

## AtliQ Motors

Provide Insights to an Automotive company on Electric vehicles launch in India  
Challenge #12



### Market Research

Comprehensive dashboard for analyzing EV/Hybrid market trends, performance, and insights.



### Market Insights

Analysis of EV market performance: state rankings and revenue trends.



### Sales Trends

Exploring EV sales trends: seasonal patterns, revenue growth, and penetration.



### Future Trends

Future EV sales trends: leading manufacturers and top-performing states.



### Stories

Graphs showing seasonal trends, revenue, state penetration, top manufacturers, forecasts.

**Abbreviations:** EV = Electric Vehicle, CY = Current Year, PY = Previous Year, PR = Penetration Rate, YoY = Year on Year, CAGR = Compounded Annual Growth Rate





# Market Research Dashboard: EV/Hybrid Vehicles Industry Analysis



Select Year

- ☐ 2022
- ☐ 2023
- ☒ 2024

Measure Names

- CY Sales
- PY Sales

Abbreviations:

- EV = Electric Vehicle
- CY = Current Year
- PY = Previous Year
- PR = Penetration Rate
- YoY = Year on Year..

Total Vehicle Sold: 2024 | Total

21.18M | 57.22M

▲ 7.93% Vs. PY



Electric Vehicle Sold: 2024 | Total

1.02M | 2.07M

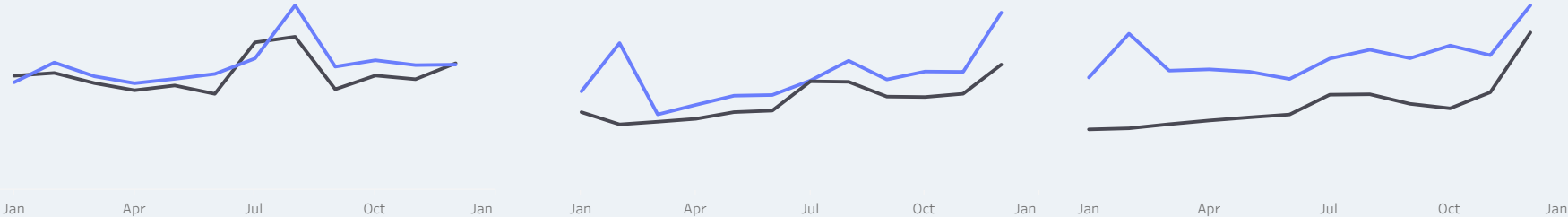
▲ 31.50% Vs. PY



Revenue: 2024 | Total

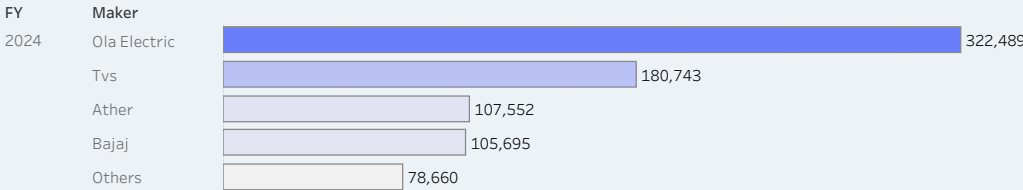
₹ 210B | ₹ 392B

▲ 57.53% Vs. PY

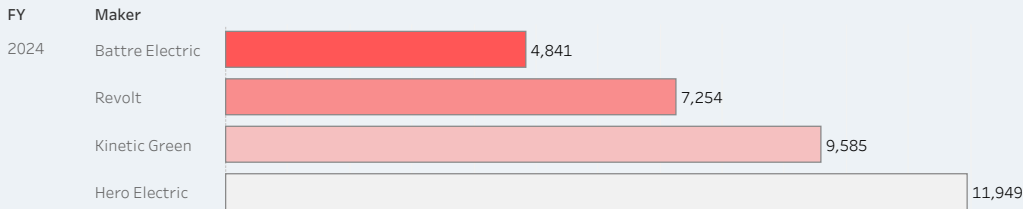


## Top 5 Two-Wheeler Makers for FY 2024

In FY 2023 and 2024, Ola Electric led 2-wheeler sales with 1,582,333 units, while Jitendra had the lowest with 8,563 units.



## Bottom 4 Two-Wheeler Makers for FY 2024



Top N

5

Fiscal Year

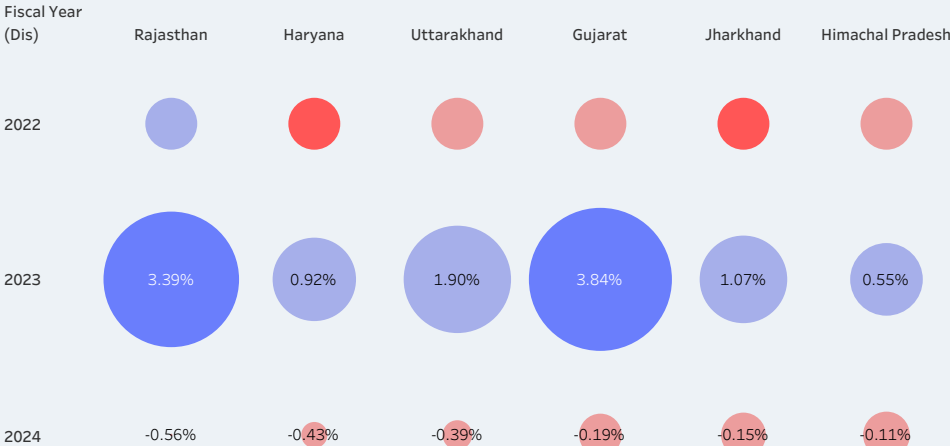
2024

Bottom N

4

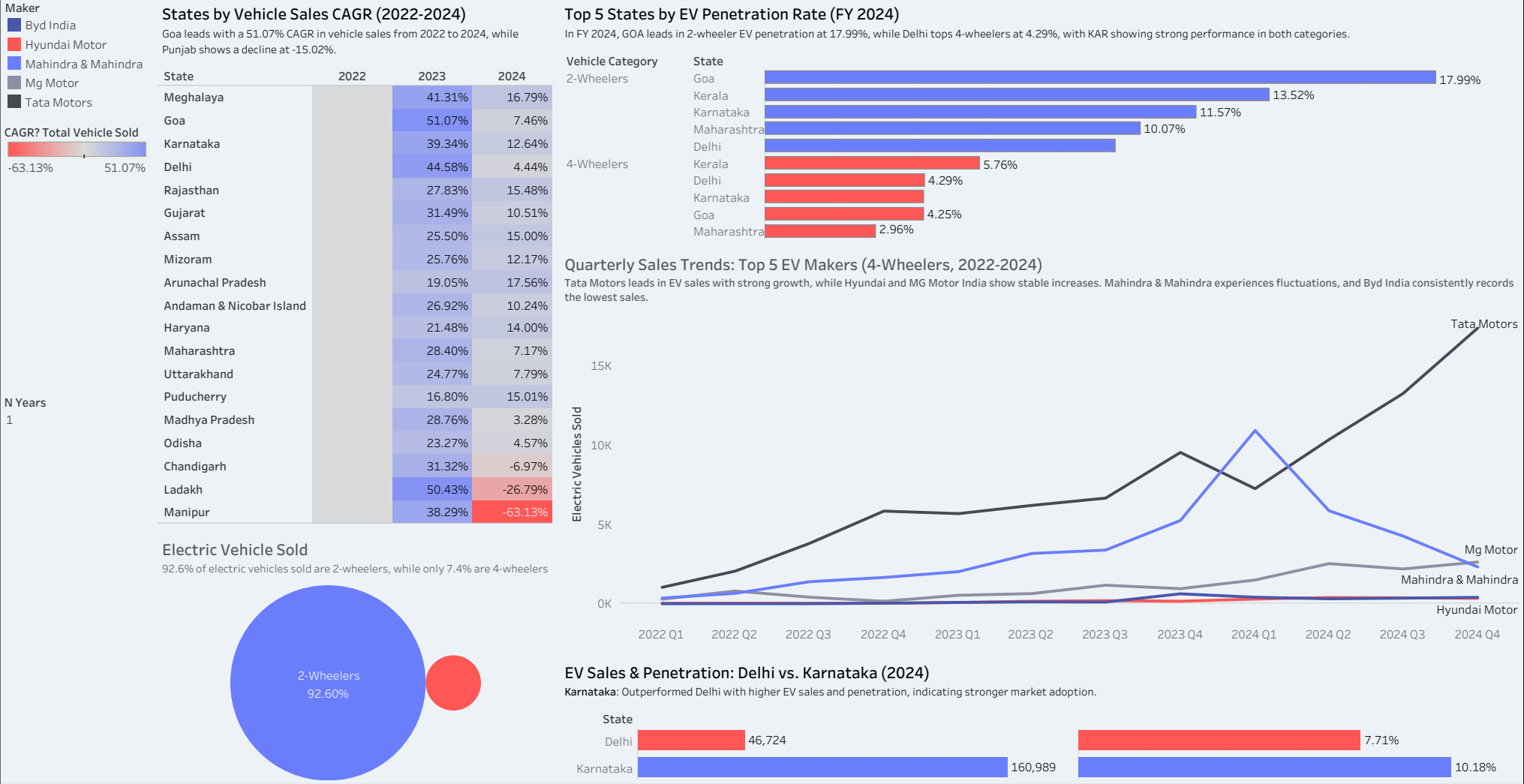
## States with Declining EV Sales (2022-2024)

The insights reveal differing EV sales trends, with Rajasthan and Haryana seeing notable declines, while Uttarakhand and Gujarat experience gradual decreases, and Himachal Pradesh maintains a steady, slight decline.



All calculations are based on the fiscal year (FY)

Last Refresh: 09-08-2024



Top 5 States by EV Penetration Rate (FY 2024)

In FY 2024, GOA leads in 2-wheeler EV penetration at 17.99%, while Delhi tops 4-wheelers at 4.29%, with KAR showing strong performance in both categories.

Vehicle Category	State	Penetration Rate
2-Wheelers	Goa	17.99%
	Kerala	13.52%
	Karnataka	11.57%
	Maharashtra	10.07%
	Delhi	
4-Wheelers	Kerala	5.76%
	Delhi	4.29%
	Karnataka	4.25%
	Goa	
	Maharashtra	2.96%

Quarterly Sales Trends: Top 5 EV Makers (4-Wheelers, 2022-2024)

Tata Motors leads in EV sales with strong growth, while Hyundai and MG Motor India show stable increases. Mahindra & Mahindra experiences fluctuations, and Byd India consistently records the lowest sales.

Electric Vehicles Sold

0K

5K

10K

15K

2022 Q1

2022 Q2

2022 Q3

2022 Q4

2023 Q1

2023 Q2

2023 Q3

2023 Q4

2024 Q1

2024 Q2

2024 Q3

2024 Q4

Tata Motors

Mg Motor

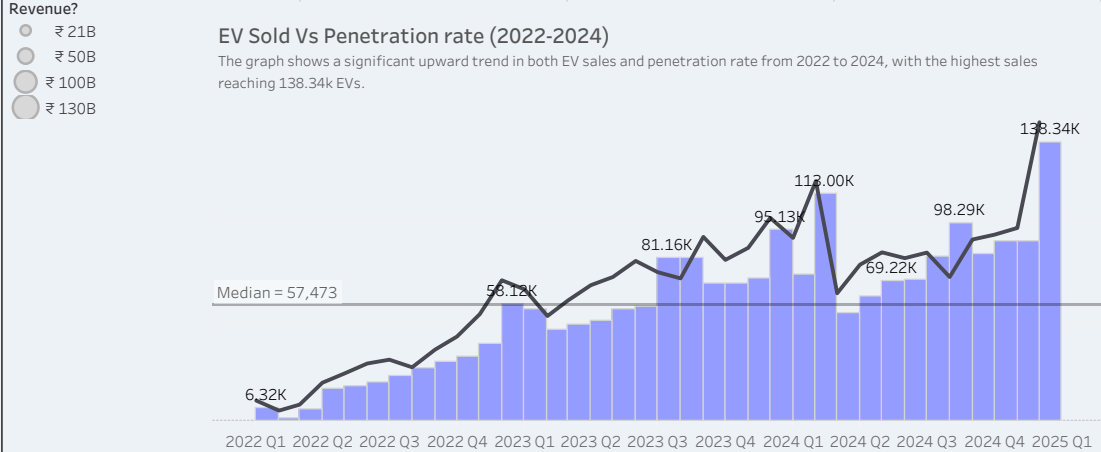
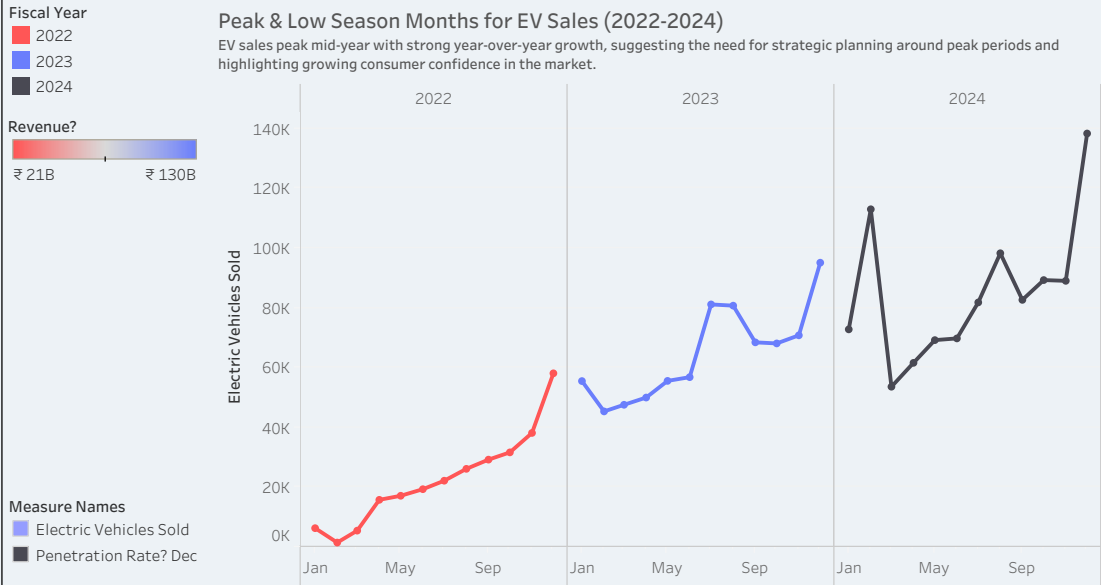
Mahindra & Mahindra

Hyundai Motor

EV Sales & Penetration: Delhi vs. Karnataka (2024)

Karnataka: Outperformed Delhi with higher EV sales and penetration, indicating stronger market adoption.

State	Sales	Penetration Rate
Delhi	46,724	7.71%
Karnataka	160,989	10.18%



Estimated Revenue Growth: 4-Wheeler & 2-Wheeler EVs (2022-2024)

Both 4-Wheeler and 2-Wheeler EV markets are projected to see substantial revenue growth from 2022 to 2024, with 4-Wheelers reaching ₹1,798B and 2-Wheelers ₹785B, driven by exceptionally high growth rates each year.

Fiscal Year (Dis)	Vehicle Category	Revenue?	Growth Rate 23 Vs 24	Growth Rate 22 Vs 24
2022	2-Wheelers	₹ 21B	0.00%	0.00%
	4-Wheelers	₹ 28B	0.00%	0.00%
2023	2-Wheelers	₹ 62B	188.20%	0.00%
	4-Wheelers	₹ 71B	155.50%	0.00%
2024	2-Wheelers	₹ 79B	28.13%	269.28%
	4-Wheelers	₹ 130B	83.08%	367.79%



# Future Trends in EV Sales & Growth: Top Makers & Leading States

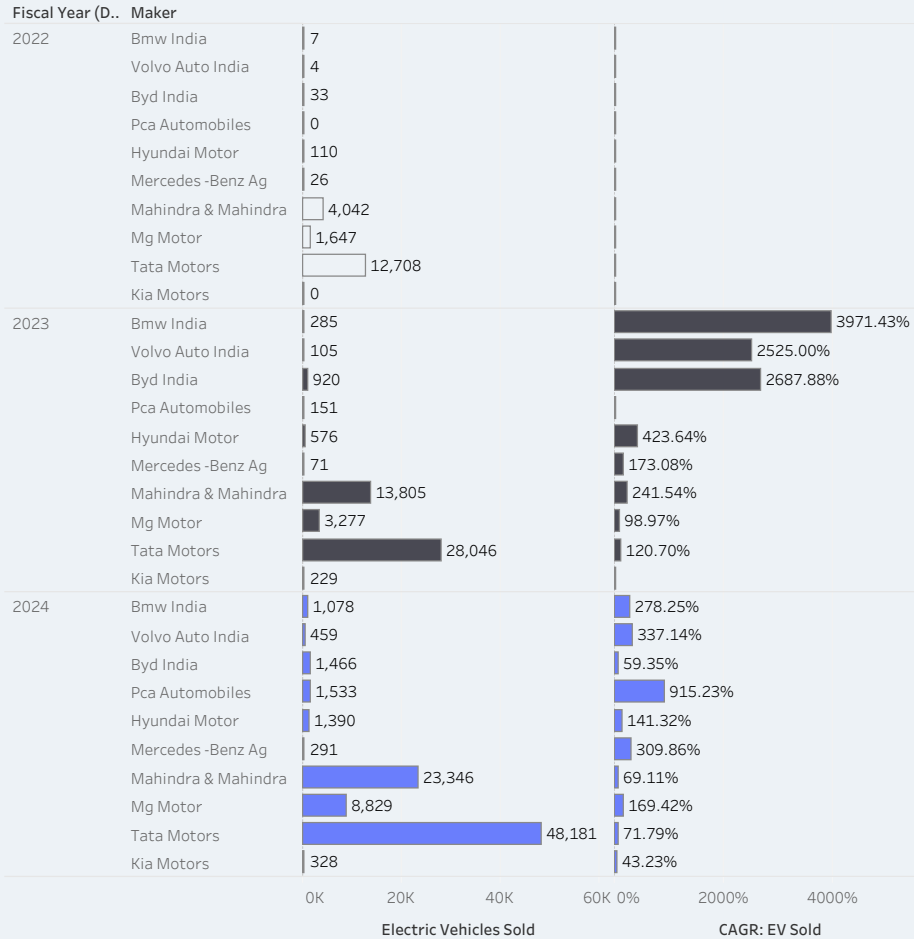


N Years

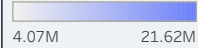
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## CAGR in 4-Wheeler Sales: Makers (2022-2024)

In 2023, BMW achieved a CAGR of 3971.43%, leading the market, followed by BYD and Volvo. Additionally, BMW's 4-wheeler sales saw a 2-year CAGR of 1140.97%.

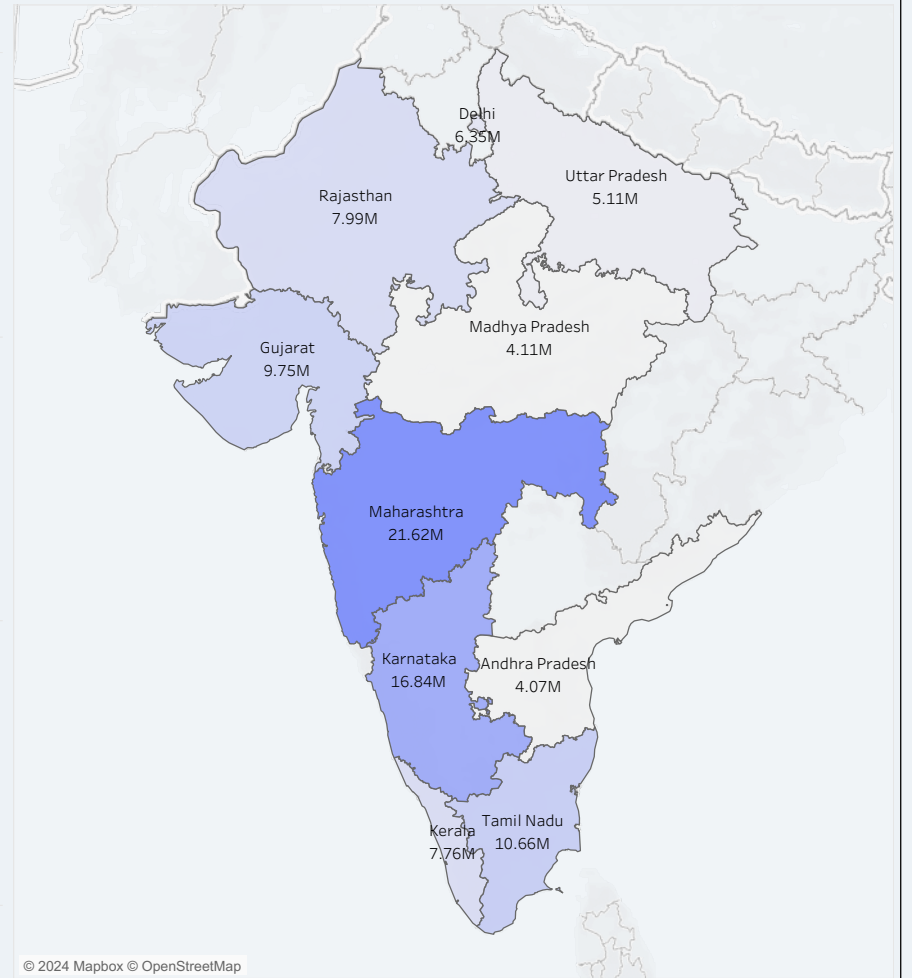


#of EV Sales @2030



## Projected EV Sales (2030): Top 10 States by Penetration Rate

MAH, KAR, & TN are projected to dominate EV sales by 2030, leading the top 10 states in penetration rate.



Fiscal Year  
2024

Top N  
5

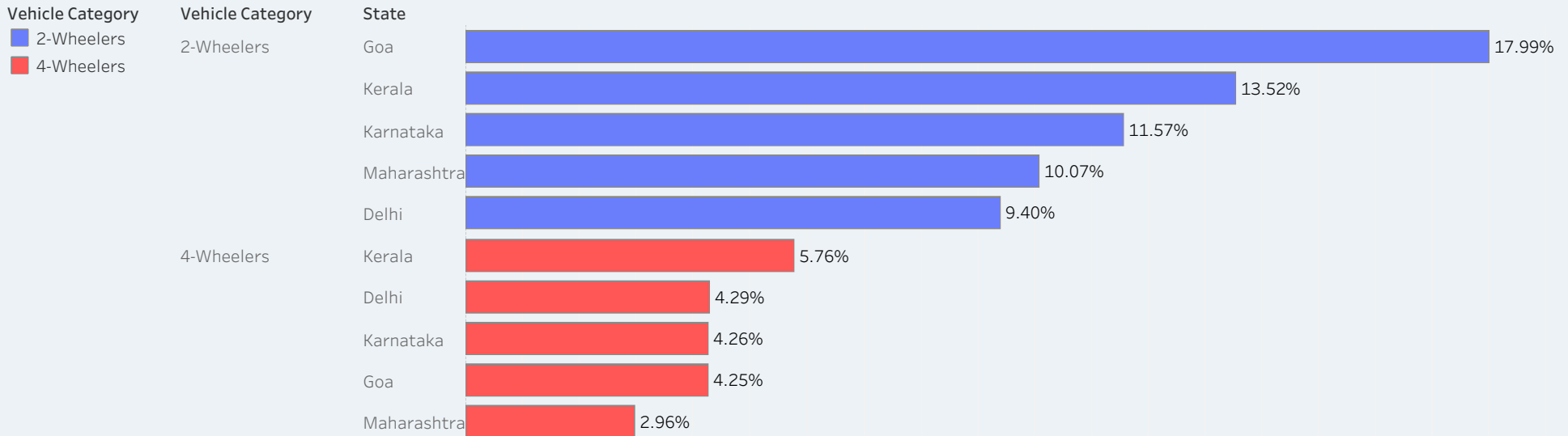
Bottom N  
5

FY	Maker	Units Sold
2024	Battre Electric	4,841
	Revolt	7,254
	Kinetic Green	9,585
	Hero Electric	11,949
	Okaya Ev	13,864

- In the fiscal years 2023 and 2024, the 2-wheeler market saw significant disparities among manufacturers. **Ola Electric** emerged as the top performer with 1,582,333 units sold, showcasing its dominance in the market. **Okinawa** followed with 296,945 units, while **Hero Electric** also made it to the top three, although specific sales figures were not provided.

- On the other hand, the bottom performers included **Jitendra** with 8,563 units, **Being** with slightly lower sales, and **Ampere** with approximately 11,018 units. This data highlights the competitive landscape and varying market penetration among different manufacturers.

### Top 5 States for EV Penetration Rates (FY 2024)



### Insights:

- **Goa Leads in 2-Wheelers:** With a penetration rate of 17.99%, Goa is the top state for 2-wheeler EV adoption. This suggests a strong market for 2-wheeler EVs, making it an attractive region for manufacturers and investors.
- **Karnataka's Strong Performance:** Karnataka shows high penetration rates for both 2-wheelers (13.52%) and 4-wheelers (4.25%). This indicates a balanced and growing market for EVs across different vehicle types, making it a strategic location for expanding EV infrastructure and services.
- **Delhi's Dual Leadership:** Delhi leads in 4-wheeler penetration (4.29%) and is also among the top for 2-wheelers (10.07%). This dual leadership highlights Delhi as a key market for both segments, suggesting opportunities for targeted marketing and policy support to further boost adoption.
- **Emerging Markets:** Maharashtra and Kerala, with notable penetration rates, represent emerging markets with potential for growth. Stakeholders should consider these states for future investments and market development initiatives.

States with Decline in EV Sales (2022-2024)

Insights:

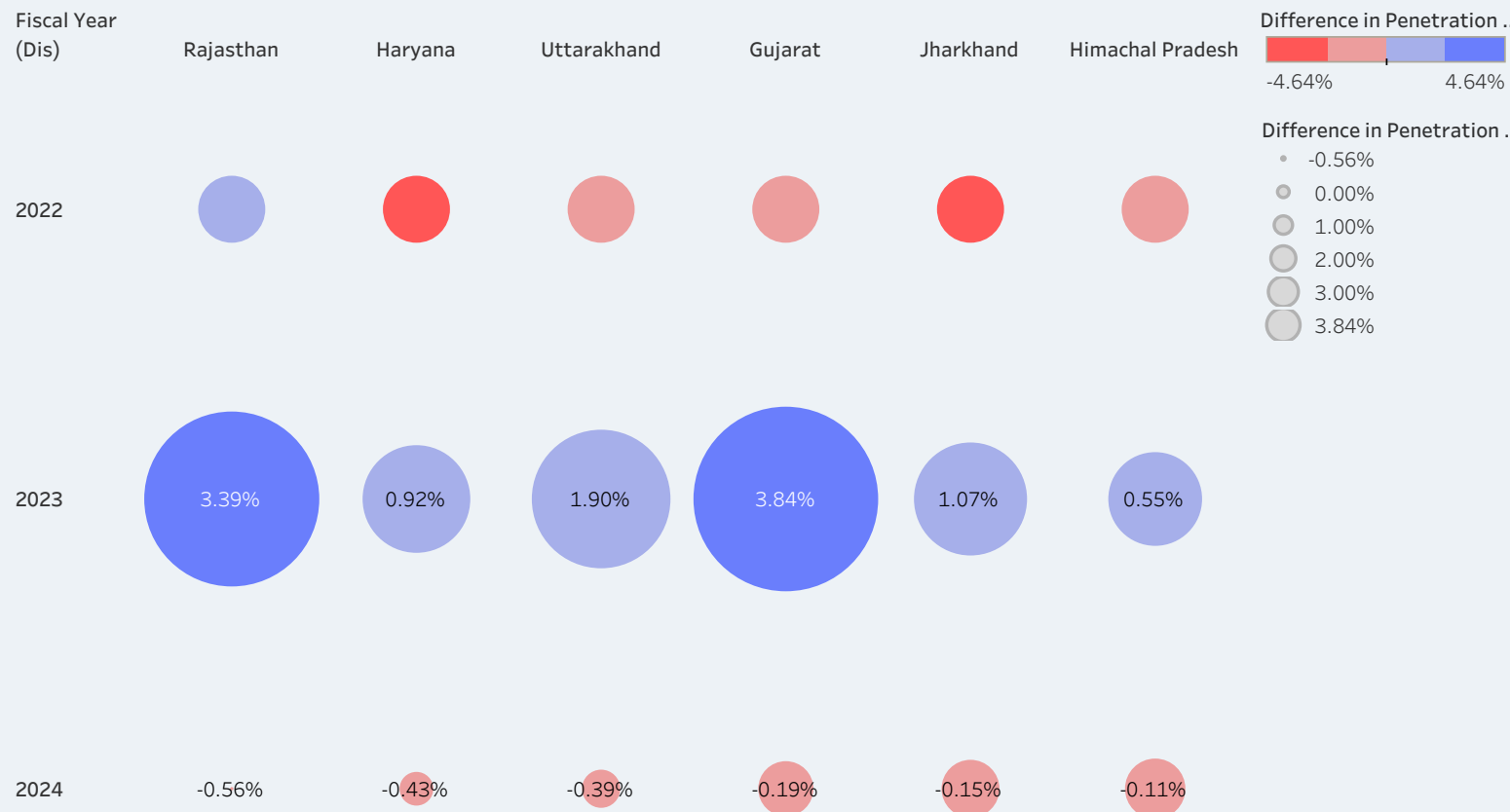
**Rajasthan's Decline:** Rajasthan shows a significant decline in EV sales from 2022 to 2024, with the largest decrease in 2023.

**Haryana's Decrease:** Haryana's EV sales decline steadily over the years, with the smallest decrease in 2024.

**Uttarakhand's Increase:** Uttarakhand shows a gradual increase in the decline of EV sales, with a noticeable rise in 2024.

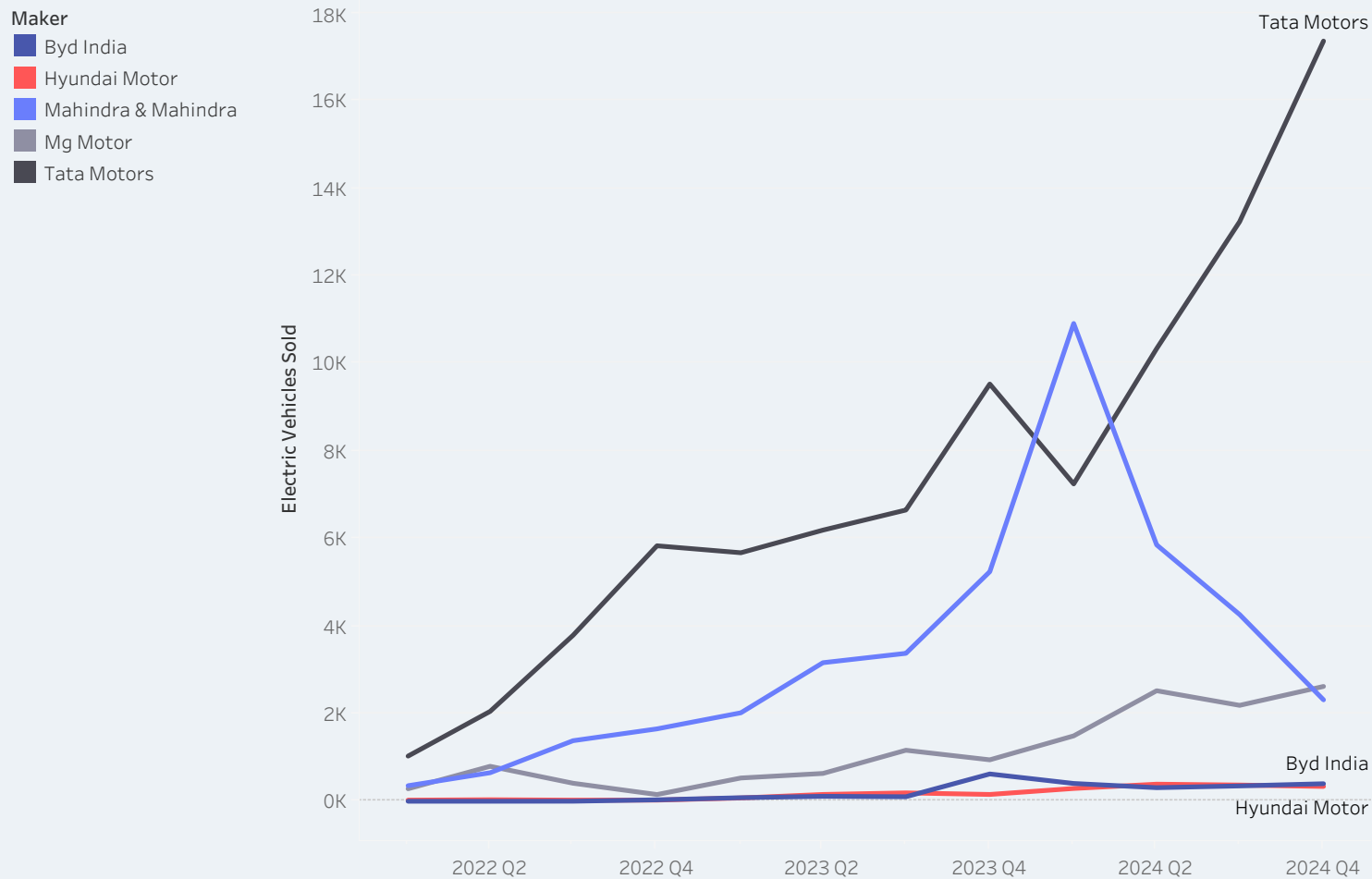
**Gujarat's Consistency:** Gujarat shows a medium decline in EV sales starting from 2023 and remains consistent in 2024.

**Himachal Pradesh's Stability:** Himachal Pradesh shows a small but steady decline in EV sales over the years.





## Quarterly Sales Trends: Top 5 EV Makers (4-Wheelers, 2022-2024)



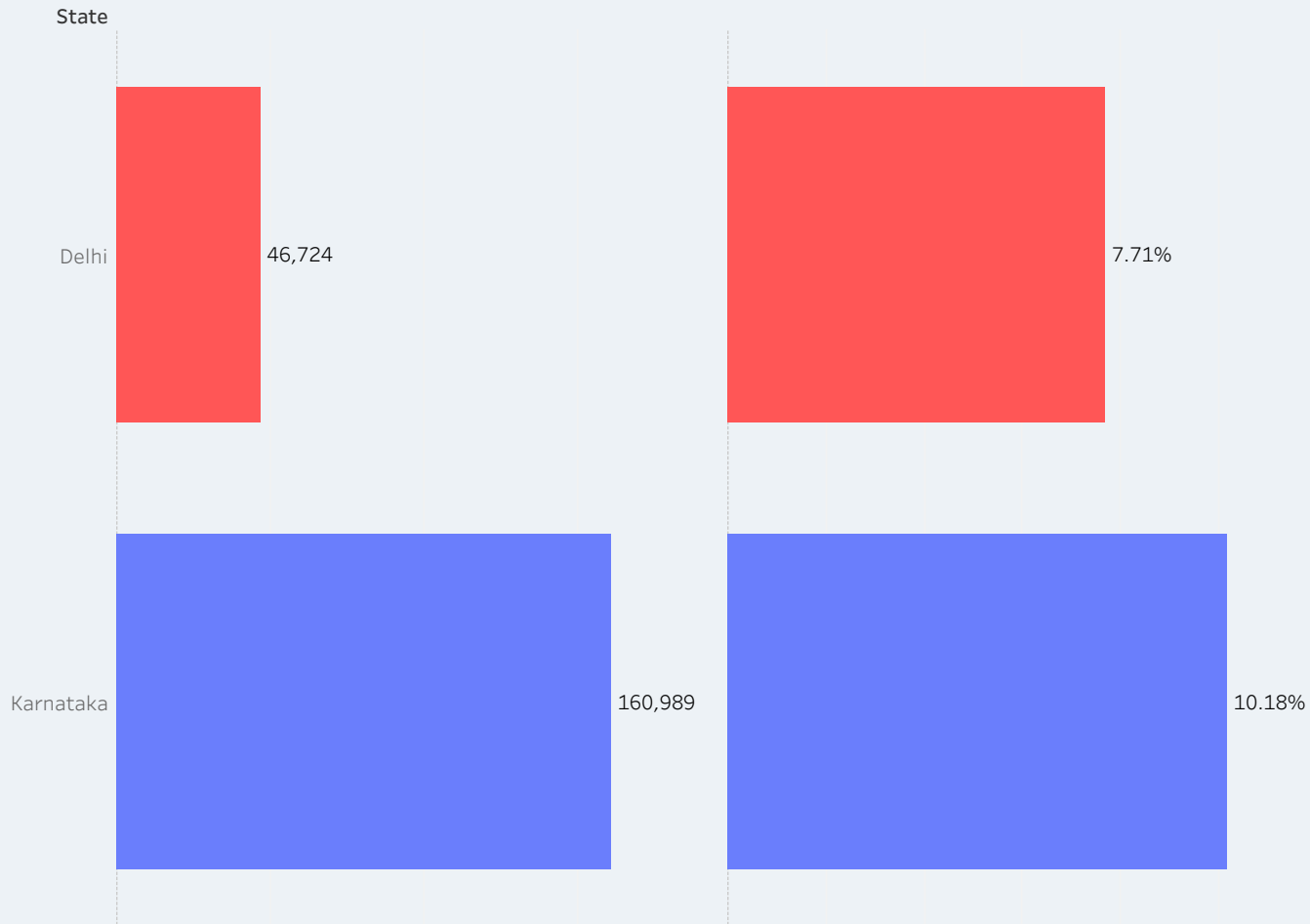
### Insights:

- **Tata Motors Leads:** Tata Motors shows a significant increase in sales, peaking in Q3 2022 before a slight drop in Q4, indicating strong market leadership.
- **Stable Growth for Hyundai India:** Hyundai India's sales are relatively stable with a slight uptick towards Q4, suggesting consistent performance.
- **Gradual Increase for MG Motor India:** MG Motor India shows a small but steady increase in sales over the year.
- **Fluctuating Sales for Mahindra & Mahindra:** Mahindra & Mahindra experienced fluctuations, with an initial increase, a dip, and then a rise towards Q4.
- **Low Sales for Byd India:** Byd India consistently had the lowest sales among the top five makers throughout all quarters.

## EV Sales & Penetration: Delhi vs. Karnataka (2024)

State

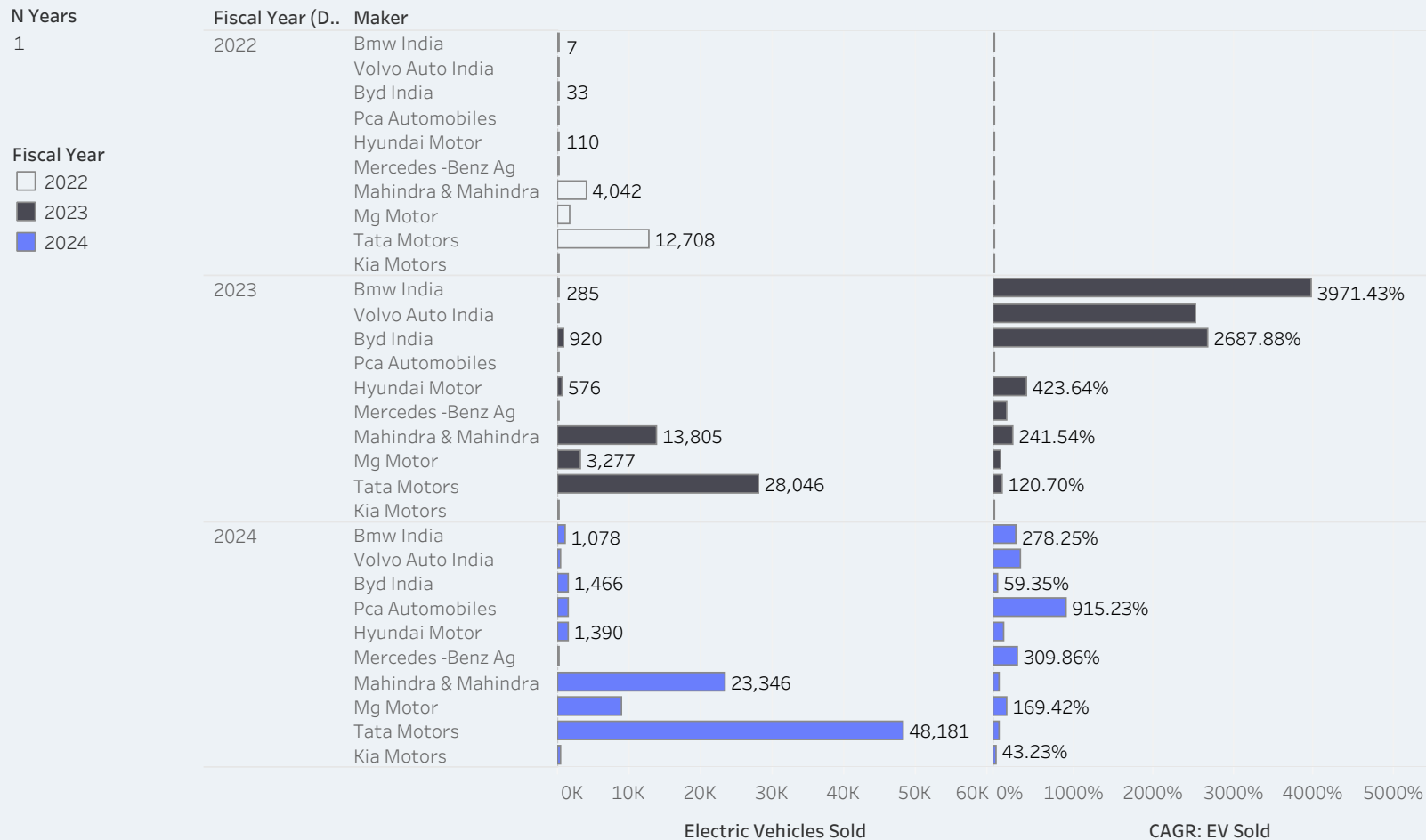
Delhi  
Karnataka



### Insights:

In 2024, Karnataka has outpaced Delhi in electric vehicle (EV) sales and market penetration. Karnataka's higher sales figures and penetration rate indicate a stronger adoption of EVs compared to Delhi. This trend suggests that Karnataka's policies, infrastructure, and consumer preferences are more conducive to the growth of the EV market. As a result, stakeholders in the EV industry might consider focusing their efforts on Karnataka to capitalize on this momentum, while also identifying and addressing the barriers to EV adoption in Delhi to boost its market performance.

## CAGR in 4-Wheeler Sales: Makers (2022-2024)




### Insights:

- In 2023, BMW demonstrated remarkable growth, achieving a compound annual growth rate (CAGR) of 3971.43%. This impressive figure positions BMW as the market leader, surpassing competitors such as BYD and Volvo.

- And, when examining the 2-year CAGR for 4-wheeler sales, BMW achieved a growth rate of 1140.97%. This indicates a robust increase in sales volume, reflecting the company's successful strategies in product development, marketing, and customer engagement.

### States by Vehicle Sales CAGR (2022-2024)

CAGR? Total Vehicle Sold		State	2022	2023	2024
-63.13%		51.07%			
N Years 1		Meghalaya		41.31%	16.79%
		Goa		51.07%	7.46%
		Karnataka		39.34%	12.64%
		Delhi		44.58%	4.44%
		Rajasthan		27.83%	15.48%
		Gujarat		31.49%	10.51%
		Assam		25.50%	15.00%
		Mizoram		25.76%	12.17%
		Arunachal Pradesh		19.05%	17.56%
		Andaman & Nicobar Island		26.92%	10.24%
		Haryana		21.48%	14.00%
		Maharashtra		28.40%	7.17%
		Uttarakhand		24.77%	7.79%
		Puducherry		16.80%	15.01%
		Madhya Pradesh		28.76%	3.28%
		Odisha		23.27%	4.57%
		Chandigarh		31.32%	-6.97%
		Ladakh		50.43%	-26.79%
		Manipur		38.29%	-63.13%

Insights:

**Meghalaya's Leading Growth:** Meghalaya is projected to have the highest CAGR of 51.07% in vehicle sales by 2024, despite showing a negative growth rate of -28.59% in another context.

**Goa and Karnataka's Strong Performance:** Goa and Karnataka show high positive growth rates above 50%, indicating strong market potential.

**Delhi's Significant Growth:** Delhi follows with a CAGR of 44.58%, reflecting substantial market expansion.

**Manipur's Decline:** Manipur is projected to have a negative CAGR of -63.23%, reflecting a significant decline in vehicle sales.

**Rajasthan's Decline:** Rajasthan shows a significant decline in EV sales from 2022 to 2024, with the largest decrease in 2023.

**Haryana's Decrease:** Haryana's EV sales decline steadily over the years, with the smallest decrease in 2024.

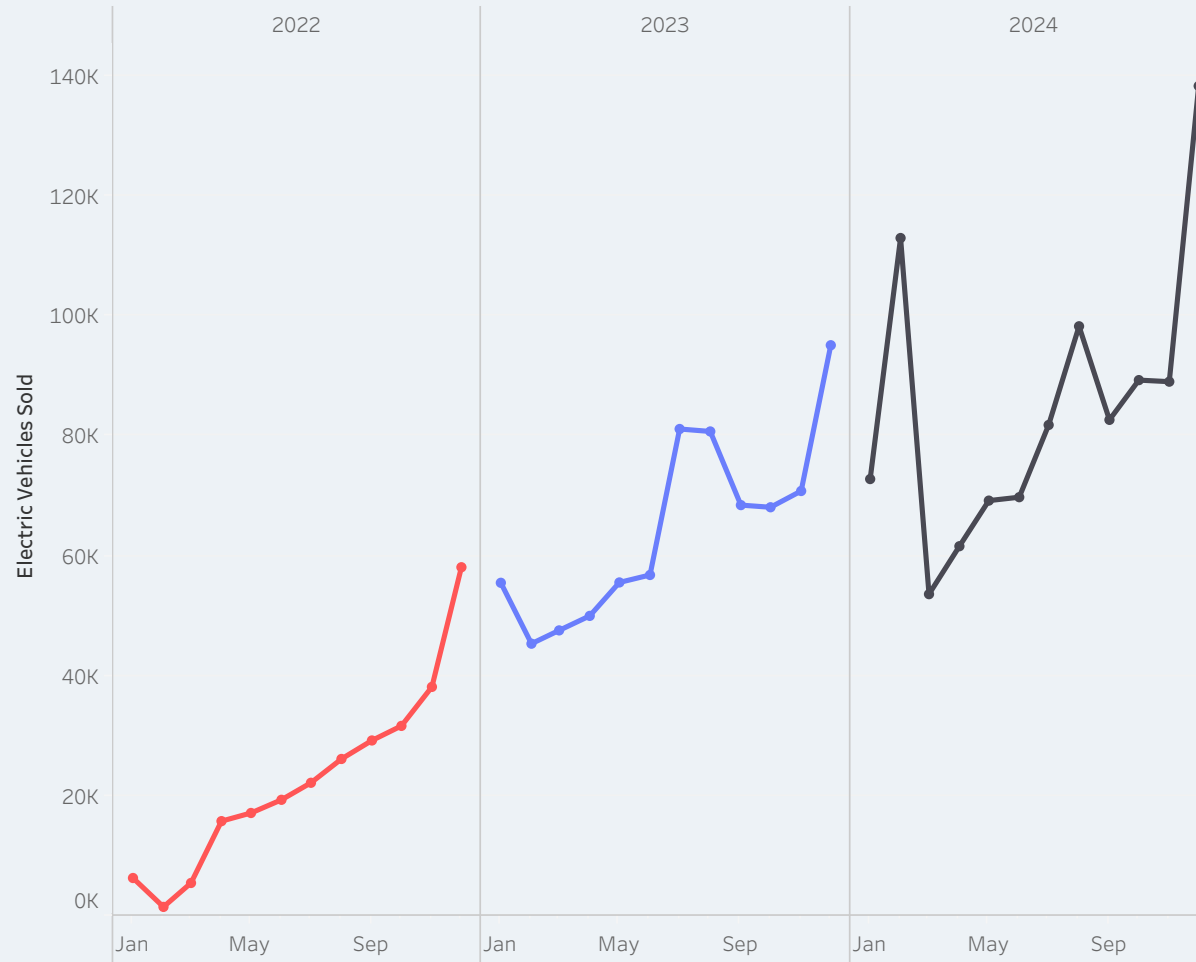
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**Himachal Pradesh's Stability:** Himachal Pradesh shows a small but steady decline in EV sales over the years.

## Peak & Low Season Months for EV Sales (2022-2024)

Fiscal Year  
2022  
2023  
2024



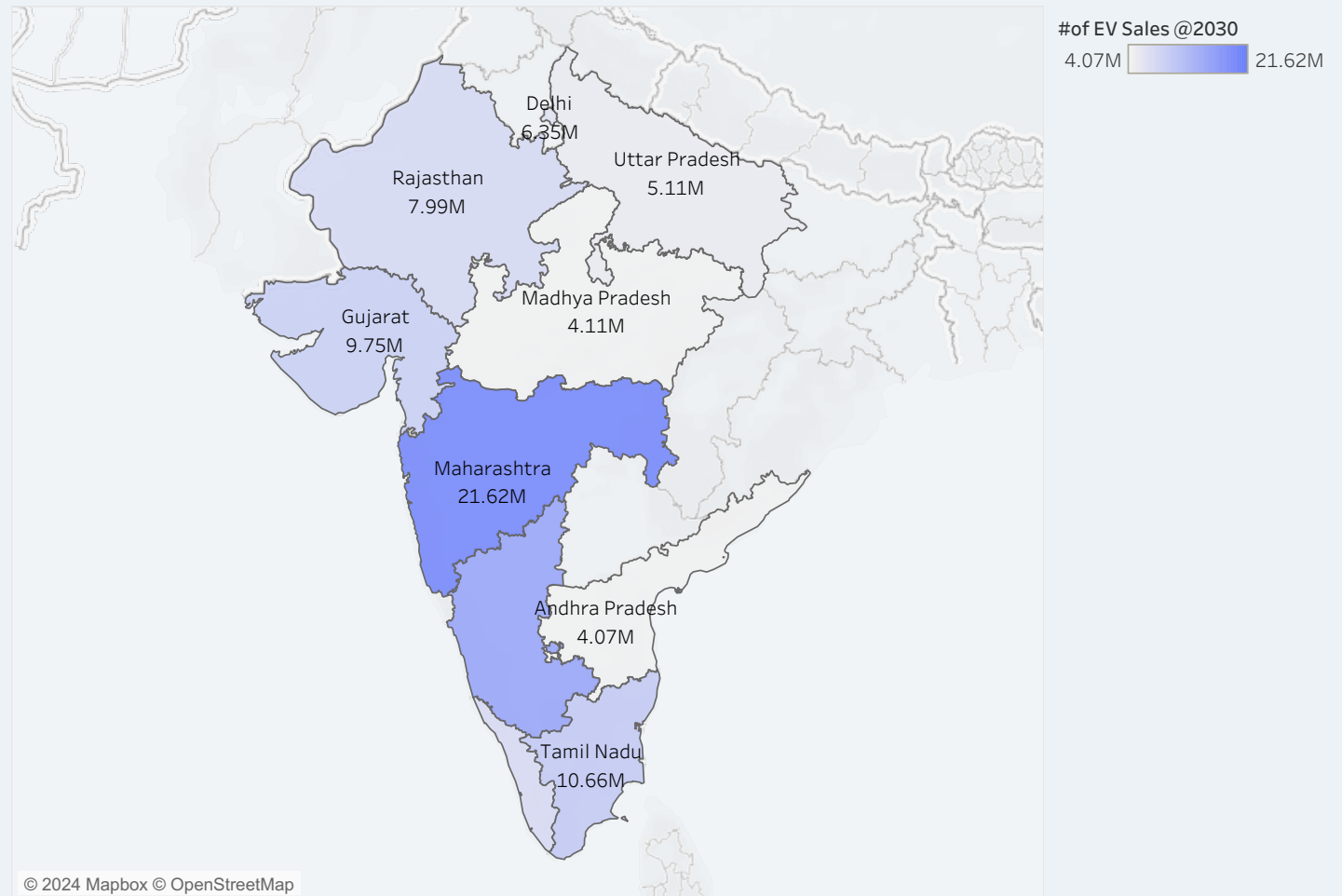
### Insights:

- **Seasonal Sales Patterns:** EV sales consistently peak mid-year (June-July) and dip at the start (January), indicating a clear seasonal trend.
- **Year-over-Year Growth:** There is a significant increase in peak sales each year, from around 60K units in 2022 to over 120K units projected for 2024, showing strong market growth.
- **Strategic Planning:** Focus marketing and inventory efforts around mid-year to capitalize on peak sales periods, and develop strategies to boost sales during low periods.
- **Market Confidence:** The upward trend in sales highlights growing consumer confidence and market acceptance of EVs, encouraging further investment and expansion.

## Projected EV Sales (2030): Top 10 States by Penetration Rate

### Insights:

- **High Adoption in Key States:** States like Maharashtra, Karnataka, and Tamil Nadu are projected to lead in EV sales, indicating strong market potential and favorable conditions for EV adoption.
- **Strategic Focus Areas:** Stakeholders should prioritize investments and infrastructure development in these high-performing states to capitalize on the growing EV market.
- **Policy and Incentives:** Effective policies and incentives in these states are likely driving higher adoption rates, suggesting that similar strategies could be beneficial in other regions.
- **Market Expansion Opportunities:** Identifying and addressing barriers in states with lower projections can help expand the EV market further, ensuring more uniform growth across the country.



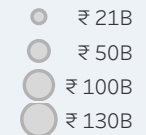
### Estimated Revenue Growth: 4-Wheeler & 2-Wheeler EVs (2022-2024)

Fiscal Year (Dis)	Vehicle Category	Revenue?	Growth Rate 23 Vs 24	Growth Rate 22 Vs 24
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Revenue?



Revenue?



## Insights

**Revenue Growth for 4-Wheelers:** The revenue for 4-Wheelers is projected to grow significantly from ₹285B in 2022 to ₹1,798B in 2024, with growth rates of 21.8% in 2022, 155.5% in 2023, and 229.3% in 2024.

**Revenue Growth for 2-Wheelers:** The revenue for 2-Wheelers is also expected to see substantial growth, increasing from ₹63B in 2022 to ₹785B in 2024, with growth rates of 38.2% in 2022, 308.2% in 2023, and 267% in 2024.



## Secondary Research Questions

**Q1. What are the primary reasons for customers choosing 4-wheeler EVs in 2023 and 2024 (cost savings, environmental concerns, government incentives)?**

**Cost savings:** EVs are cheaper to run and maintain.

**Environmental concerns:** EVs reduce carbon emissions.

**Government incentives:** Subsidies and tax breaks lower purchase costs.

**Q2. How do government incentives and subsidies impact the adoption rates of 2-wheelers and 4-wheelers? Which states in India provided most subsidies?**

**Increased Adoption:** Subsidies and incentives lower costs, driving higher adoption of 2-wheelers and 4-wheelers.

**State Leaders:** Delhi, Maharashtra, and Gujarat offer the most substantial EV subsidies in India

**Q3. How does the availability of charging stations infrastructure correlate with the EV sales and penetration rates in the top 5 states?**

**Higher EV Sales:** States with more charging stations see higher EV sales due to increased convenience and confidence in EV ownership.

**Greater Penetration:** Well-developed charging infrastructure directly correlates with higher EV penetration rates, making EVs more viable for everyday use.

**Q4. Who should be the brand ambassador if AtliQ Motors launches their EV/Hybrid vehicles in India and why?**

**Virat Kohli**, one of India's most celebrated sports icons, epitomizes energy, performance, and reliability—traits that align perfectly with the EV and hybrid vehicle market. His widespread appeal across diverse demographics makes him an ideal ambassador to champion sustainability and advanced automotive technology.

**Q5. Which state of India is ideal to start the manufacturing unit? (Based on subsidies provided, ease of doing business, stability in governance etc.)**

The ideal state in India to start an EV manufacturing unit, considering factors like subsidies, ease of doing business, and governance stability, is **Maharashtra**. Maharashtra offers strong incentives for EV manufacturing, including subsidies on capital investment, land acquisition, and electricity. It also ranks high in the Ease of Doing Business index and has a stable, proactive government that supports industrial growth.

**Q6. Your top 3 recommendations for AtliQ Motors.**

**Expand EV Line:** Broaden product offerings to capture diverse market segments.

**Advance Battery Tech:** Invest in R&D to improve range, reduce costs, and enhance efficiency.

**Boost Charging Network:** Partner to strengthen charging infrastructure and drive adoption.





## Resources

Codebasics Resume Project Challenge #12: Provide Insights to an Automotive company on Electric vehicles launch in India

Icon used in dashboard: [www.flaticon.com](http://www.flaticon.com)

Interactive report by

### Ankit Negi @ Data Analyst

Do you have any question related to report/dashboard?

Please email - [ankitnegi996@rocketmail.com](mailto:ankitnegi996@rocketmail.com)

Do you want to know how I made this report/dashboard?

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