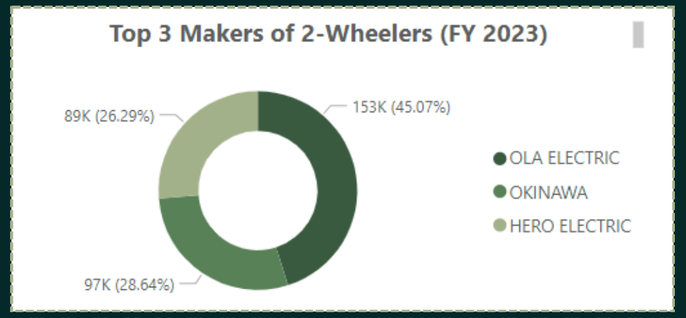
# Key Insights

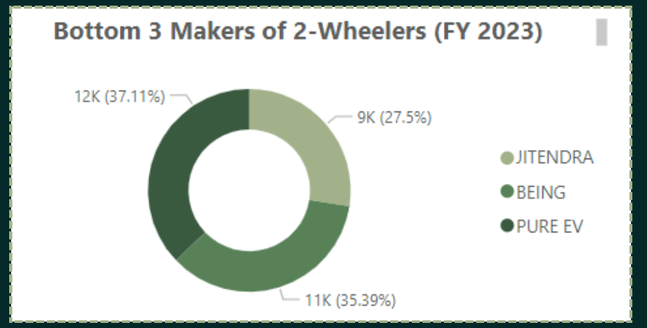
**Consistent Leadership by OLA ELECTRIC: OLA Electric** maintained its position as the **top maker** in both FY **2023** and FY 2024, with a substantial growth in sales, increasing from **153k** units to **322k** units. This reflects a strong upward trend in consumer preference for OLA's EV models.

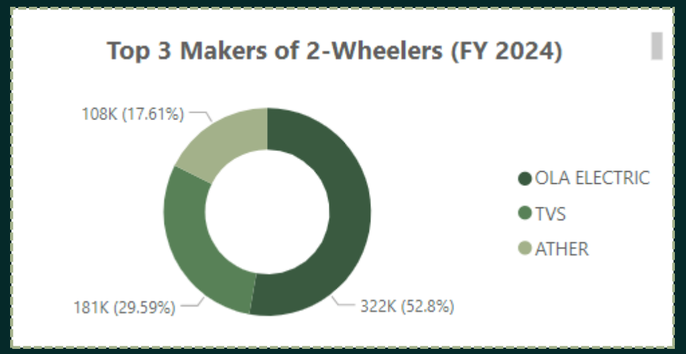
**Market Shifts Among Bottom Makers:** While smaller manufacturers like **Jitendra** and **Being** were among the **lowest sellers** in FY 2023, they were replaced by **Battre Electric**, **Revolt**, and **Kinetic Green** in FY **2024**, indicating a reshuffling among lower-tier manufacturers as some companies either improved or struggled to capture the market.

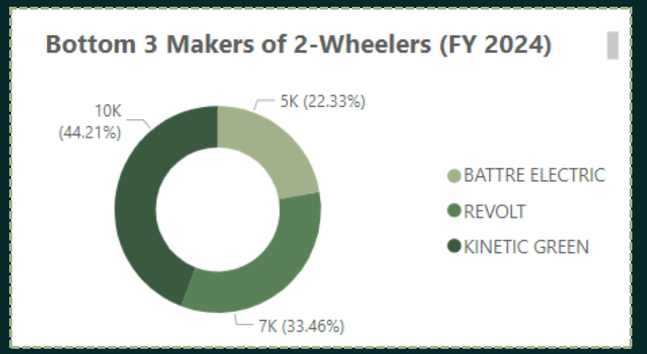
## Preliminary Question 1

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



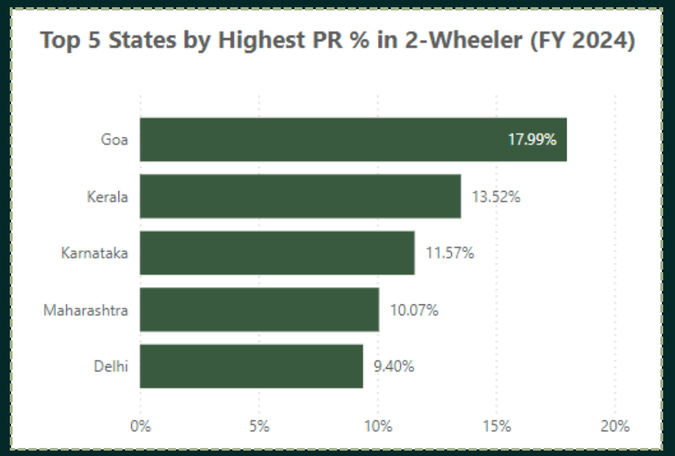
# Key Insights

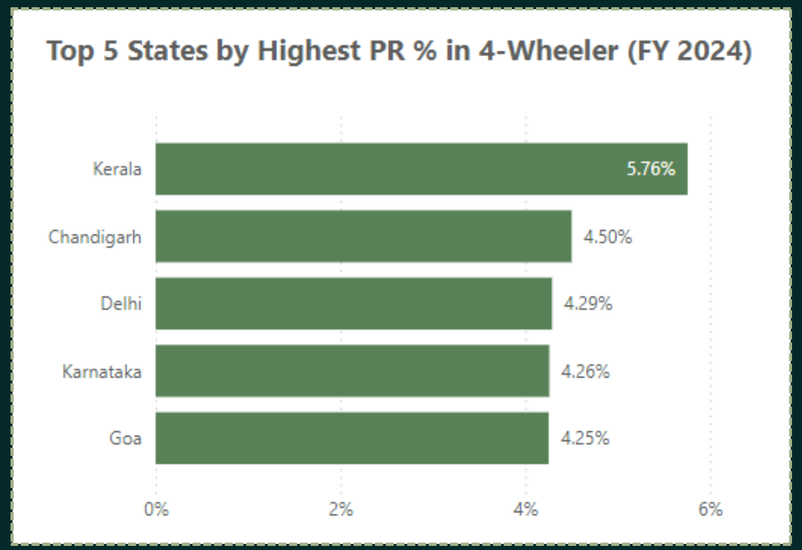
**Goa and Kerala Lead in 2-Wheeler EV Adoption**: **Goa** stands out with the **highest** penetration rate of **17.99%**, followed by **Kerala** at **13.52%,** indicating these states are at the forefront of 2-wheeler EV adoption in FY 2024.

**Kerala's Strong Position in Both Segments: Kerala** not only leads the 2-wheeler EV market but also **ranks first** in 4-wheeler EV penetration with **5.76%**, showcasing a comprehensive shift towards EVs across vehicle types in the state.

## Preliminary Question 2

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



# Key Insights

**Decline Across Multiple States:** Several states experienced a decline in EV penetration from FY 2023 to FY 2024, with **Rajasthan** showing the **largest** decrease of **0.56%**. Other states like **Haryana** and **Uttarakhand** also saw notable declines, indicating a potential slowing of EV adoption or market challenges in these regions.

**Specific Decline in Recent Years:** While **Andaman & Nicobar** Islands experienced a **decline in EV penetration** from FY 2022 to FY 2023, it was not among the states with a decline from FY 2023 to FY 2024. This indicates a potential stabilization or improvement in EV adoption in that region in the more recent year.

## Preliminary Question 3

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

**States with decline in PR % (FY 22 vs FY 23)**

| state | EV Penetration Prev yr | EV Penetration | Penetration trend |
|---|---|---|---|
| Andaman & Nicobar Island | 0.43% | 0.35% | -0.08% |
| **Total** | **0.43%** | **0.35%** | **-0.08%** |

**States with decline in PR % (FY 23 vs FY 24)**

| state | EV Penetration Prev yr | EV Penetration | Penetration trend |
|---|---|---|---|
| Rajasthan | 5.67% | 5.11% | -0.56% |
| Haryana | 2.04% | 1.61% | -0.43% |
| Uttarakhand | 3.10% | 2.72% | -0.39% |
| Gujarat | 5.49% | 5.30% | -0.19% |
| Jharkhand | 1.73% | 1.58% | -0.15% |
| Himachal Pradesh | 1.00% | 0.90% | -0.11% |
| **Total** | **4.30%** | **3.98%** | **-0.32%** |

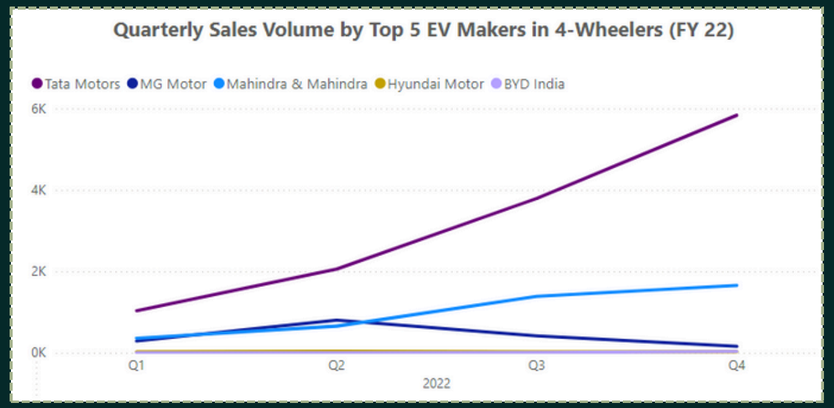
# Key Insights

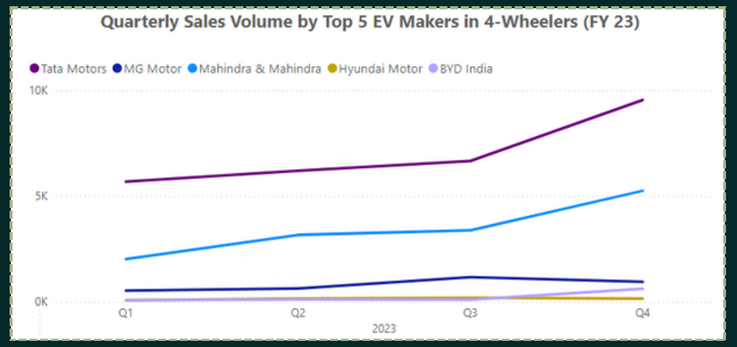
**Tata Motors' Strong Growth:** Tata Motors consistently increased its sales volume across all quarters from 2022 to 2024, culminating in a significant leap to **17,361** units in **Q4 FY 2024**. This indicates robust and sustained growth in their 4-wheeler EV sales over the period.

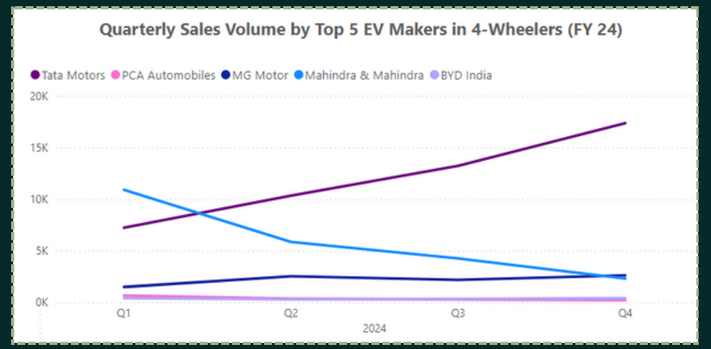
**Mahindra & Mahindra's Significant Gains:** Mahindra & Mahindra showed substantial growth from FY 2022 to FY 2024, with a notable rise in sales volume reaching **11,911 units** in **Q1 FY 2024** and maintaining high figures throughout the year. This growth suggests an effective expansion strategy and increased market acceptance of their EVs.

## Preliminary Question 4

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



# Key Insights

**Higher Sales in Karnataka:** Karnataka led in total EV sales with **160,989** units sold in **2024**, significantly outperforming Delhi, which had **46,724** units sold. This indicates a larger market for EVs in Karnataka compared to Delhi.

**Greater Penetration Rate in Karnataka:** Despite the higher sales volume, Karnataka also had a higher EV penetration rate of **10.18%** compared to Delhi's **7.71%**. This suggests that EVs have a more substantial market presence and acceptance in Karnataka relative to Delhi.

## Preliminary Question 5

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

**EV Sales & PR % Delhi vs Karnataka (FY 24)**

| State | Total EV sold by state | EV Penetration |
|---|---|---|
| Karnataka | 160989 | 10.18% |
| Delhi | 46724 | 7.71% |
| **Total** | **207713** | **9.49%** |

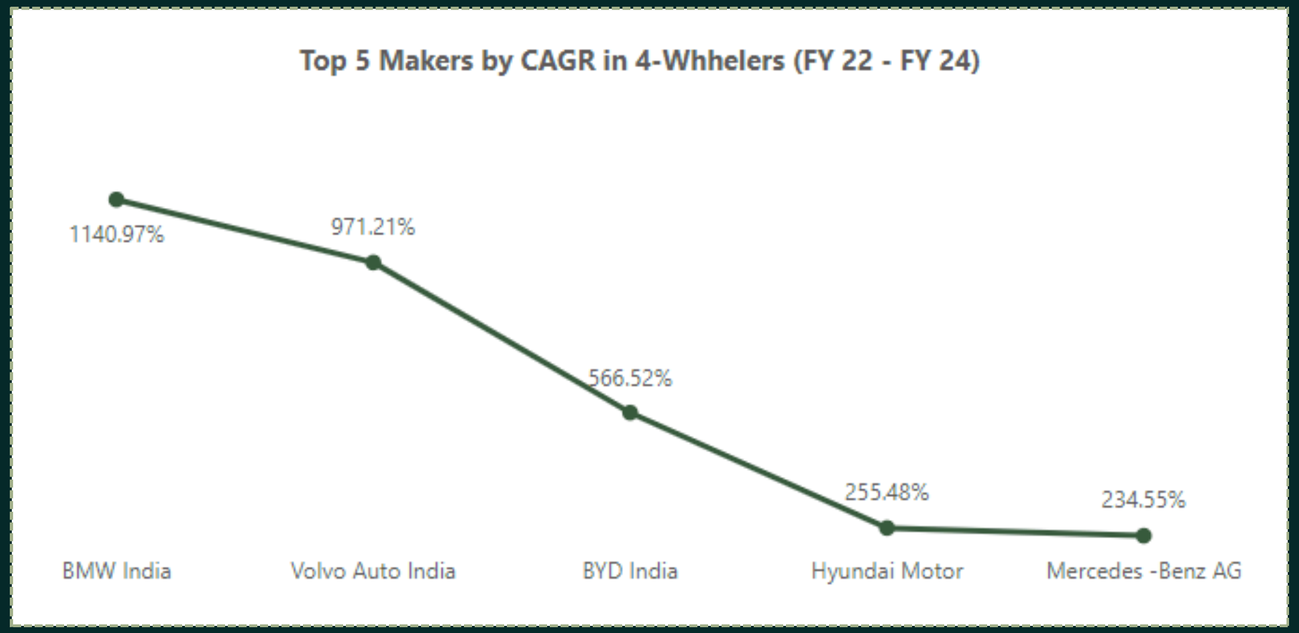
# Key Insights

**Exceptional Growth for BMW India and Volvo Auto India:** BMW India and Volvo Auto India experienced extraordinarily high compounded annual growth rates (**CAGR**) of **1140.97%** and **971.21%**, respectively, from FY 2022 to FY 2024. This dramatic growth highlights their rapid expansion and increasing market share in the 4-wheeler EV sector.

**Strong Performance from BYD India and Hyundai Motor:** BYD India and Hyundai Motor also showed significant growth with CAGRs of **566.52%** and **255.48%,** respectively. This substantial growth reflects their successful strategies in scaling up their 4-wheeler EV offerings and gaining traction in the market.

## Preliminary Question 6

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



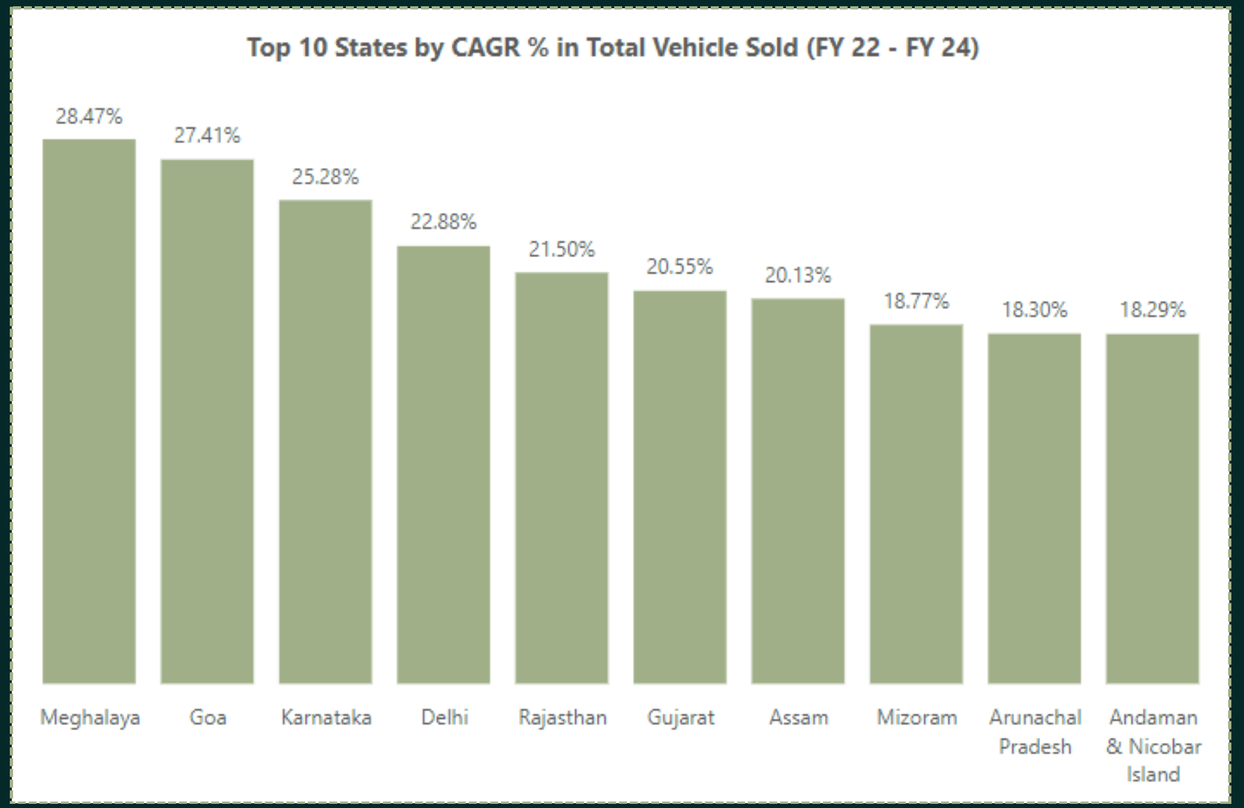
# Key Insights

**Meghalaya Leads in Growth:** Meghalaya achieved the highest CAGR of **28.47%** in total vehicle sales from FY 2022 to FY 2024, indicating a rapid increase in vehicle adoption in the state, potentially driven by rising demand for both EVs and traditional vehicles.

**Strong Growth in Key States:** Goa, Karnataka, and Delhi followed closely with CAGRs above **20%**, reflecting significant market expansion in these states. This suggests robust demand for vehicles, particularly EVs, as these regions are becoming major players in the adoption of electric mobility.

## Preliminary Question 7

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



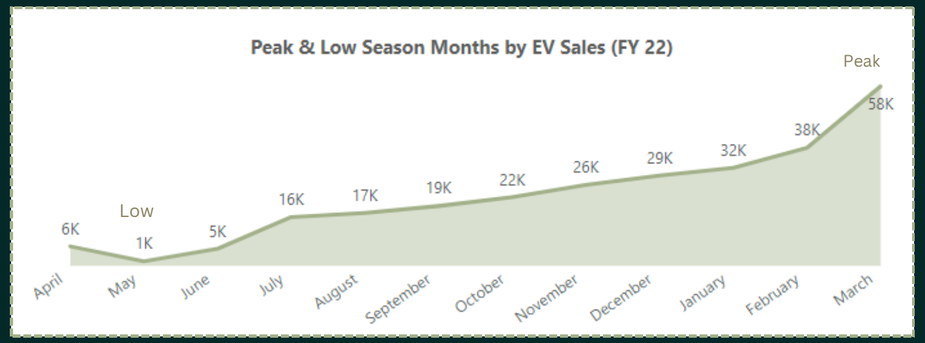
# Key Insights

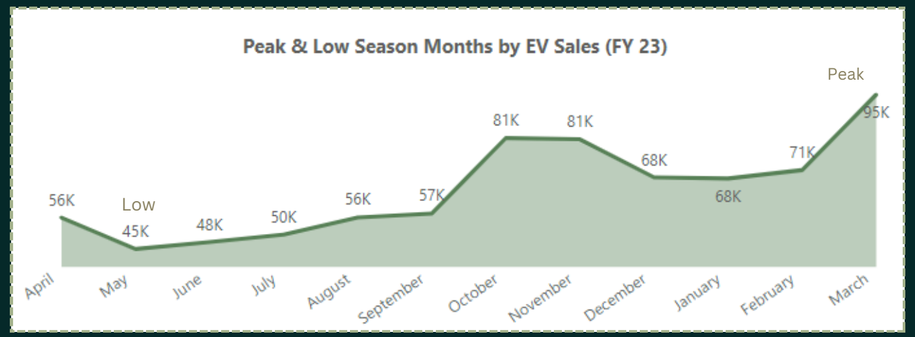
**March as the Peak Sales Month:** Across all three fiscal years (2022 to 2024), **March** consistently emerged as the **peak season** for EV sales, with the highest sales volume in FY **2024** at **0.14M** units. This trend suggests that the end of the fiscal year drives a surge in EV purchases, possibly due to consumer incentives or tax benefits.

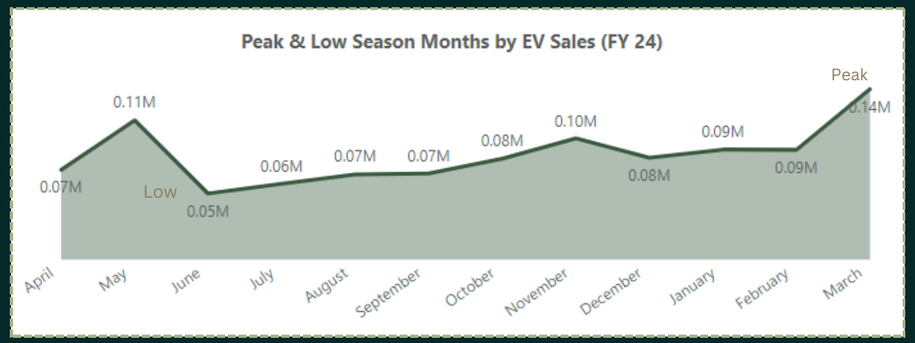
**May as a Low Season Month: May** consistently recorded **lower** sales compared to other months, with only **1k** units sold in FY **2022** and **45k** units in FY **2023**. Despite an increase to **0.11M** units in FY 2024, it still represents a relatively lower point in the annual sales cycle. This suggests a seasonal dip in EV demand during this period.

## Preliminary Question 8

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



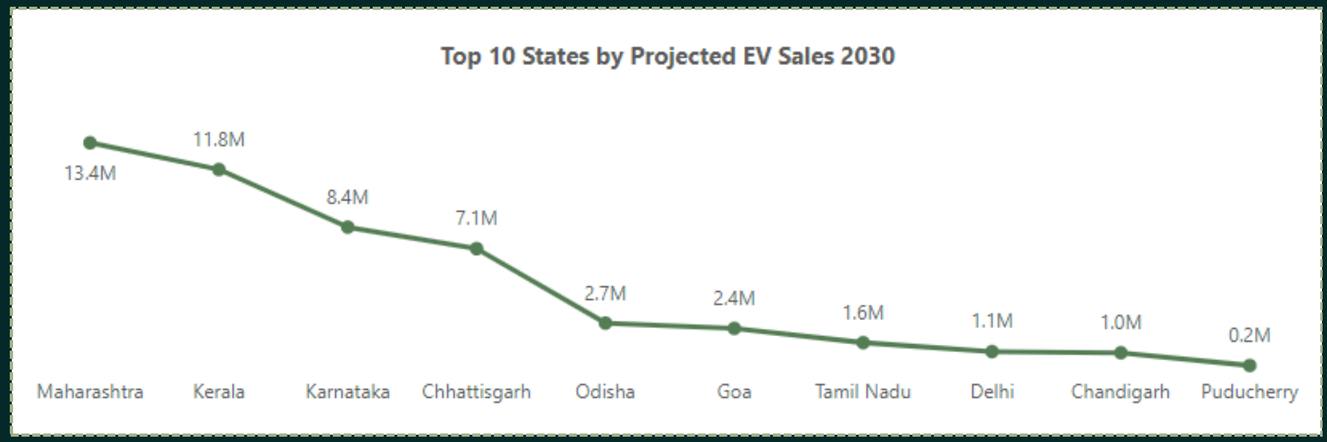
# Key Insights

**Maharashtra and Kerala as Major EV Markets:** By 2030, **Maharashtra** and **Kerala** are projected to lead in EV sales, with estimated figures of **13.35 million** and **11.78 million** units, respectively. These states are expected to dominate the market, reflecting strong growth and continued adoption of EVs.

**Significant Growth in Smaller States:** Smaller states like **Goa** and **Chandigarh** are also projected to experience notable EV sales growth, with projected sales of **2.42 million** and **7.1 million** units, respectively. This highlights their rising role in contributing to India's EV landscape by 2030, despite their smaller population sizes.

## Preliminary Question 9

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?



# Key Insights

**Substantial Revenue Growth in 4-Wheelers:** From **2022 to 2024**, 4-wheeler EVs saw a remarkable revenue growth of **367.79%**, far surpassing the growth in 2-wheelers (**269.28%**). Even from **2023 to 2024**, the revenue growth for 4-wheelers was significant at **83.08%**, indicating a stronger market momentum in the higher-value 4-wheeler segment.

**Steady but Slower Growth in 2-Wheelers:** While 2-wheelers experienced a robust **269.28%** revenue growth from **2022 to 2024**, the growth rate slowed to **28.13%** from **2023 to 2024.** This suggests that the 2-wheeler market may be approaching a more mature phase, compared to the rapidly growing 4-wheeler segment.

## Preliminary Question 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.

| Vehicle_category | Average Price |
|---|---|
| 2-Wheelers | ₹ 85,000.00 |
| 4-Wheelers | ₹ 15,00,000.00 |