories.
- **Kerala** will be a state to lookout for in the future with **Delhi**.

Q3) List the states with negative penetration (decline) in EV sales from 2022 to 2024?



Q4)What are the quarterly trends based on sales volume for the top 5 EV makers (4-wheelers) from 2022 to 2024?

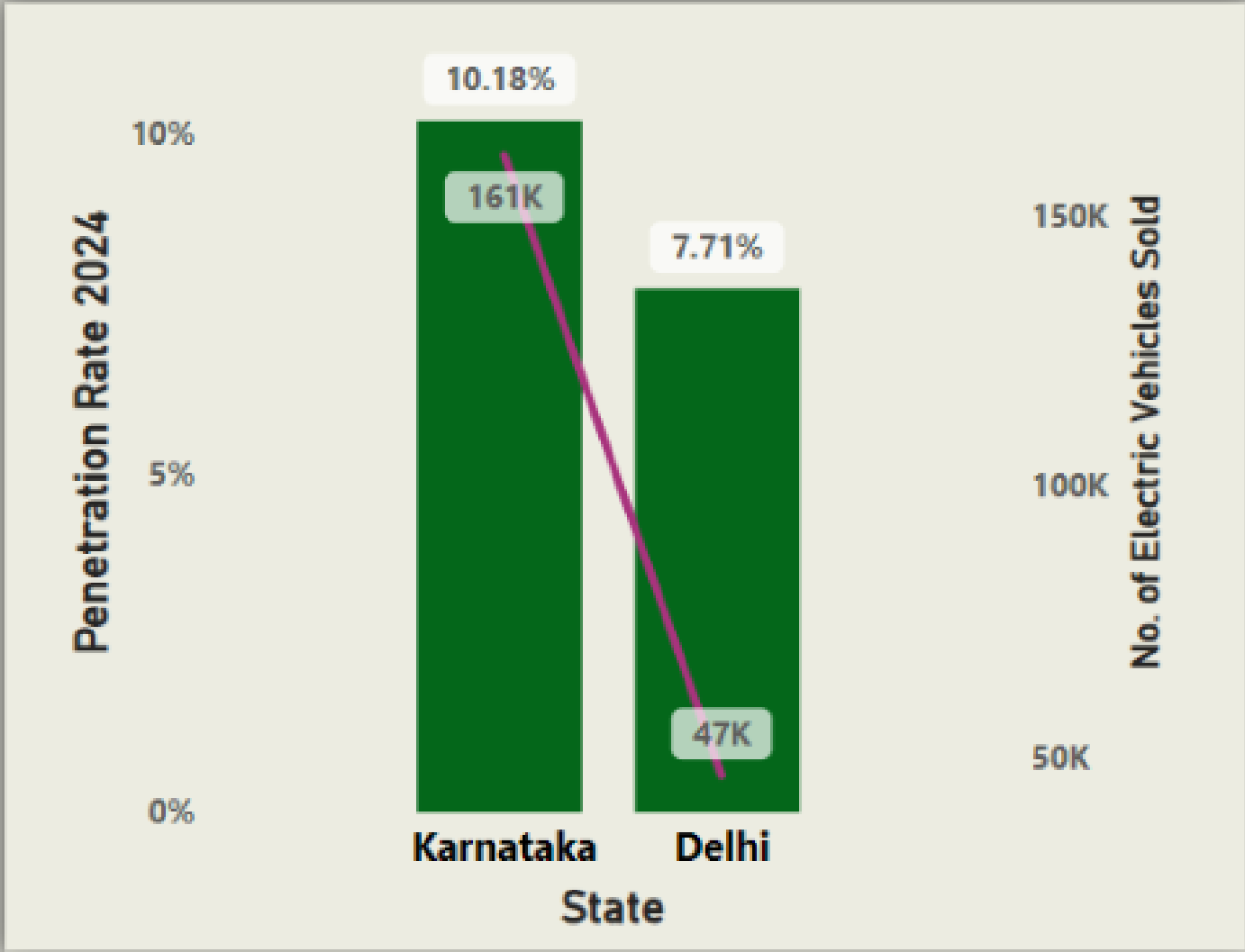


Q5) How do the EV sales and penetration rates in Delhi compare to Karnataka for 2024?

State	Penetration Rate 2024	Sum of electric_vehicles_sold
Delhi	7.71%	46724
Karnataka	10.18%	160989

Insights:

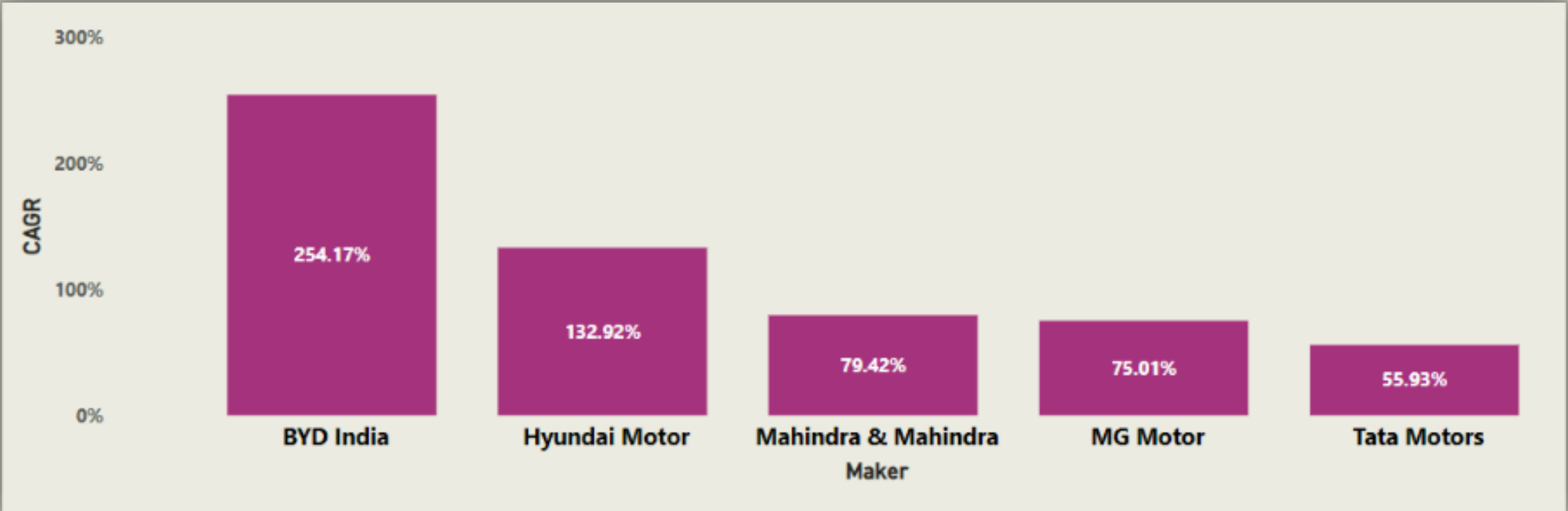
- **Karnataka** has a better penetration rate as compared to **Delhi** in fiscal year 2024.





Q6)List down the compounded annual growth rate (CAGR) in 4-wheeler units for the top 5 makers from 2022 to 2024.

maker	4_Wheeler sale 2024	4_Wheeler sale 2022	4-Wheeler CAGR
Tata Motors	48181	12708	55.93%
Mahindra & Mahindra	23346	4042	79.42%
MG Motor	8829	1647	75.01%
Hyundai Motor	1390	110	132.92%
BYD India	1466	33	254.17%

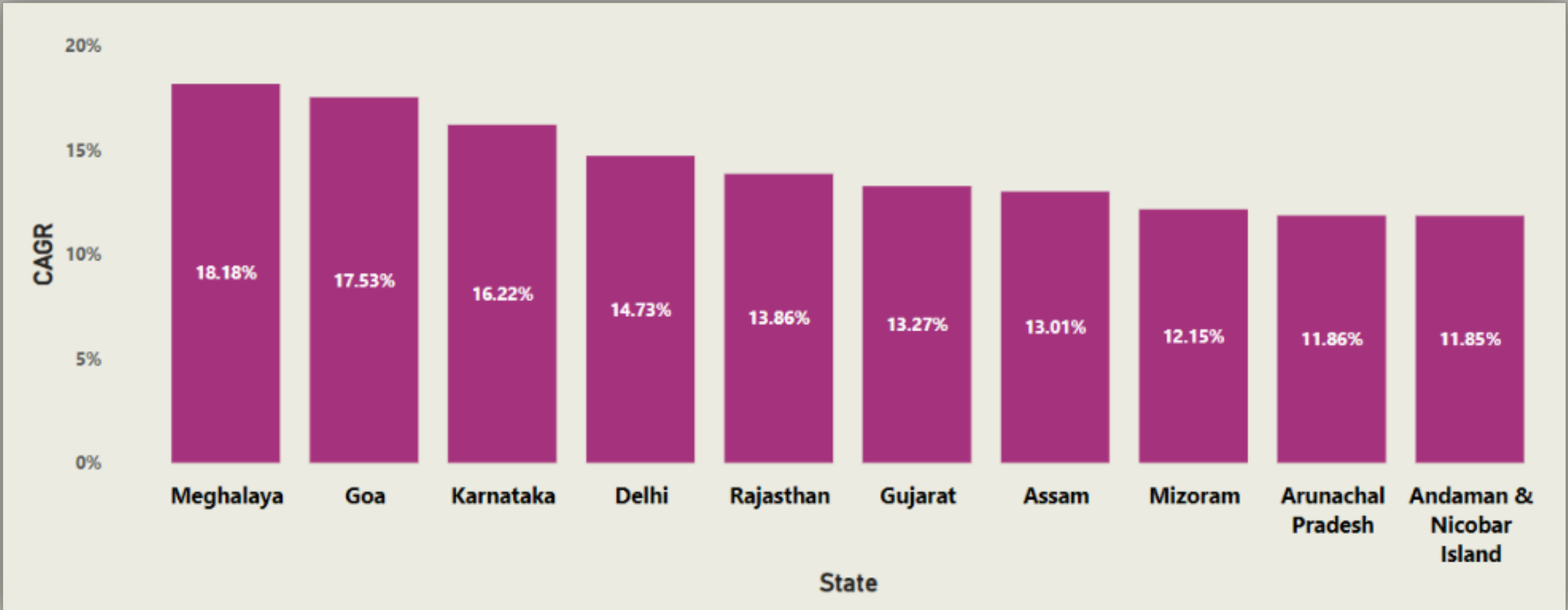


Insights:

- **BYD India** tops the list with 254.17% CAGR.



Q7) List down the top 10 states that had the highest compounded annual growth rate (CAGR) from 2022 to 2024 in total vehicles sold.



Insights:

- **Meghalaya** has the CAGR of 18.18% which is highest.

Q8) What are the peak and low season months for EV sales based on the data from 2022 to 2024?



Insights:

- The First 3 months, which is Q4, have the highest number of EV sales.

Q9) What is the projected number of EV sales (including 2-wheelers and 4 wheelers) for the top 10 states by penetration rate in 2030, based on the compounded annual growth rate (CAGR) from previous years?

## Top 10 States

State	EV Sales 2024	Predicted EV Sales(2030)
Karnataka	160989	396618
Maharashtra	197169	373380
Gujarat	84359	178130
Tamil Nadu	94314	153685
Rajasthan	66444	144785
Delhi	46724	106543
Odisha	39118	65004
Kerala	73938	63314
Goa	10799	28458
Chandigarh	2877	4294

EV Sales 2024

776.73K

Predicted EV  
Sales(2030)

1.45M

## All States

EV Sales 2024

1.02M

Predicted EV  
Sales (2030)

1.7M

Q10) 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.

2-Wheelers:85,000

4-Wheelers:15,00,000

## Overall

Growth  
Rate(2024-2023)  
**58.36%**

Growth  
Rate(2024-2022)  
**326.38%**

## 2-Wheelers

Growth  
Rate\_2-Wheelers(2024-2023)  
**28.13%**

Growth  
Rate\_2-Wheelers(2024-2022)  
**269.28%**

## 4-Wheelers

Growth  
Rate\_4-Wheelers(2024-2023)  
**83.08%**

Growth  
Rate\_4-Wheelers(2024-2022)  
**367.79%**