

Electrifying India ⚡

MARKET INSIGHTS AND STRATEGIC
RECOMMENDATIONS FOR ATLIQ MOTORS



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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.

Problem Statement

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.

Process



Data
Understanding



Data Cleaning



Data Modeling

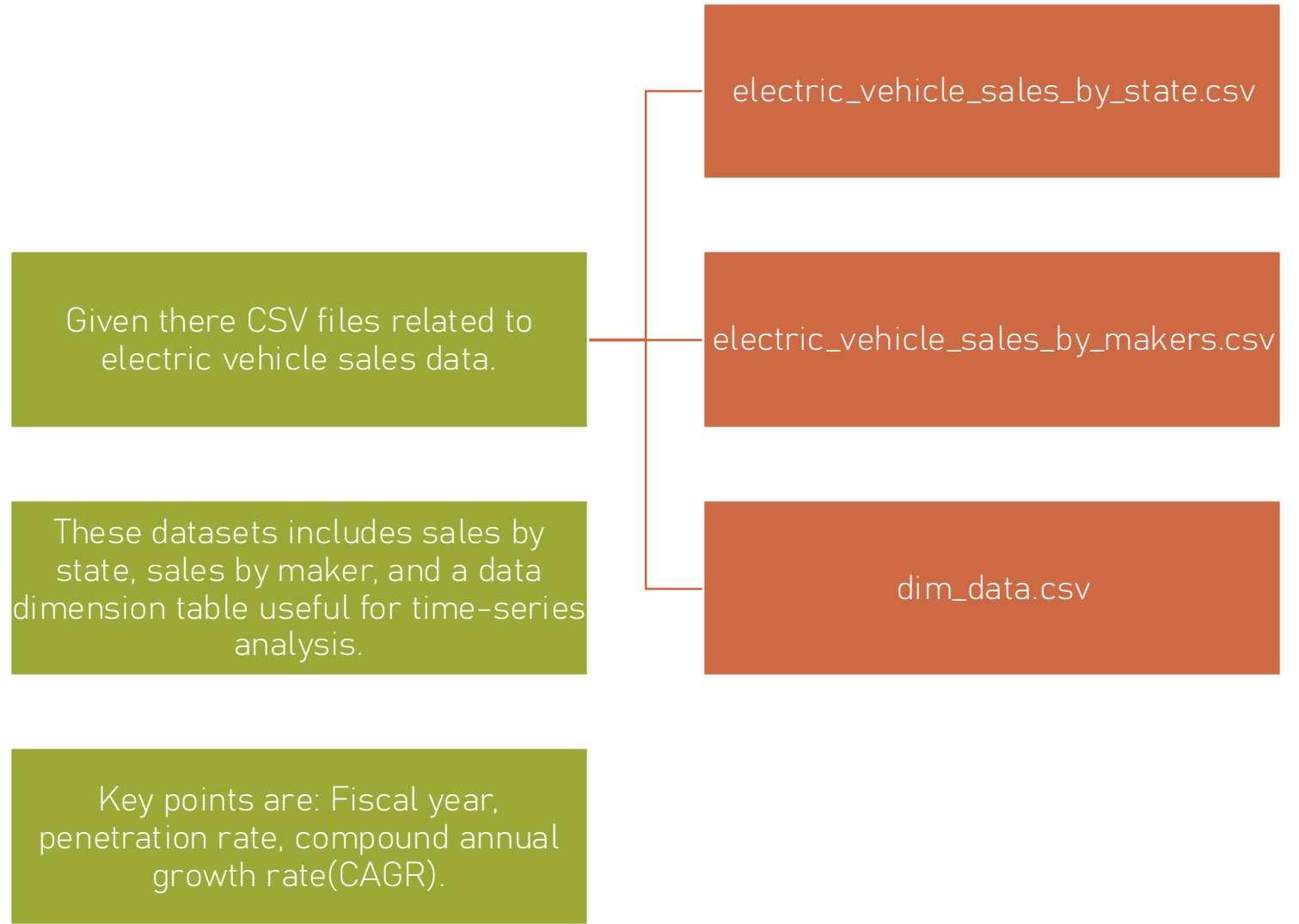


Data Analysis



Uncover
Insights

Data Understanding



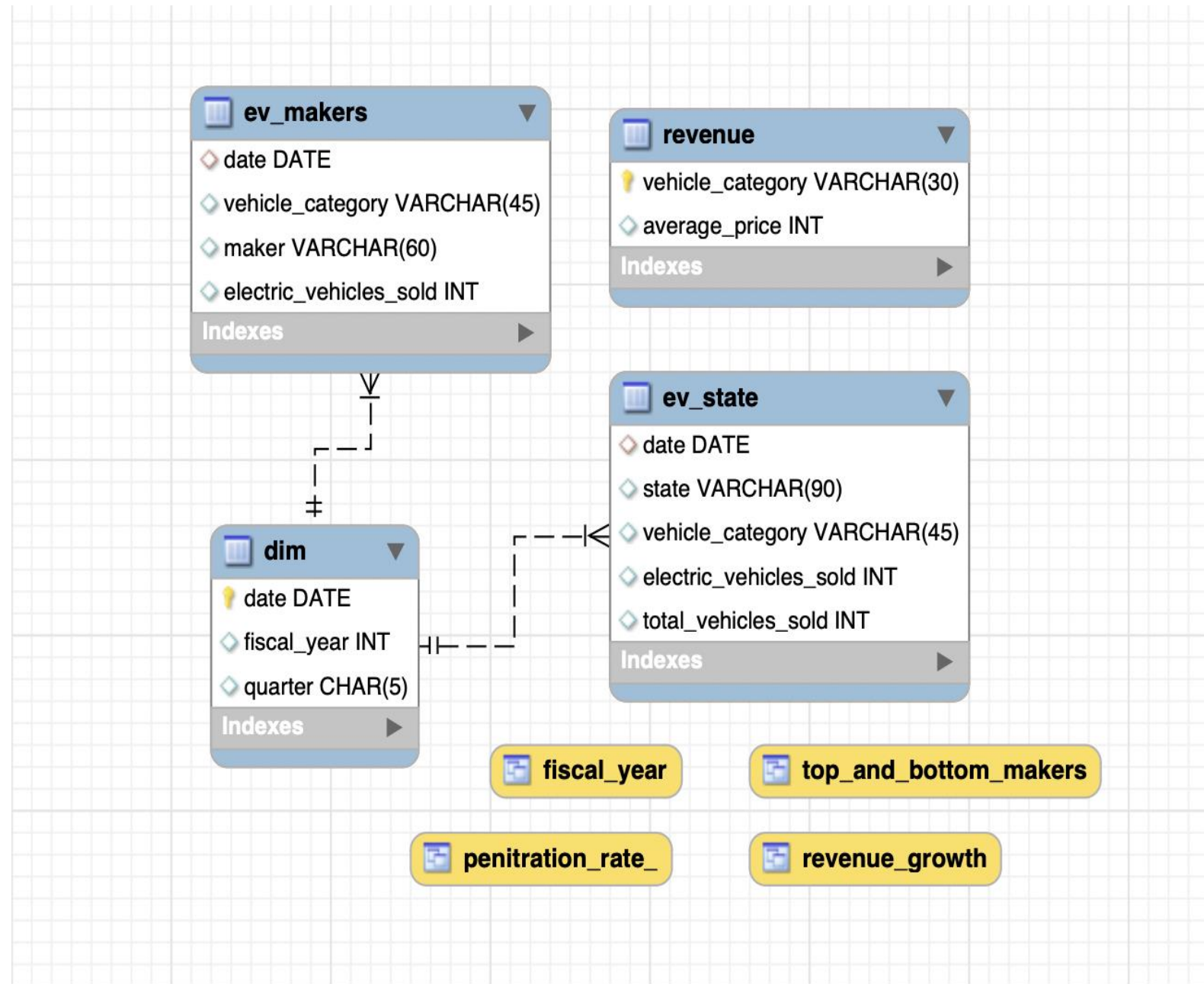


Data Cleaning

Used Python Pandas for Cleaning

- The dataset have no null values
- State Dataset shape (2445, 4) and found one change in states 'Andaman & Nicobar' have 2 entries convert to 'Andaman & Nicobar Island'
- Makers Dataset shape (816, 4) and converted the date format
- Dim Dataset shape (36, 3) and converted the data format
- All these Datasets are saved in CSV format with utf-8 encoding for further analysis in SQL.

Data Modeling





Data Analysis

- List the top 3 and bottom 3 makers for the fiscal years 2023 and 2024 in terms of the number of 2-wheelers sold.
- Identify the top 5 states with the highest penetration rate in 2-wheeler and 4-wheeler EV sales in FY 2024.
- List the states with negative penetration (decline) in EV sales from 2022 to 2024?
- What are the quarterly trends based on sales volume for the top 5 EV makers (4-wheelers) from 2022 to 2024?
- How do the EV sales and penetration rates in Delhi compare to Karnataka for 2024?
- List down the compounded annual growth rate (CAGR) in 4-wheeler units for the top 5 makers from 2022 to 2024.

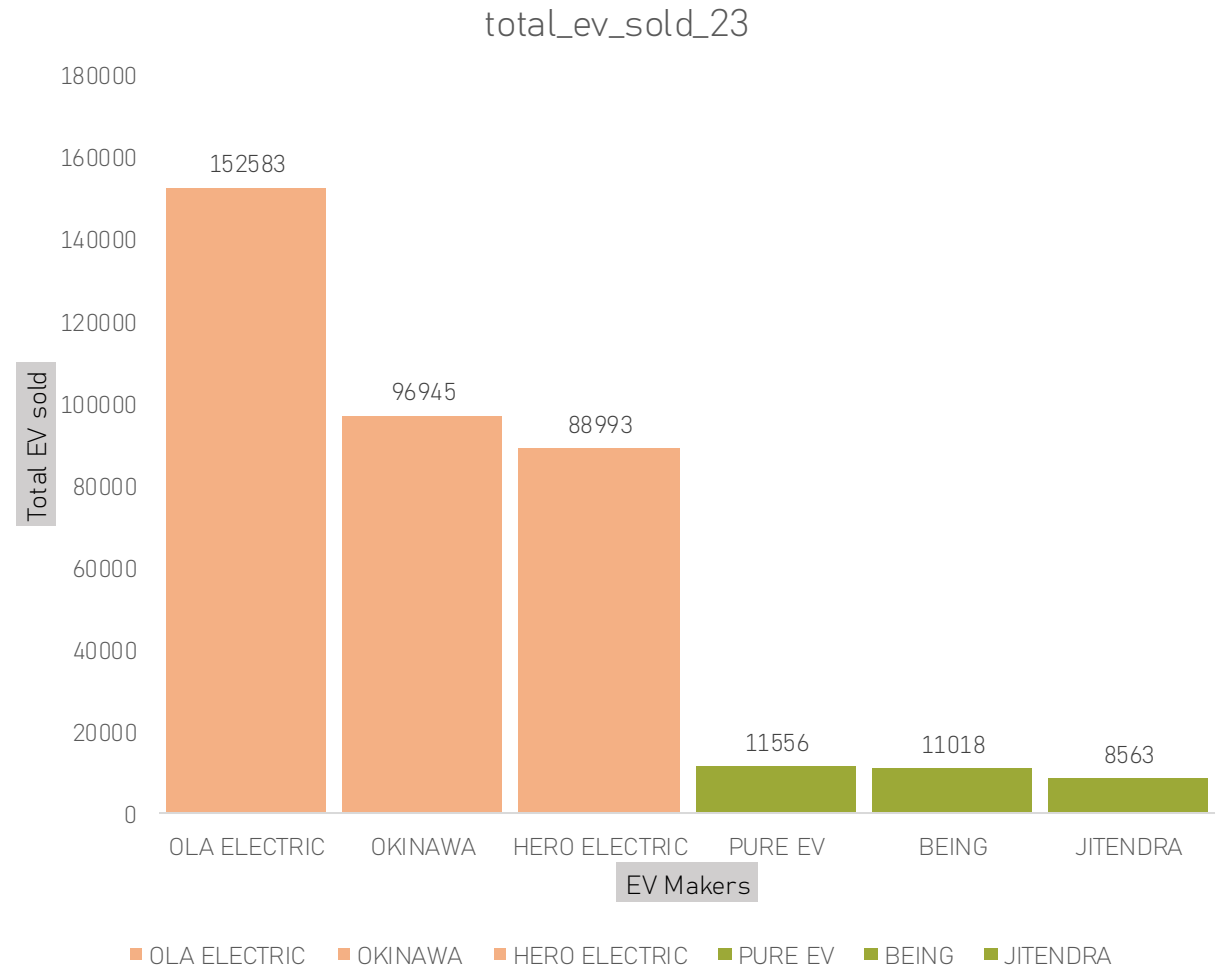


Data Analysis

- List down the top 10 states that had the highest compounded annual growth rate (CAGR) from 2022 to 2024 in total vehicles sold.
- What are the peak and low season months for EV sales based on the data from 2022 to 2024?
- 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?

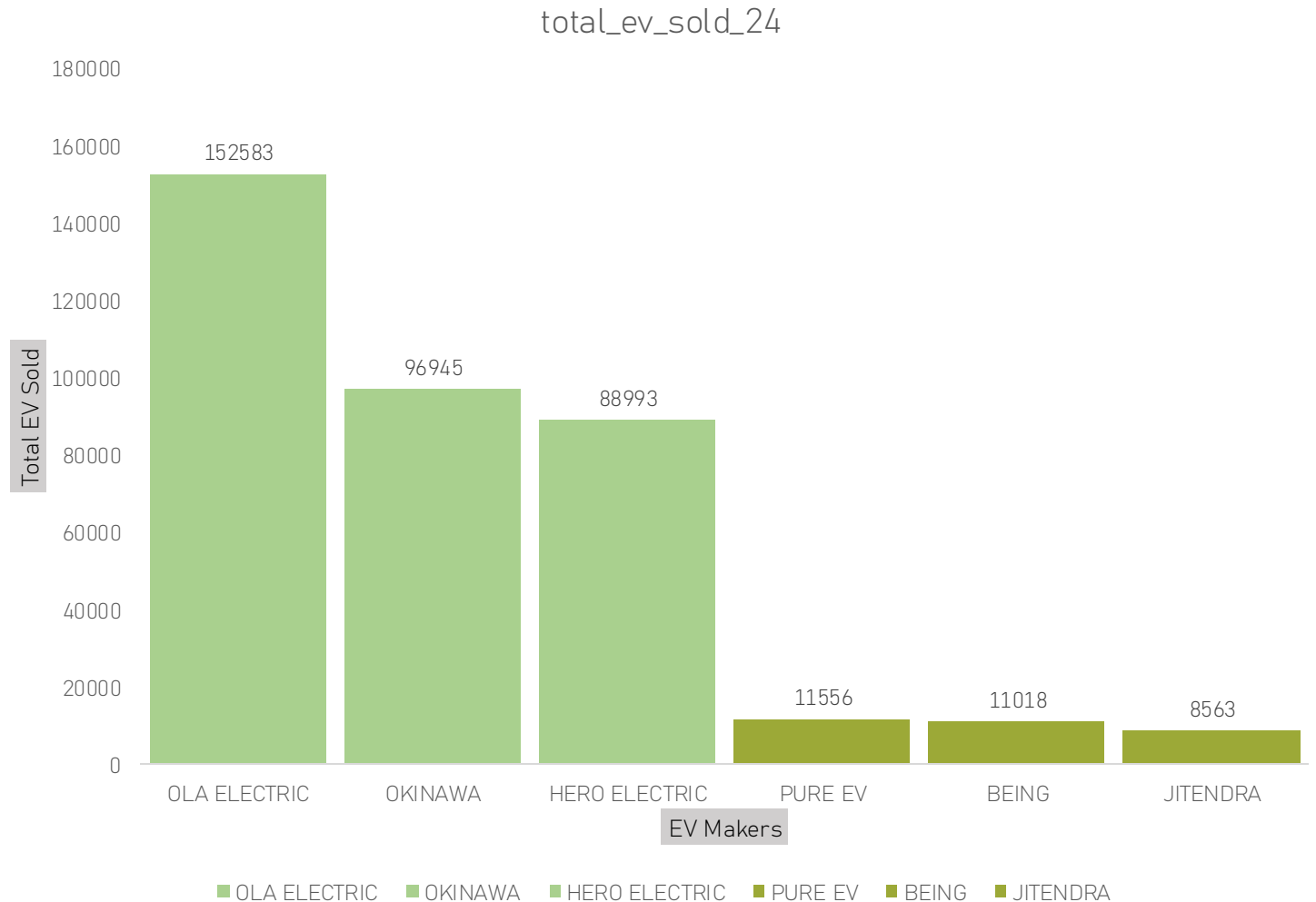
Top and Bottom 3 makers in 2023

maker	total_ev_sold_23
OLA ELECTRIC	152583
OKINAWA	96945
HERO ELECTRIC	88993
PURE EV	11556
BEING	11018
JITENDRA	8563



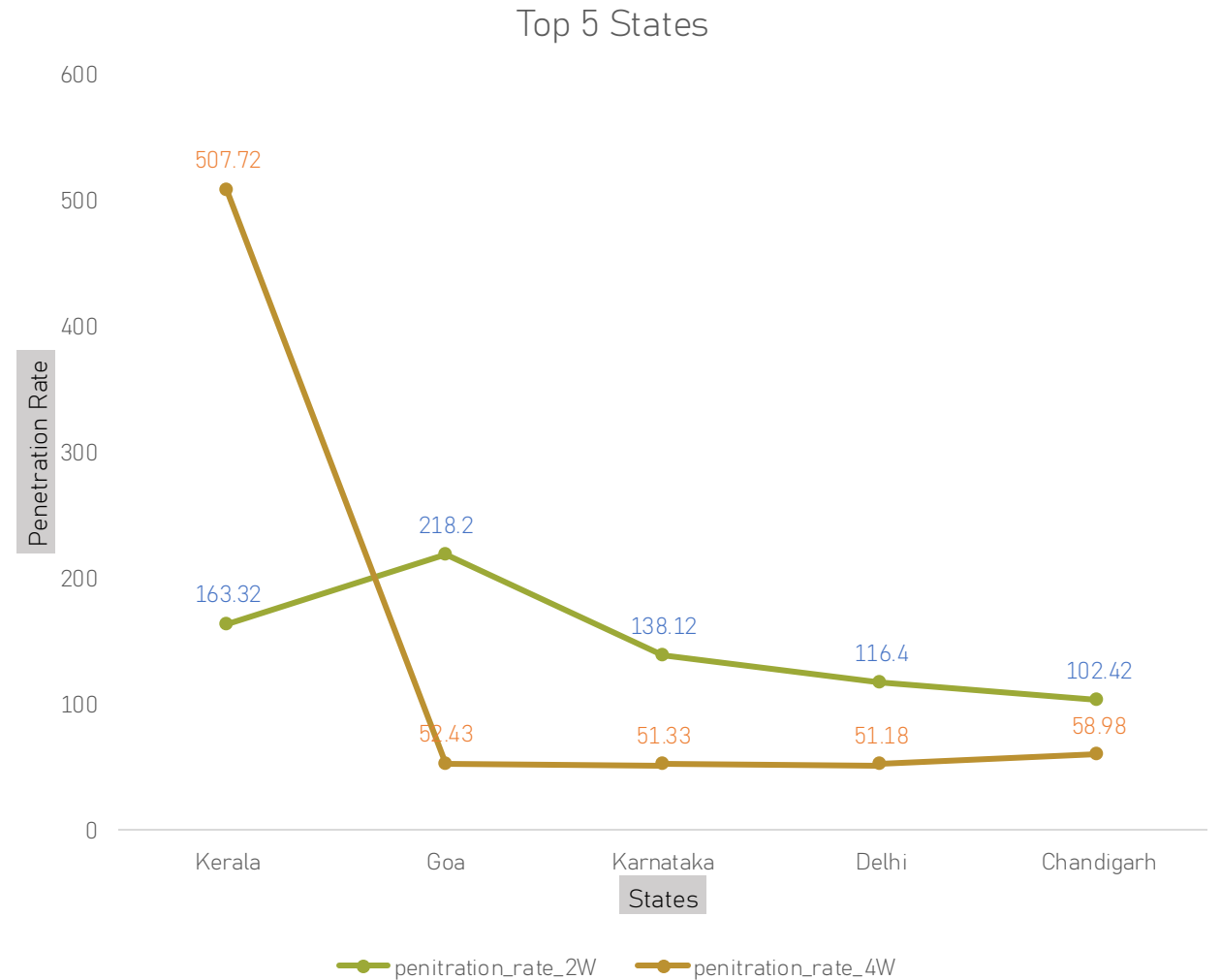
Top and Bottom 3 makers in 2024

maker	total_ev_sold_24
OLA ELECTRIC	322489
TVS	180743
ATHER	107552
KINETIC GREEN	9585
REVOLT	7254
BATTRE ELECTRIC	4841



Top 5 Penetration States

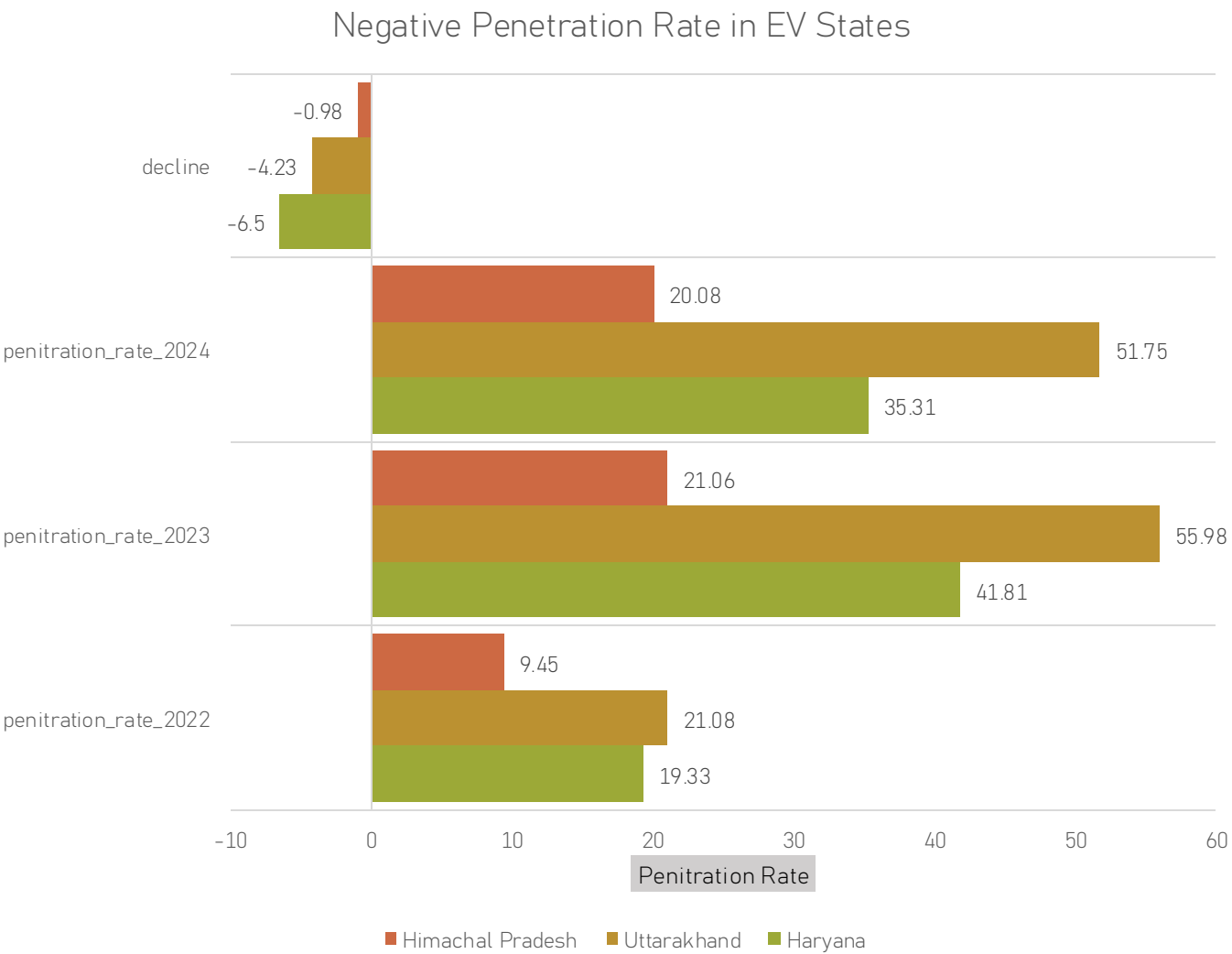
state	penitration_rate_2W	penitration_rate_4W
Kerala	163.32	507.72
Goa	218.2	52.43
Karnataka	138.12	51.33
Delhi	116.4	51.18
Chandigarh	102.42	58.98





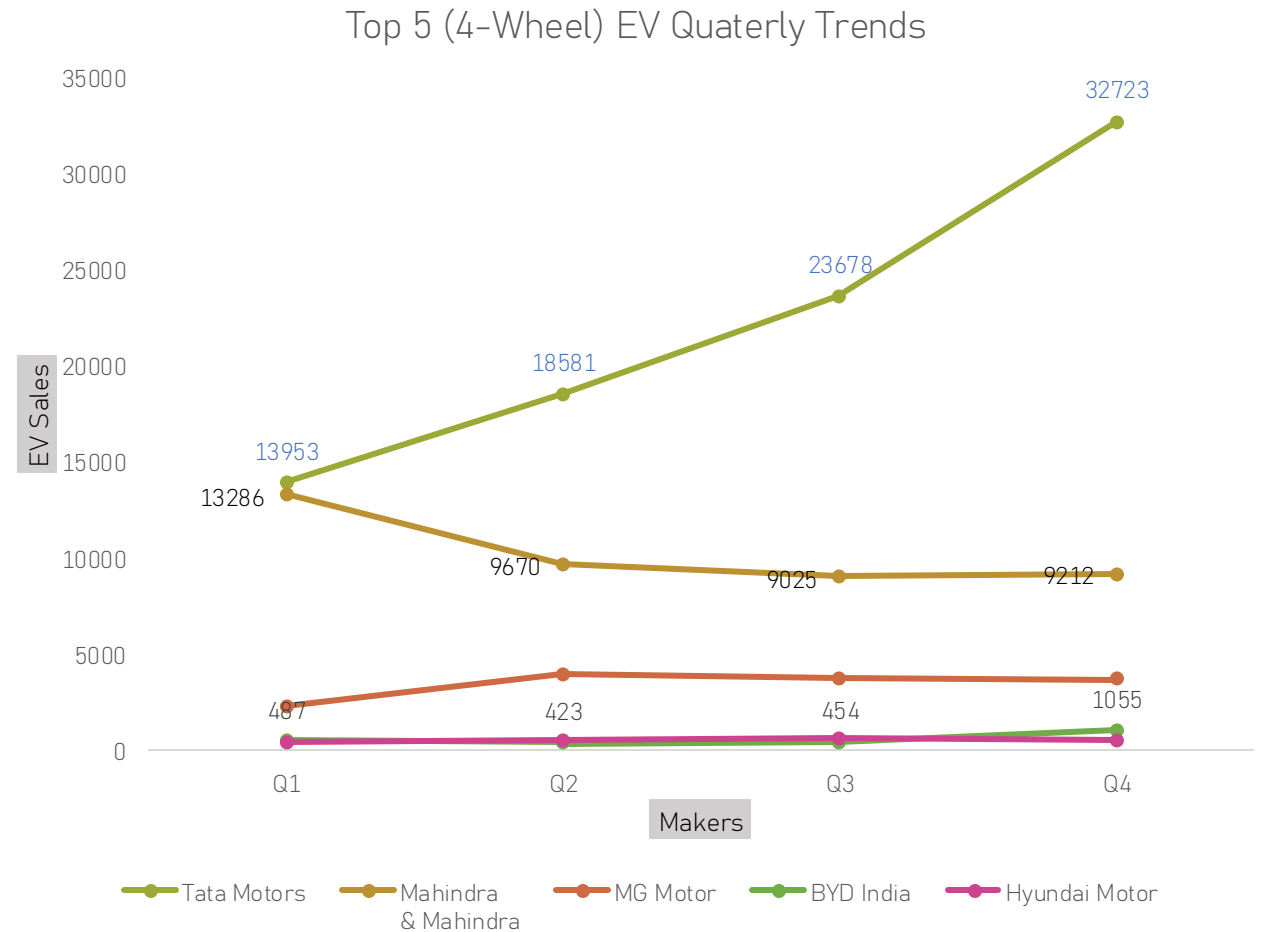
Negative Penetration Rate in EV(2022-2024)

state	decline
Haryana	-6.5
Uttarakhand	-4.23
Himachal Pradesh	-0.98



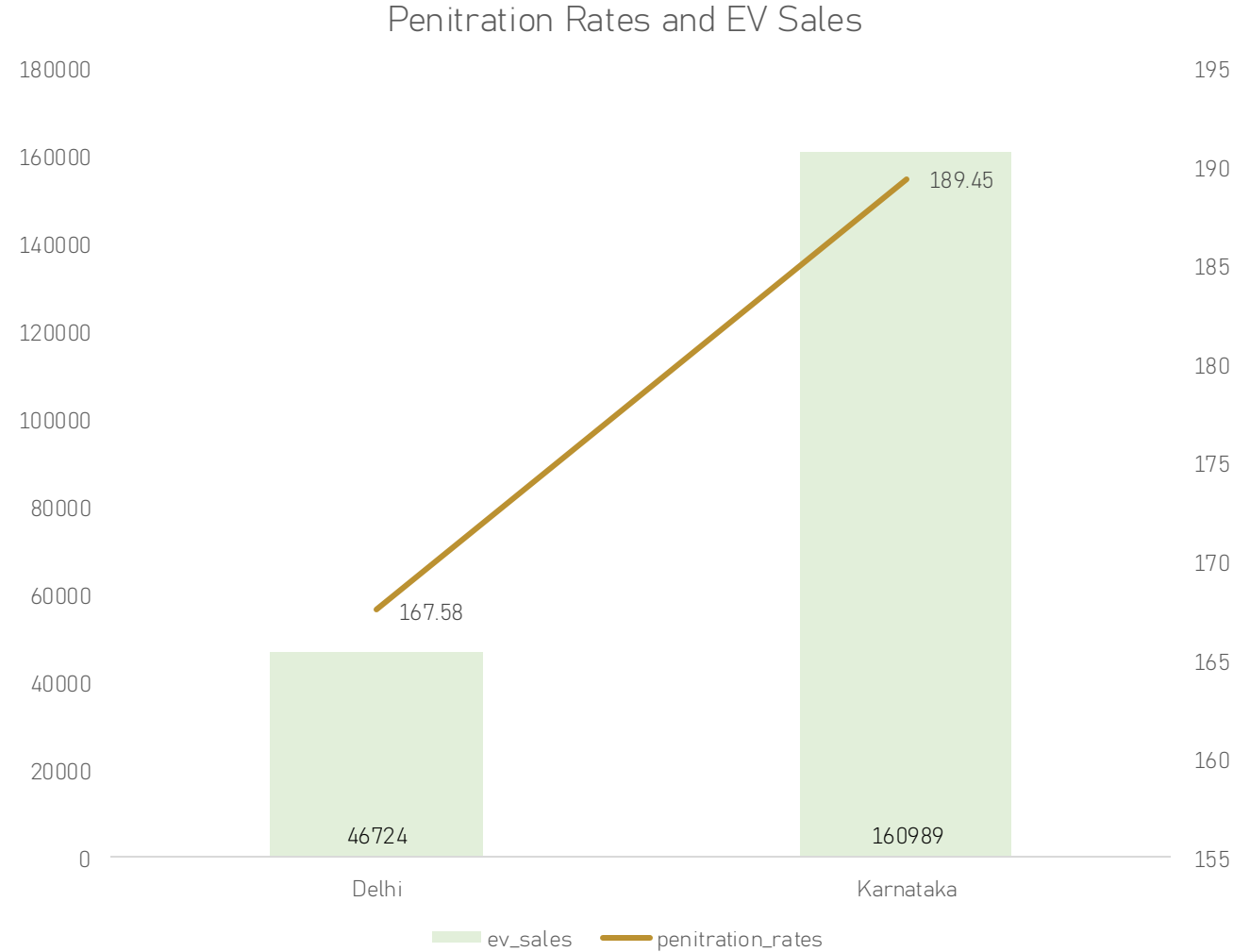
Top 5 (4-Wheel) EV makers Quarterly Trends

maker	Q1	Q2	Q3	Q4
Tata Motors	13953	18581	23678	32723
Mahindra & Mahindra	13286	9670	9025	9212
MG Motor	2309	3957	3766	3721
BYD India	487	423	454	1055
Hyundai Motor	392	579	586	519



Penetration Rate in Delhi and Karnataka for 2024

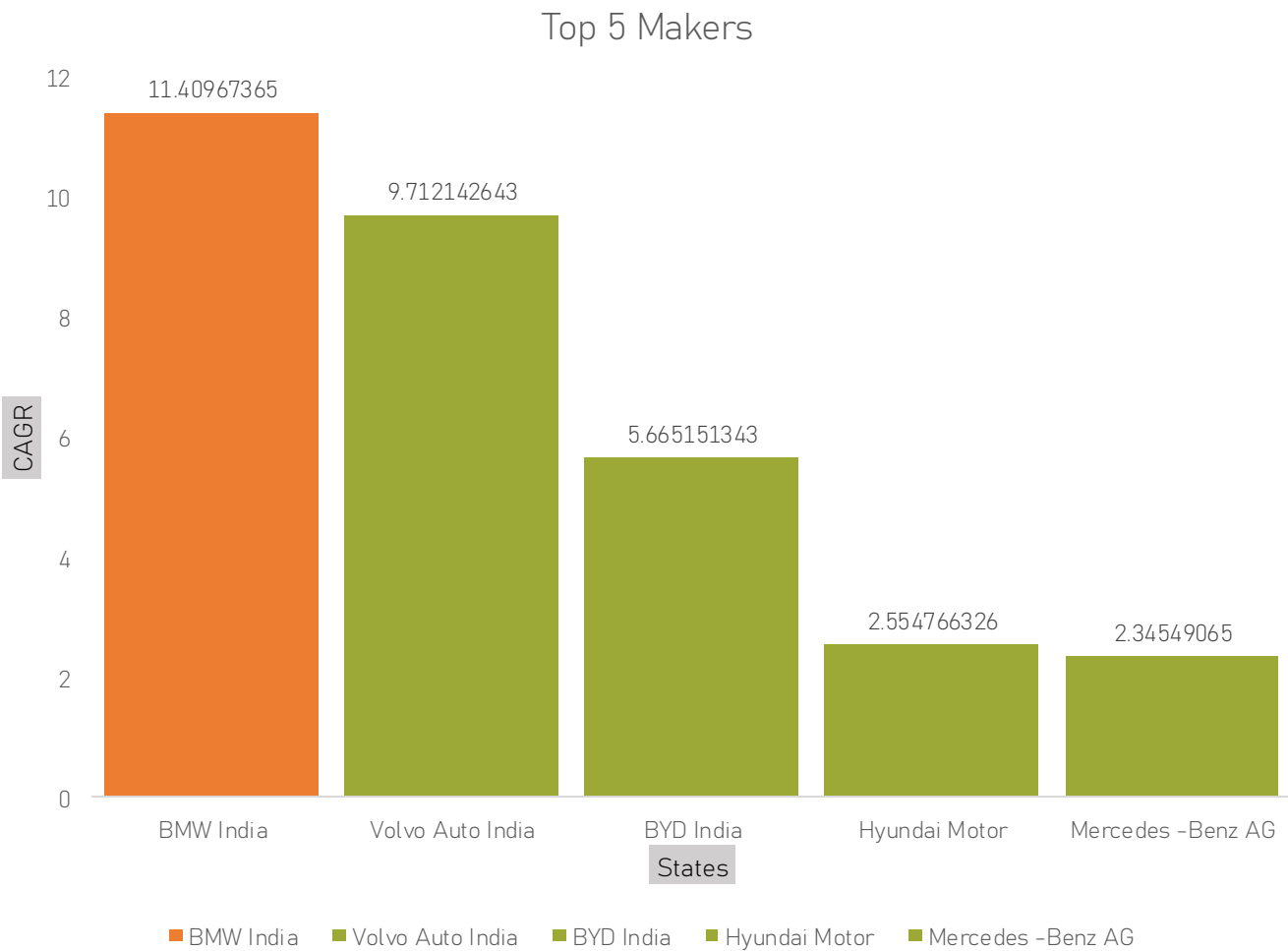
state	ev_sales	penetration_rates
Delhi	46724	167.58
Karnataka	160989	189.45





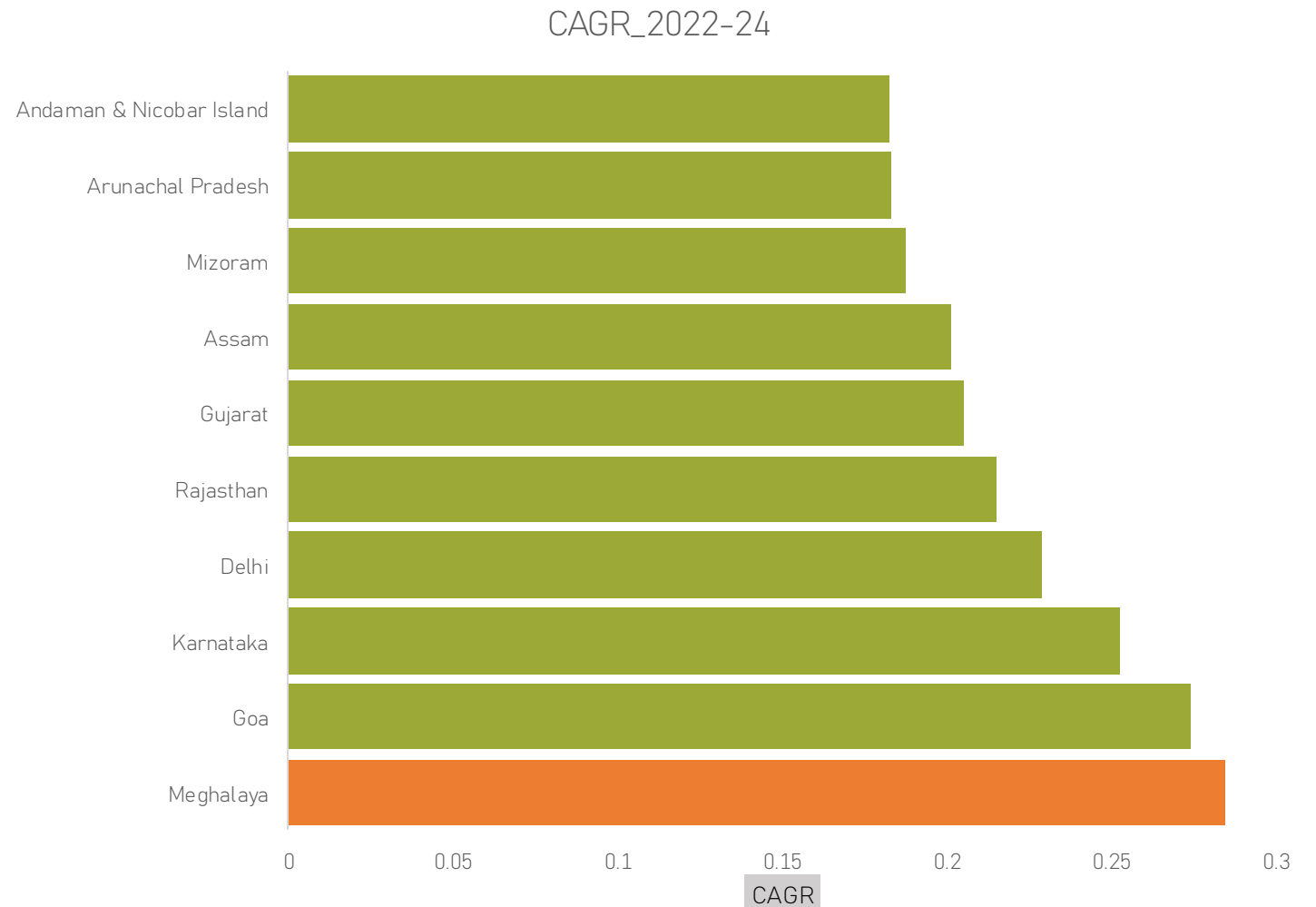
Top 5 Makers CAGR

maker	CAGR
BMW India	11.40967365
Volvo Auto India	9.712142643
BYD India	5.665151343
Hyundai Motor	2.554766326
Mercedes -Benz AG	2.34549065



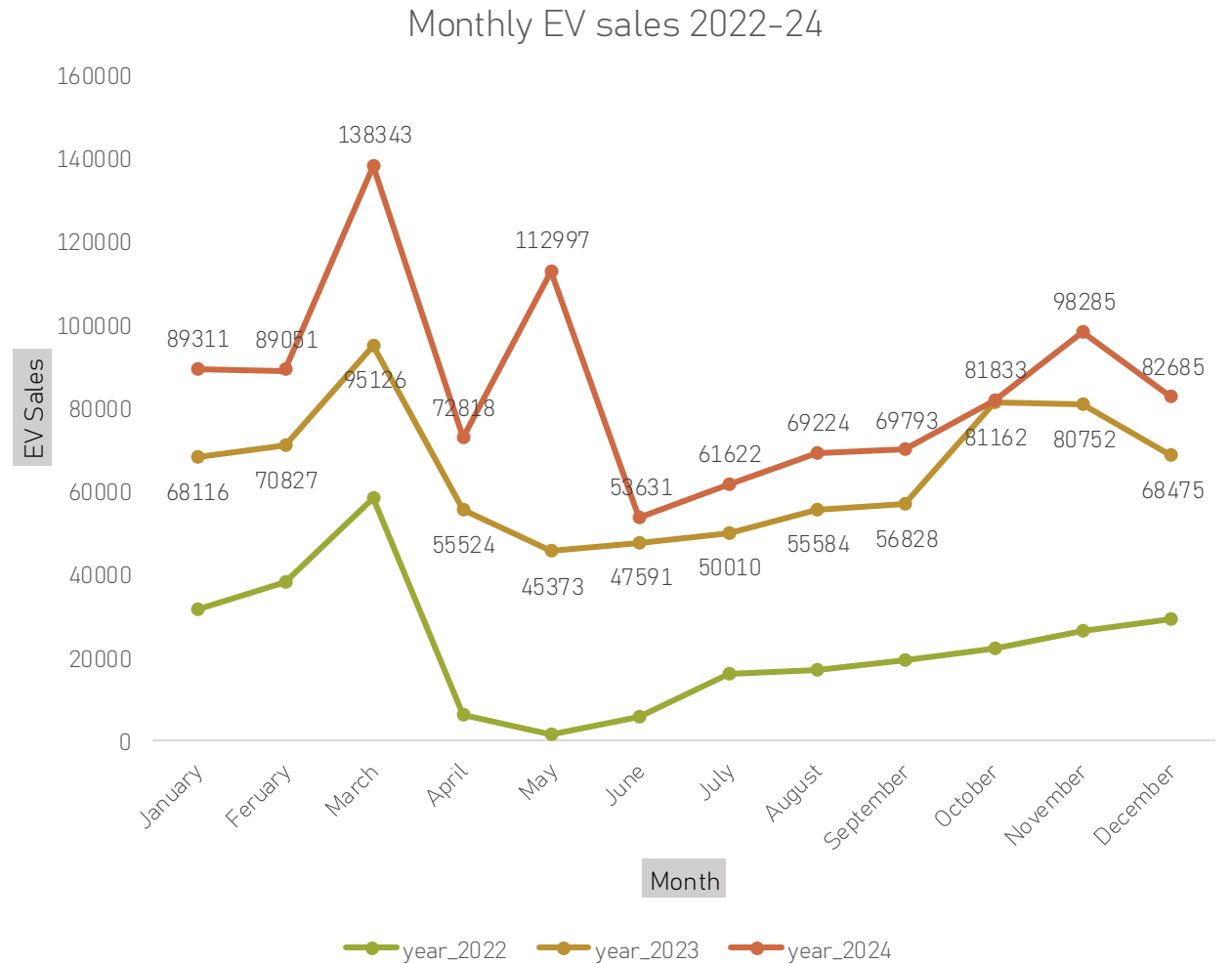
Top 10 States CAGR

state	CAGR
Meghalaya	0.284690747
Goa	0.274101964
Karnataka	0.252835822
Delhi	0.228843474
Rajasthan	0.214973803
Gujarat	0.205456771
Assam	0.201336718
Mizoram	0.18771599
Arunachal Pradesh	0.183033587
Andaman & Nicobar Island	0.182871146



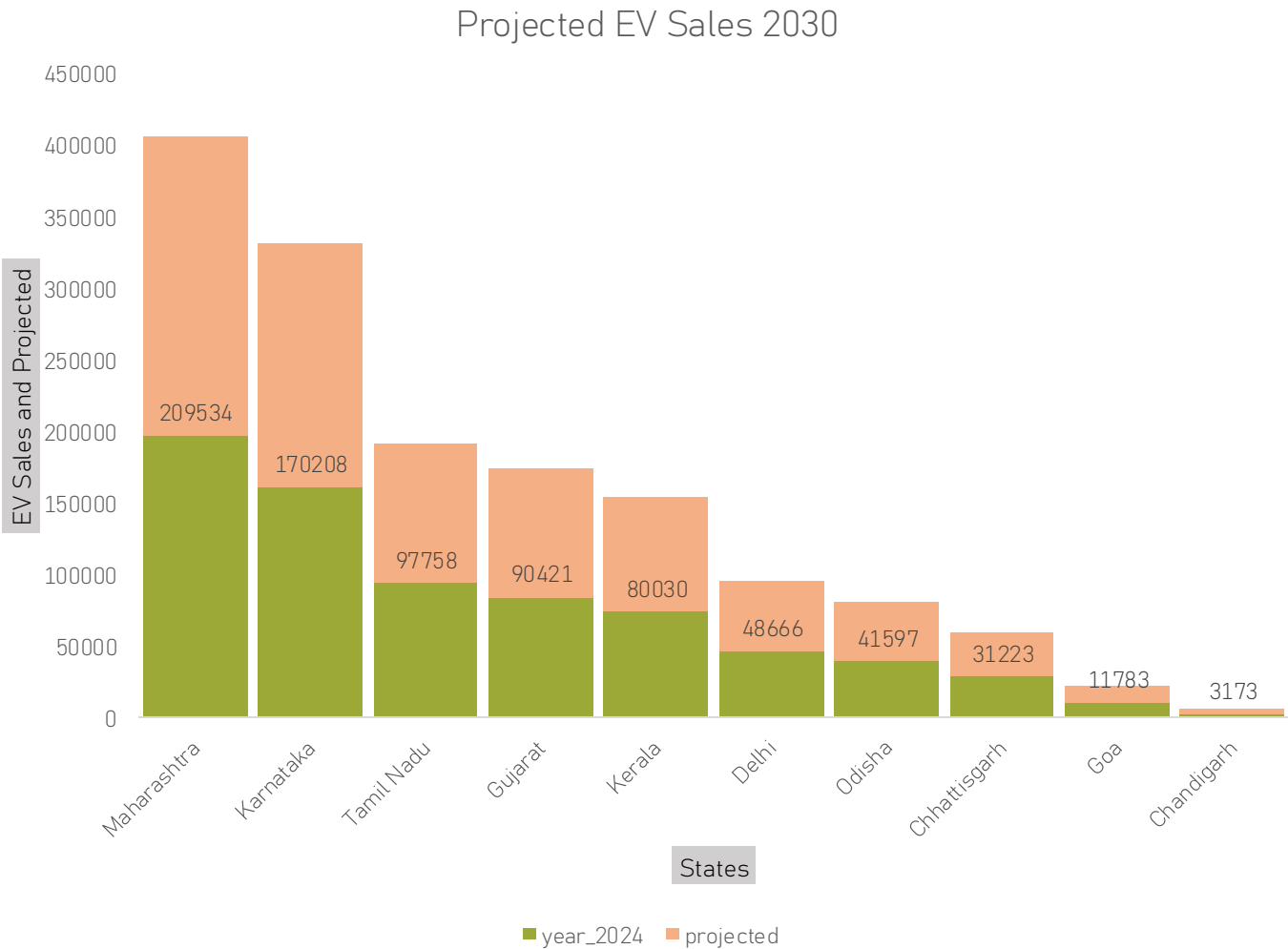
Monthly EV Sales 2022-24

month_	year_2022	year_2023	year_2024
January	31672	68116	89311
Feruary	38171	70827	89051
March	58118	95126	138343
April	6315	55524	72818
May	1499	45373	112997
June	5487	47591	53631
July	15794	50010	61622
August	17153	55584	69224
September	19351	56828	69793
October	22190	81162	81833
November	26159	80752	98285
December	29241	68475	82685



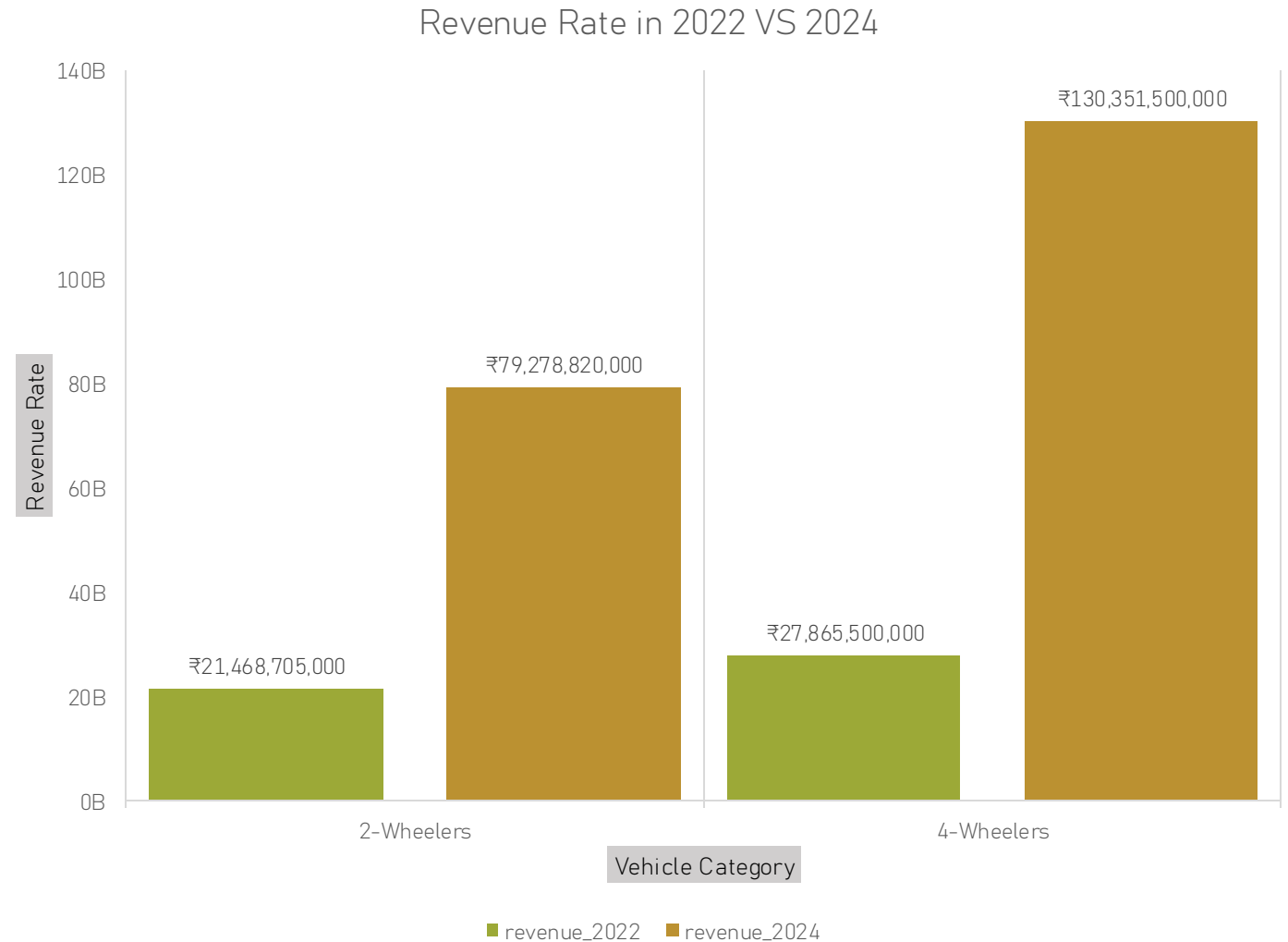
Projected EV Sales by 2030

state	year_2024	projected
Maharashtra	197169	209534
Karnataka	160989	170208
Tamil Nadu	94314	97758
Gujarat	84359	90421
Kerala	73938	80030
Delhi	46724	48666
Odisha	39118	41597
Chhattisgarh	28540	31223
Goa	10799	11783
Chandigarh	2877	3173



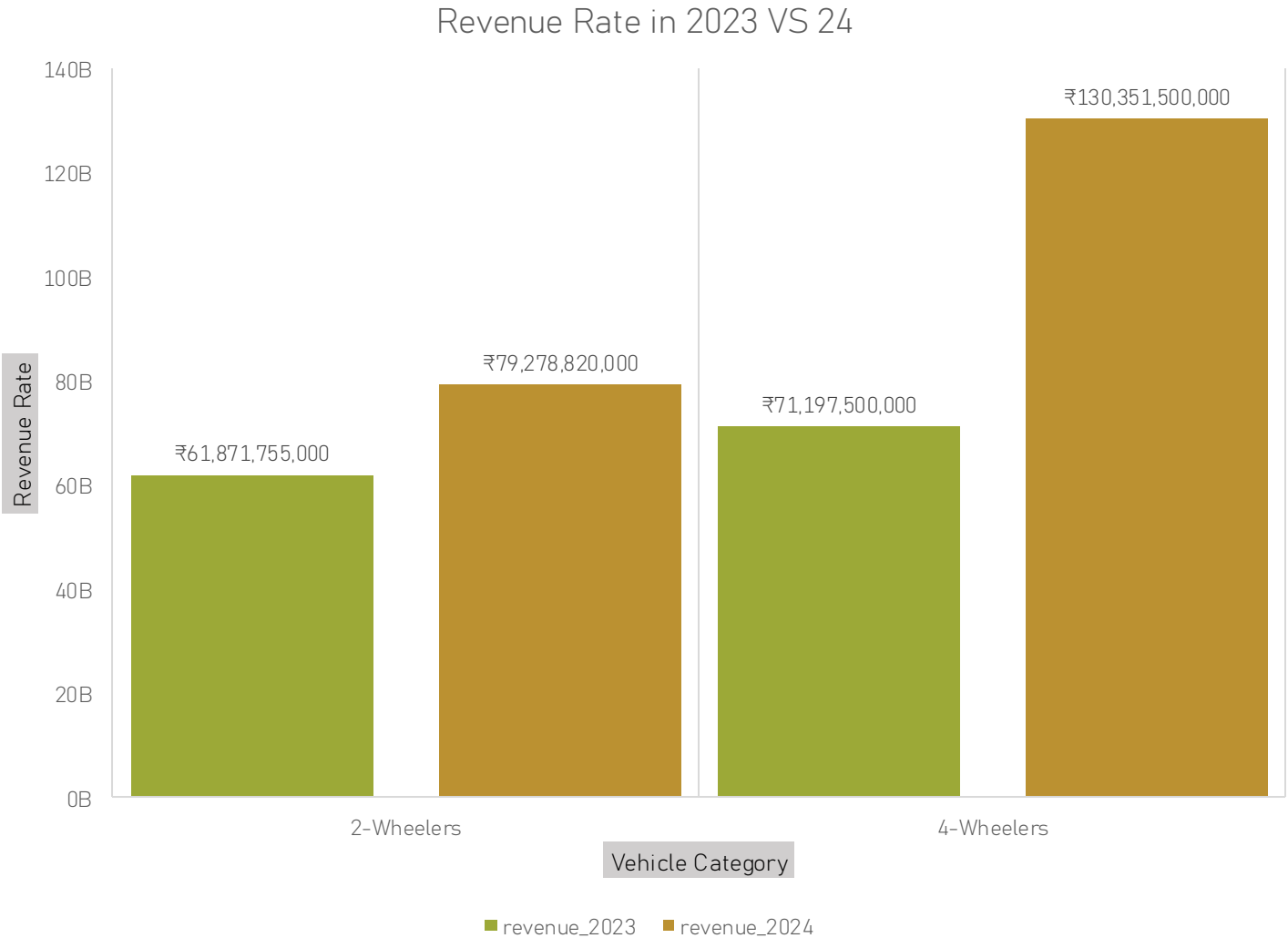
Revenue Rate of EV in 2022 VS 24

vehicle_category	revenue_2022	revenue_2024
2-Wheelers	₹21,468,705,000	₹79,278,820,000
4-Wheelers	₹27,865,500,000	₹130,351,500,000



Revenue Rate of EV in 2023 VS 24

vehicle_category	revenue_2023	revenue_2024
2-Wheelers	₹61,871,755,000	₹79,278,820,000
4-Wheelers	₹71,197,500,000	₹130,351,500,000





Uncover Insights

- **OLA's Market Dominance:** OLA remained the top EV maker in both 2023 and 2024, suggesting strong brand loyalty or effective marketing and distribution strategies.
- **Emerging Competitors:** The appearance of TVS and ATH in 2024 as top EV makers indicates dynamic market changes, possibly due to innovative products, better pricing, or superior technology.
- **States with High Penetration:** Kerala, Goa, Karnataka, Delhi, and Chandigarh lead in EV penetration, suggesting these states have favorable conditions for EV adoption, such as supportive policies, better infrastructure, or higher consumer awareness.

Uncover Insights

- **States with Negative Penetration:** Haryana, Uttarakhand, and Himachal Pradesh show negative growth rates, reason might be lack of charging infrastructure, consumers or lesser government support for EV adoption.
- **Comparison:** Karnataka's higher penetration rate could be due to more aggressive state policies, better incentives, or a stronger focus on renewable energy than Delhi.
- **Top 5 Makers:** BMW India, Volvo auto India, BYD India, Hyundai Motor, and Benz have the highest Compound Annual Growth Rate (CAGR), indicating rapid growth in their EV sales over the period.



Uncover Insights

- **Sales Trends:** Each year, March shows the highest sales, possibly due to fiscal year-end incentives, promotions, or new model launches.
- **Maharashtra's Dominance:** Maharashtra's leading position indicates strong future growth, likely driven by urbanization, economic strength, and proactive government policies.
- **Revenue Growth:** In both comparisons, the revenue rate in 2024 is higher, indicating overall market growth.

Secondary Research

- Primary Reasons for Customers Choosing 4-Wheeler EVs in 2023 and 2024
- **Cost Savings:** One of the primary reasons for choosing 4-wheeler EVs is the significant cost savings in the long term. With rising fuel prices, the lower operating and maintenance costs of EVs become attractive.
- **Environmental Concerns:** Increasing awareness about climate change and pollution has led consumers to opt for environmentally friendly alternatives.



Secondary Research

- Impact of Government Incentives and Subsidies on EV Adoption Rates
- **2-Wheelers:** Government incentives and subsidies have greatly impacted the adoption rates of 2-wheeler EVs. Subsidies reduce the initial cost, making these vehicles affordable for middle and lower-income groups
- **4-Wheelers:** For 4-wheelers, the impact is seen in terms of higher adoption rates among urban populations and higher-income groups.



Secondary Research

- Correlation Between Charging Infrastructure Availability and EV Sales
- **Positive Correlation:** There is a strong positive correlation between the availability of charging stations and the penetration rates of EVs in the top states. States like Karnataka, Goa, Kerala, and Delhi, which have higher EV sales and penetration rates, also have better charging infrastructure.
- **Brand Ambassador:** Virat Kohli
- World Wide recognized and respected person
- As a sports icon known for his fitness and eco-friendly lifestyle, which are crucial for promoting EVs.



Secondary Research

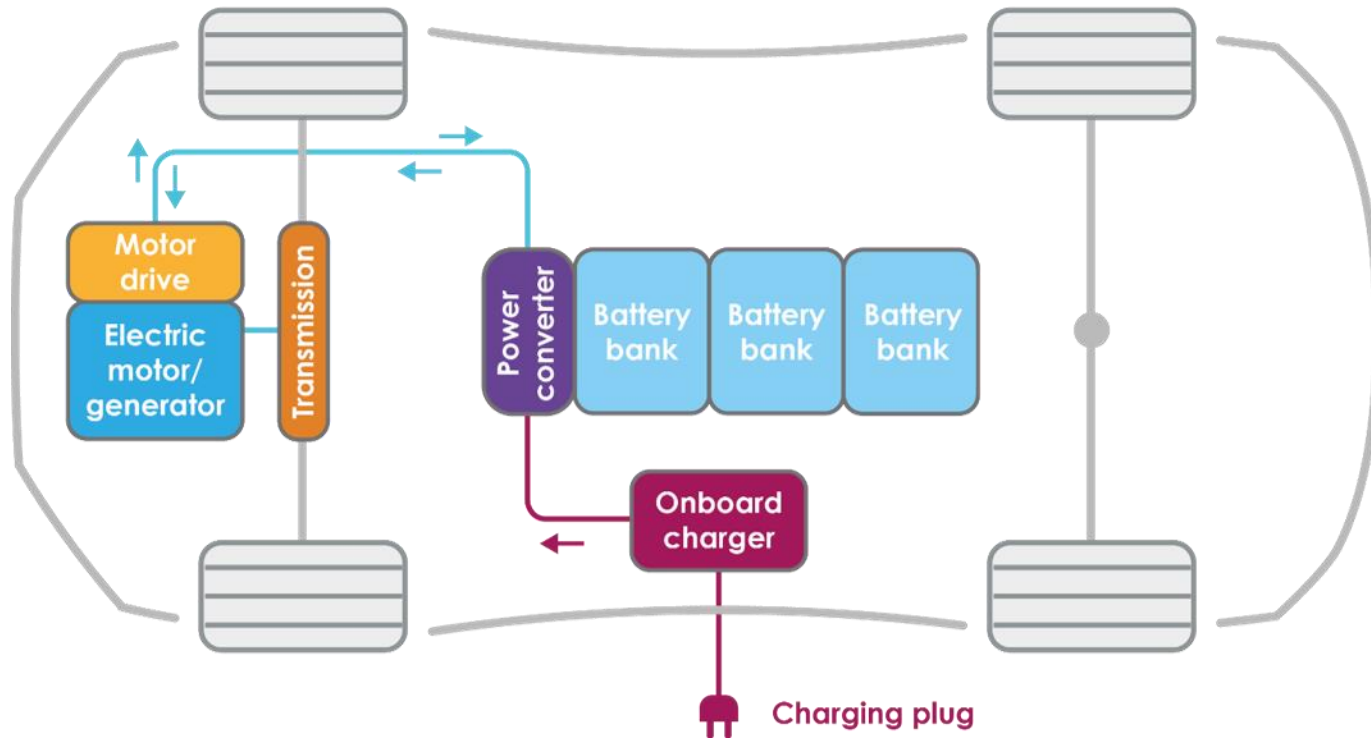
- Ideal State for AtliQ Motors to Start Manufacturing Unit
- Gujarat offers substantial incentives for setting up manufacturing units, including capital subsidies, land allotment at concessional rates, and power subsidies.
- Top 3 Recommendations for AtliQ Motors
 - Focus on Affordable EV models
 - Expand charging Infrastructure Partnerships
 - Leverage Digital Marketing

Conclusion

Dynamic Market: The EV market in India is highly dynamic, with rapid changes in market leaders, regional penetration, and growth rates.

Need for Tailored Strategies: Different regions and segments show varying levels of adoption and growth, highlighting the need for tailored strategies by companies and policymakers to maximize EV adoption.

Growth Potential: There is significant growth potential in the EV market, especially with supportive policies, infrastructure development, and growing consumer awareness of sustainability.



Thank you

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