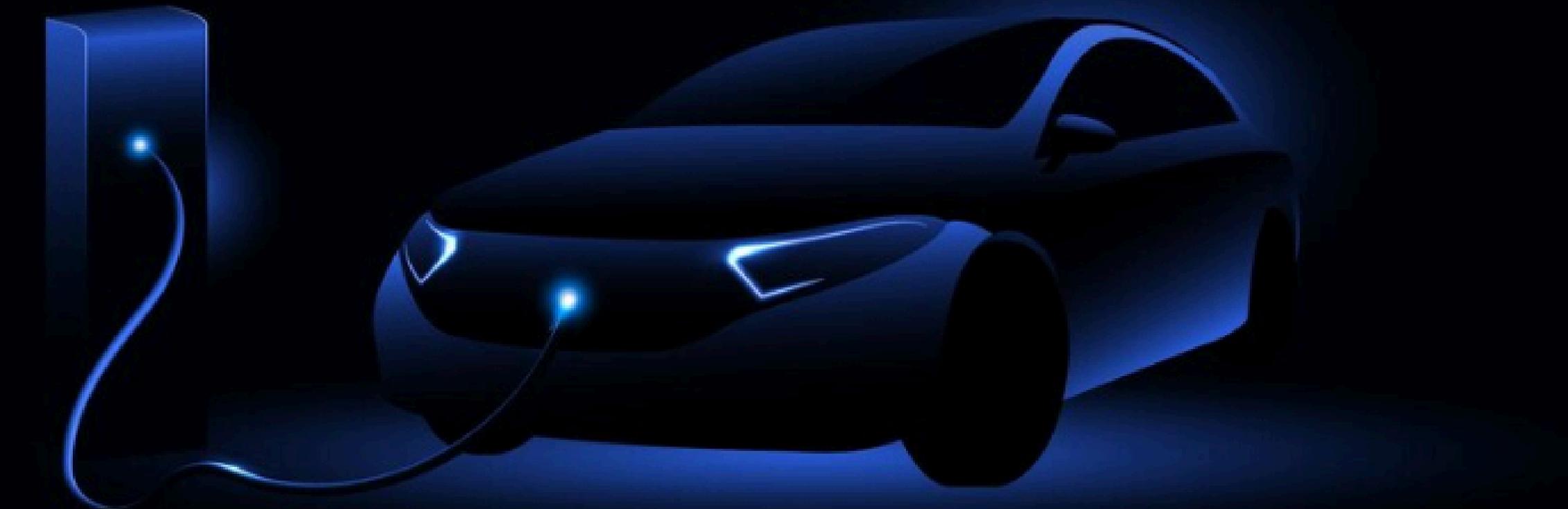




ATLIQ MOTORS

ELECTRIC VEHICLE ANALYSIS





Agenda

- About Company
- Data Overview
- Dashboard
- Primary Insights
- Secondary Insights
- Recommendations





ABOUT COMPANY



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%. 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.



DATA OVERVIEW

There are 3 tables:

- **dim_date** Table consists of date, fiscal_year and quarter columns
- **electric_vehicle_sales_by_makers** table consists of date, vehicle_category, maker, electric_vehicles_sold
- **electric_vehicle_sales_by_state** table consists of date, vehicle_category, state, electric_vehicles_sold and total_vehicles_sold



DASHBOARD

[Dashboard Link](#)





PRIMARY INSIGHTS

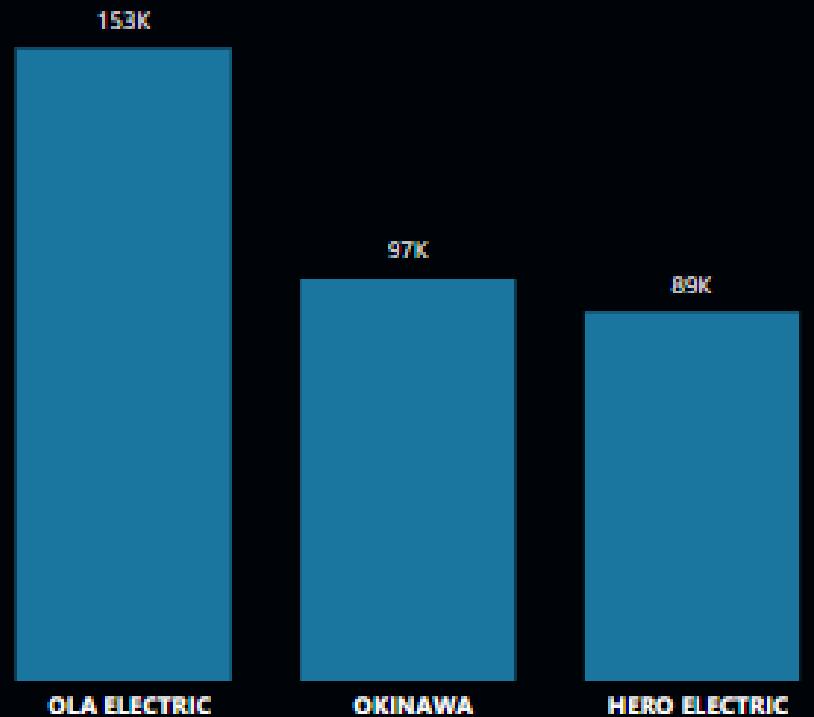




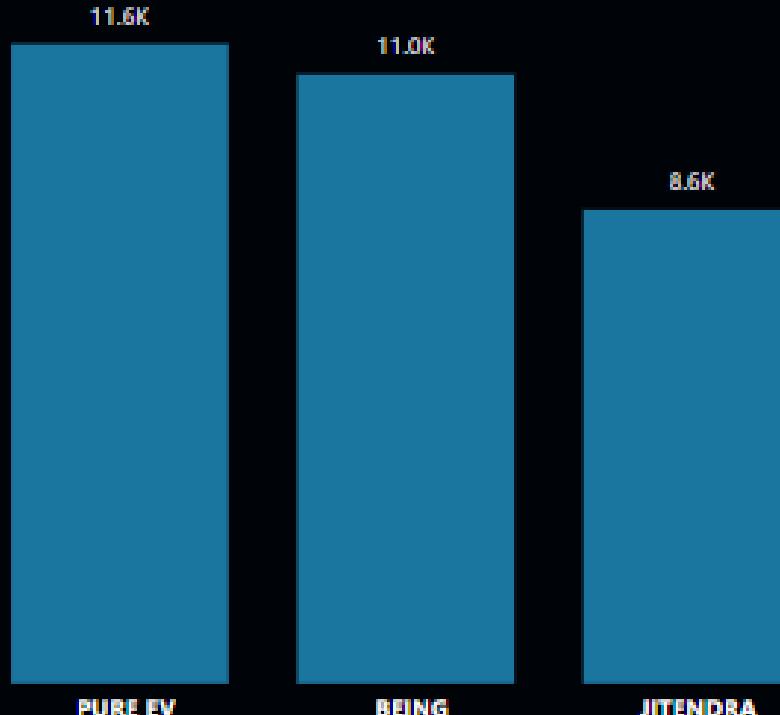
1. List the top 3 and bottom 3 makers for the fiscal years 2023 and 2024 in terms of the number of 2-wheelers sold.

Top 3 Makers for fiscal year 2023 for 2-wheelers

- **Ola Electric, Okinawa, and Hero Electric** are the top 3 manufacturers of two-wheelers in 2023.
- About **153K** electric vehicles, or 21% of all vehicles sold, have been sold by **Ola Electric** alone.
- **Hero Electric** and **Okinawa** have sold about **89K** and **97K** units, respectively, making up around 13% each.



Bottom 3 Makers for fiscal year 2023 for 2-wheelers



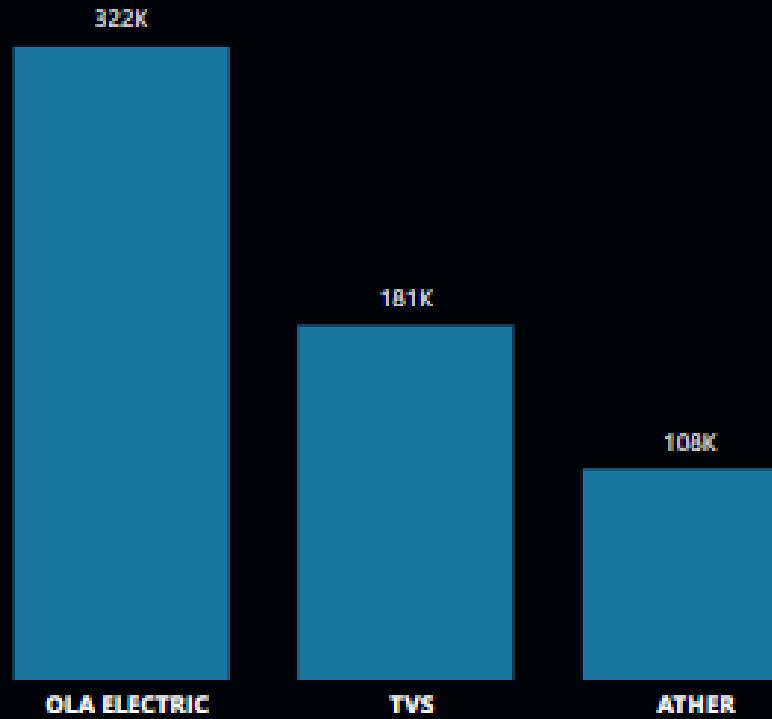
- In terms of 2-wheeler manufacturers in 2023, **Pure EV, Being, and Jitendra** are the bottom 3.
- **Being** and **Pure EV** have each sold about **11K** units, or about **1.5%** of the total each.
- **8.6K** electric cars have been sold by **Jitendra** alone.





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.

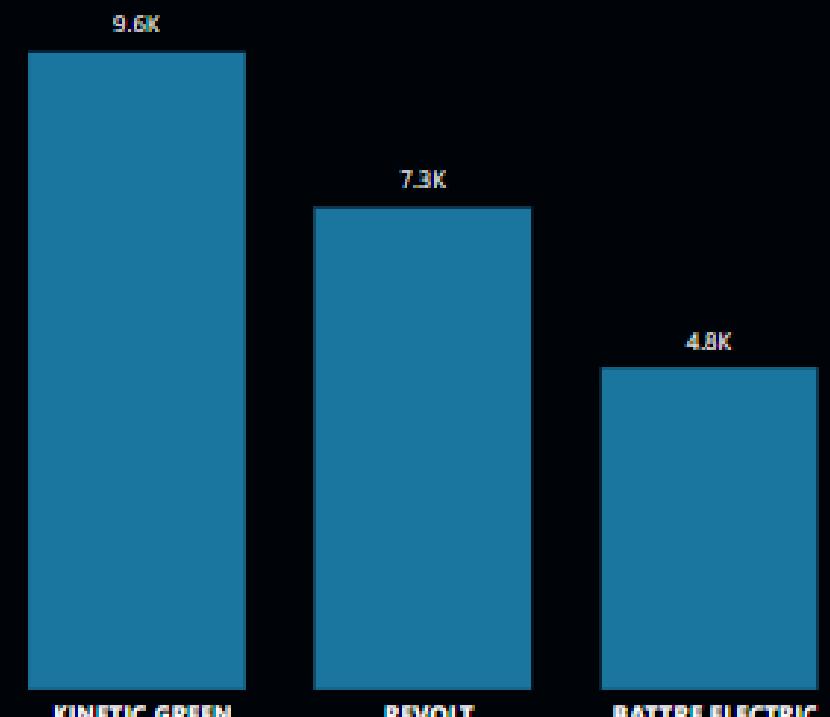
Top 3 Makers for fiscal year 2024 for 2-wheeler



- **Ola Electric, TVS, and Ather** are the top 3 manufacturers of two-wheelers in 2024.
- About **322K** electric vehicles, or **34.5%** of all vehicles sold, have been sold by **Ola Electric** alone.
- **TVS** and **Ather** have sold about **181K** and **108K** units, respectively, making up around **19%** and **11.5%**.

Bottom 3 Makers for fiscal year 2024 for 2-wheeler

- In terms of 2-wheeler manufacturers in 2024, **Kinetic Green, Revolt, and Battre Electric** are the bottom 3.
- **Kinetic Green** and **Revolt** have each sold about **9.6K** and **7.3K** electric vehicles sold.
- **4.8K** electric vehicles have been sold by **Battre Electric**.

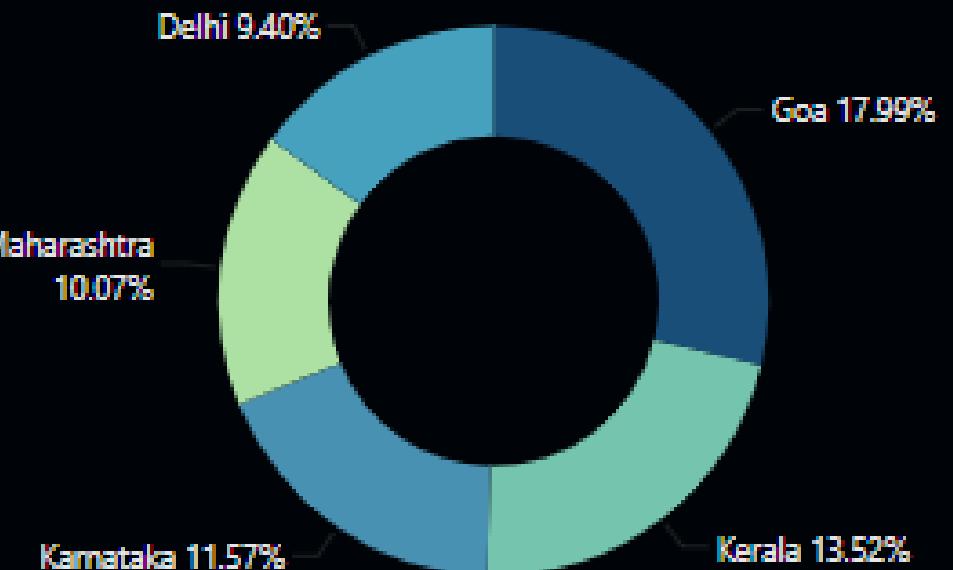




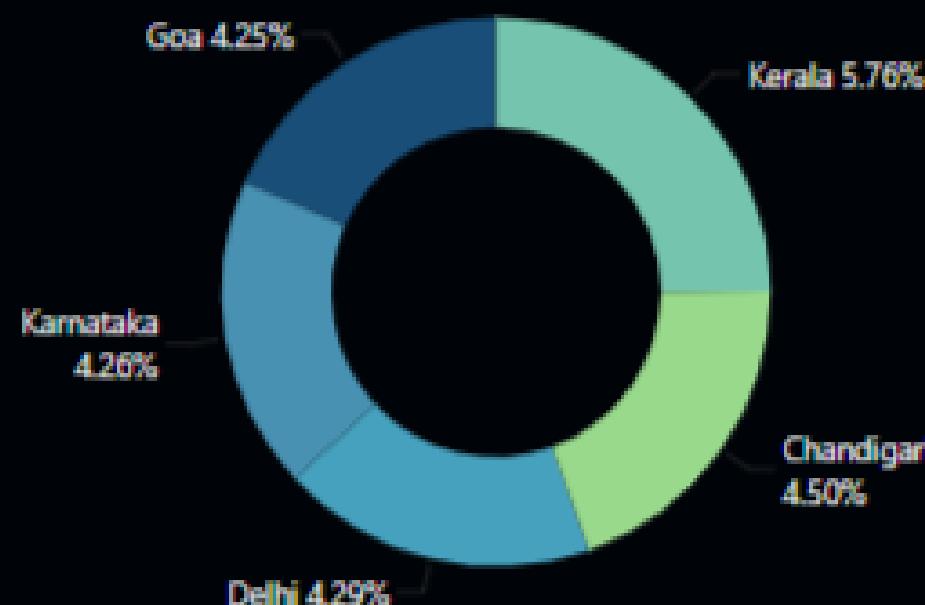
2. Identify the top 5 states with the highest penetration rate in 2-wheeler and 4-wheeler EV sales in FY 2024.

Top 5 States for fiscal year 2024 for 2-wheelers

- In 2024, **Goa, Kerala, Karnataka, Maharashtra, and Delhi** are the top 5 states for two-wheelers.
- The highest PR is **17.9%** in **Goa**, followed by **13.5%** in **Kerala** and **11.5%** in **Karnataka**.
- They are followed by **Delhi** and **Maharashtra**, with **10%** and **9.5%** respectively.



Top 5 States for fiscal year 2024 for 4-wheelers



- **Kerala, Chandigarh, Delhi, Karnataka, and Goa** are the top 5 states for four-wheelers in 2024.
- The highest Penetration Rate, at **5.7%**, is found in **Kerala**.
- The penetration rates of **Chandigarh, Delhi, Karnataka, and Goa** are approximately **4.2%** each.





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

States with decline in PR from 2022 to 2024 for 2-wheelers

Ladakh -0.41%

States with decline in PR from 2022 to 2024 for 4-wheelers

Andaman & Nicobar Island -1.11%

- The penetration rate of two-wheelers in **Ladakh** is expected to fall by **0.41%** in 2024 for 2 wheelers.
- The penetration rate was 4.06% in 2022 compared to 4.48% in 2022.
- There is a **1.11%** decrease in the penetration rate of four-wheelers in **Andaman and Nicobar Island** in 2024.
- The penetration rate was 1.88% in 2022 but dropped to 0.77% in 2022, an almost 59% decrease.

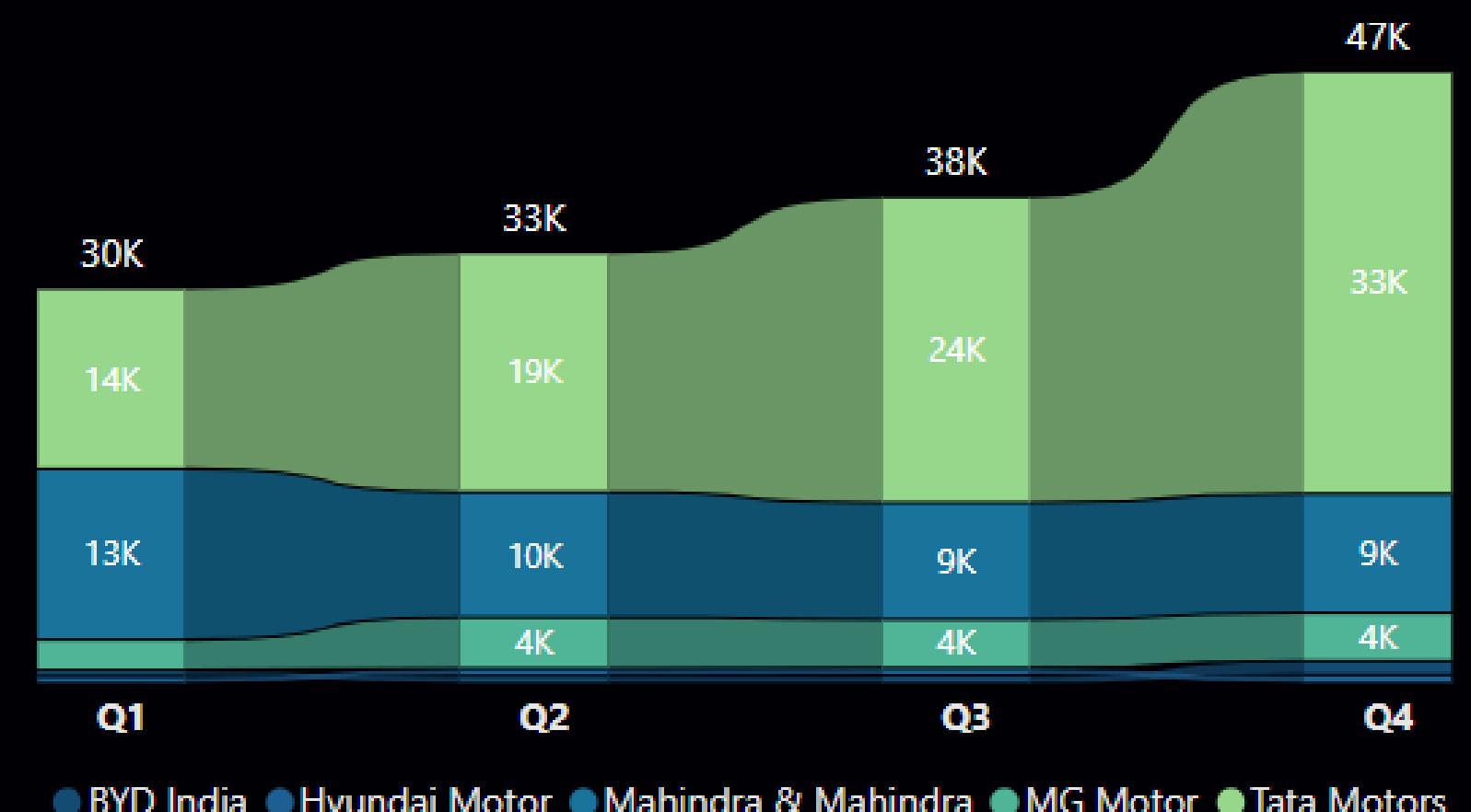




4. What are the quarterly trends based on sales volume for the top 5 EV makers (4-wheelers) from 2022 to 2024?

- Sales are highest in Q4 compared to all other quarters, and lowest in Q1.
- Every quarter, sales at **Tata Motors** increase significantly, and the company **leads** in every quarter.
- Although **Mahindra & Mahindra** consistently has the second-highest sales each quarter, these sales are gradually **declining**.
- From Q1 to Q2, **MG Motors'** sales rose, but they eventually fell.
- Out of the top 5 manufacturers, **BYD India** and **Hyundai Motor** have consistently sold the fewest units.

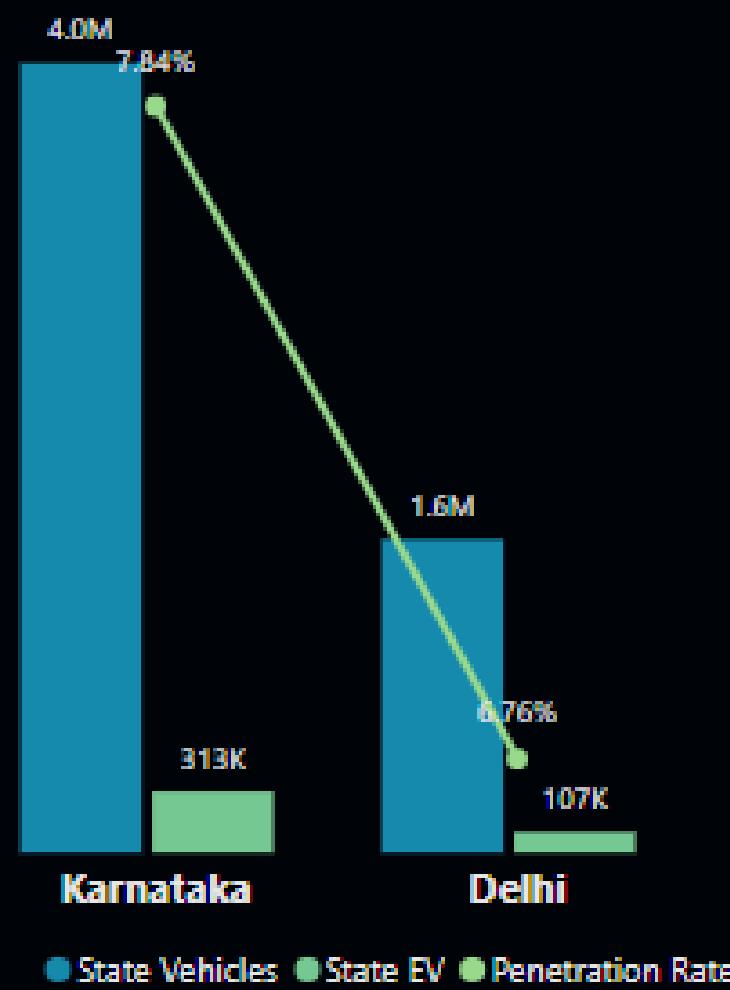
Quarterly trends for top 5 Makers from 2022 to 2024 for 4-wheelers





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

Karnataka and Delhi Performance



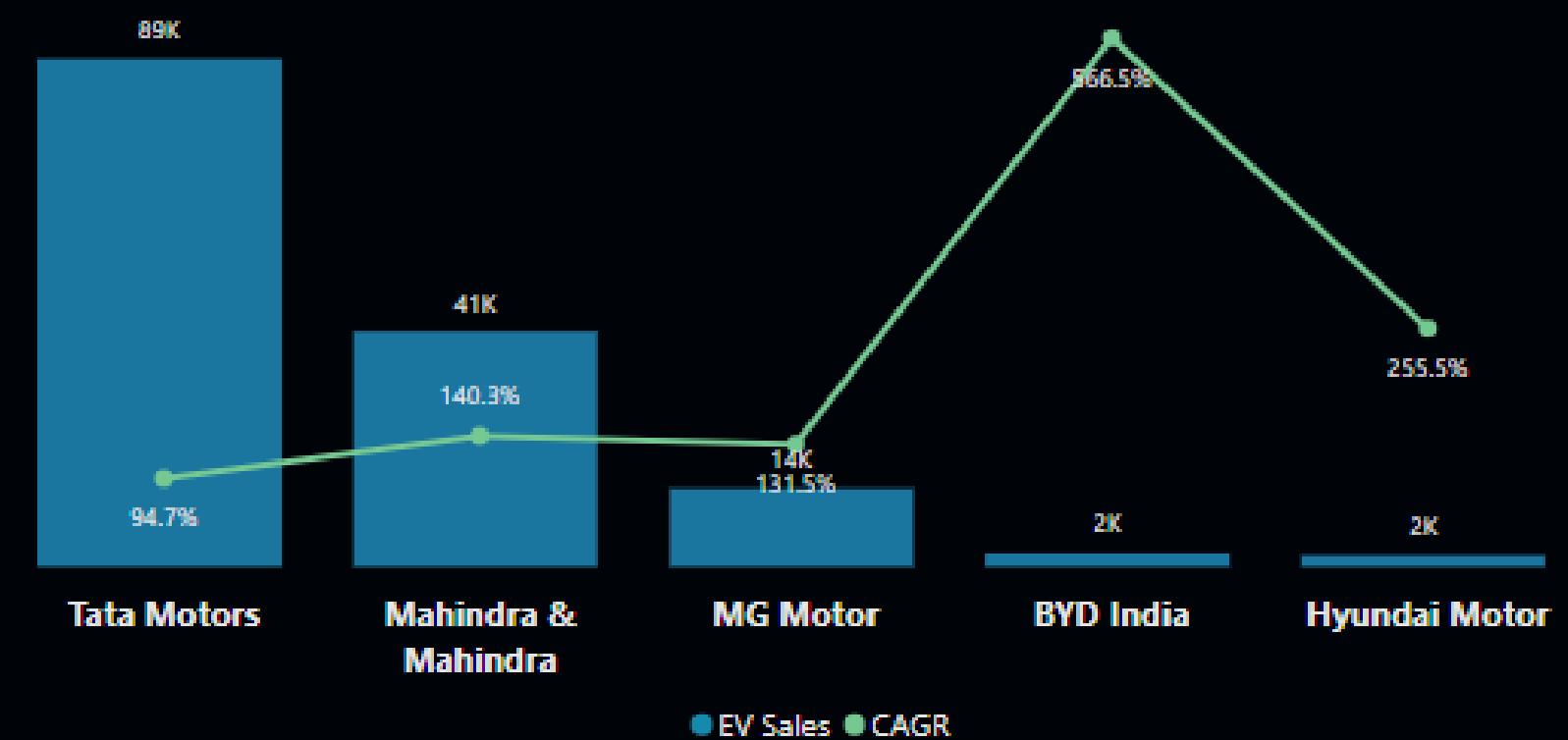
- In terms of total vehicles, electric vehicles sold and penetration rate of electric vehicles, Karnataka leads.
- **Delhi** has barely sold **1.6M** vehicles overall, compared to **Karnataka's** about **4M** sales.
- Regarding electric vehicles, **Delhi** sells **107K** of them, whereas **Karnataka** sells **313K**.
- However, the penetration rates in the two states are nearly equal. **Delhi** has a **6.86%** penetration rate, whereas **Karnataka** has a **7.84%** rate.



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

- **Tata Motors (89K), Mahindra & Mahindra (41K), MG Motor (14K), BYD India (2K), and Hyundai Motor (2K)** are the top 5 manufacturers of four-wheelers from 2022 to 2024.
- It appears that sales will rise significantly from 2022 to 2024, despite **BYD India's** ranking of 4. It has the greatest CAGR of any company, at **566%**. **Hyundai Motor** has the second-highest CAGR of any company, at **255%**.
- The company with the largest sales, **Tata Motors**, has the lowest CAGR of **95%**. **MG Motor** and **Mahindra & Mahindra**, with corresponding percentages of **131%** and **140%**.

Top 5 Makers Compound Annual Growth Rate(CAGR) from 2022 to 2024 for 4 wheelers

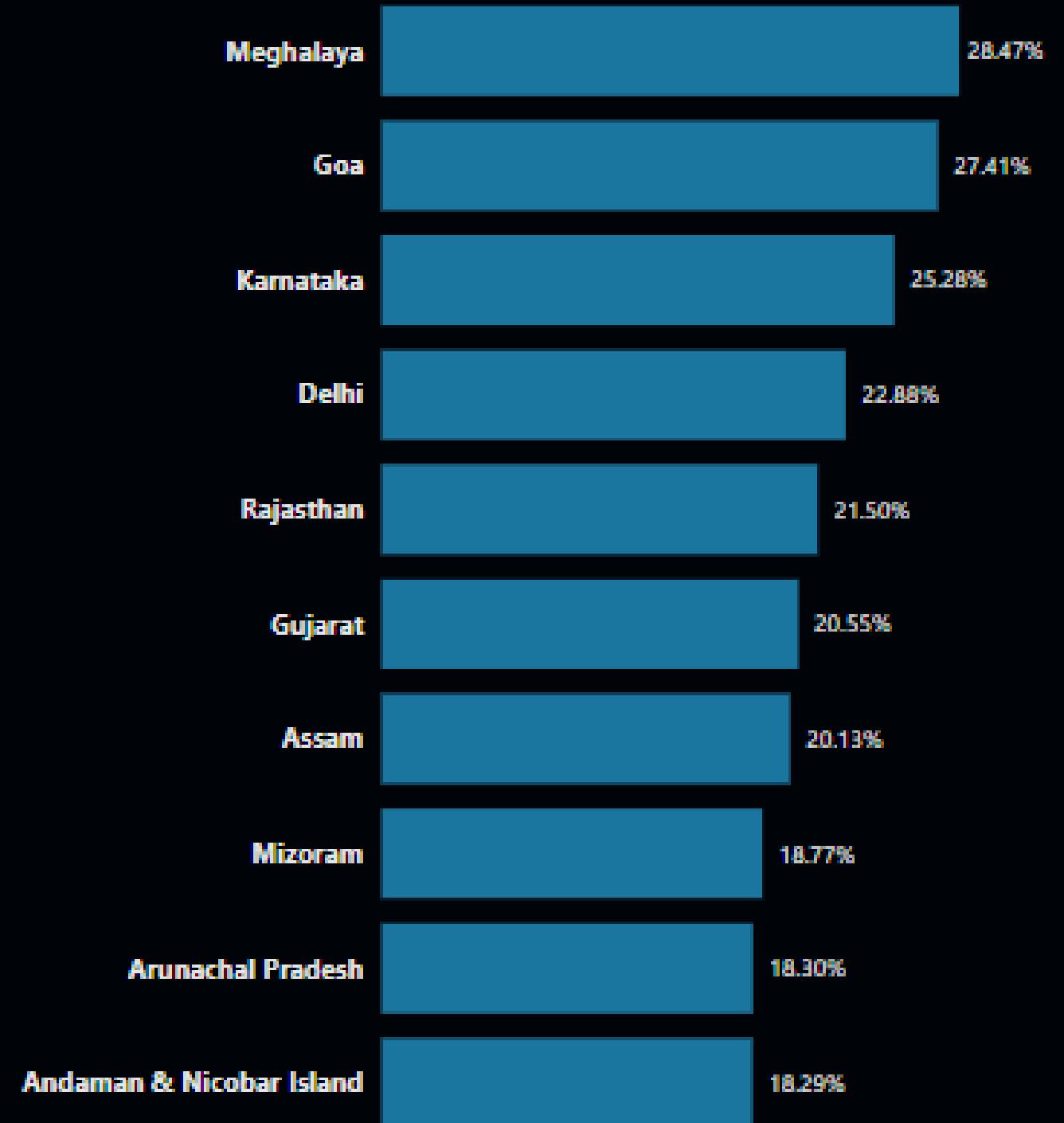




7. List down the top 10 states that had the highest compounded annual growth rate (CAGR) from 2022 to 2024 in total vehicles sold.

- **Meghalaya** has had the fastest rate of growth in total vehicles—about **28.5%**—followed by **Goa (27.4%)** and **Karnataka (25.3%)**.
- **Rajasthan** and **Delhi** have respective CAGRs of **21.5%** and **22.9%**.
- The total vehicle CAGR in **Gujarat** and **Assam** is almost **20%** each.
- The CAGR for **Mizoram**, **Arunachal Pradesh**, and the **Andaman and Nicobar Islands** is approximately **18%**.

Top 10 States based on Compound Annual Growth Rate(CAGR) from 2022 to 2024

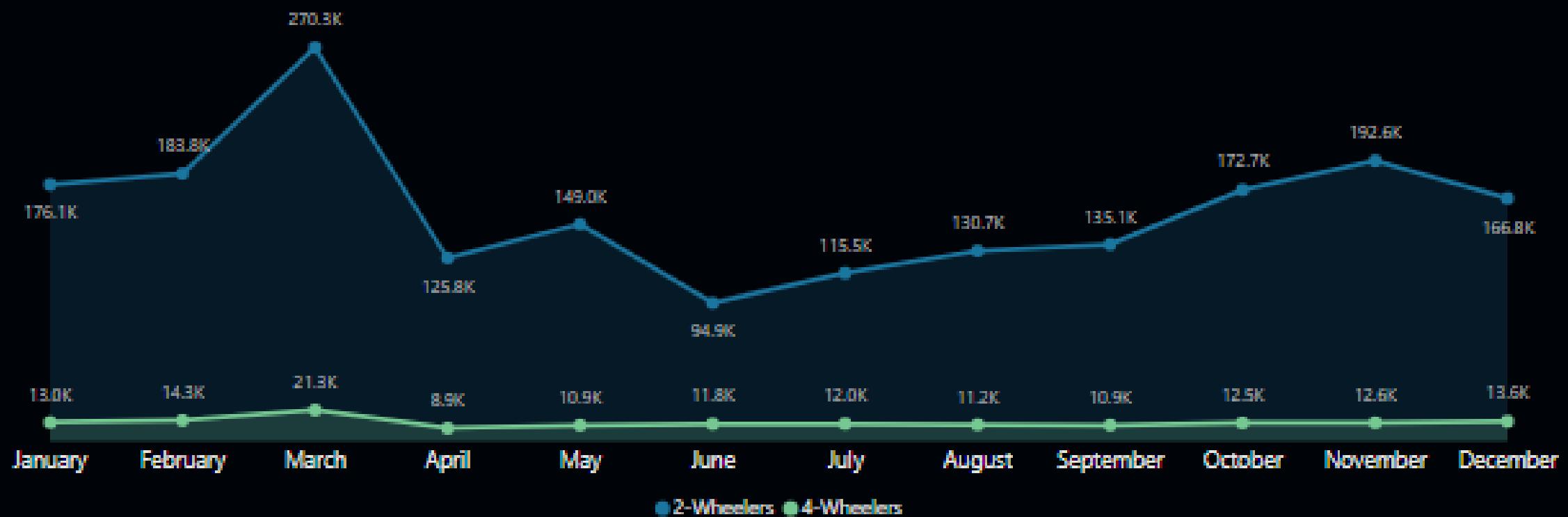




8. What are the peak and low season months for EV sales based on the data from 2022 to 2024?

- In comparison, sales of two-wheelers are higher than those of four-wheelers.
- Sales in both categories have peaked in **March**. **21K** sales for four-wheelers and **270K** sales for two-wheelers
- For two-wheelers **193K** and **184K** EVs were sold in November and February, respectively.
- Two-wheeler sales are lowest in **June** and **July**, at **95K** and **115K** respectively.
- **February** and **December** both saw **14K** EVs sold for four-wheelers.
- With **8K** and **11K** sales, **April** and **May** have the lowest sales of 4 wheelers.

EV Sales over Months from 2022 to 2024





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?

- **Goa (9.8%), Karnataka (7.8%), Delhi (6.8%), Kerala (6.6%), Maharashtra (6.5%), Odisha (4.6%), Rajasthan (4.5%), Gujarat (4.4%), Tamil Nadu (4.3%), and Chandigarh (4.0%)** are the top 10 states in terms of penetration rate.
- With 396K EVs sold, **Maharashtra** has the highest predicted sales of **13.35M** by 2030.
- **Kerala** has only sold 137K EVs, despite having the second-highest expected sales of **11.78M**. **Karnataka**, which has the second-highest EV sales, is only expected to sell **8.38M**.
- Despite having the high PR, **Goa's** estimated sales are only **2.42M**, with EV sales of barely 20K.

Projected sales in 2030 for Top 10 States based on Penetration rate

state	Penetration Rate	EV Sold	Projected Sales in 2030
Maharashtra	6.49%	396K	13.35M
Kerala	6.64%	137K	11.78M
Gujarat	4.40%	181K	8.65M
Karnataka	7.84%	313K	8.38M
Odisha	4.63%	78K	2.73M
Goa	9.84%	20K	2.42M
Rajasthan	4.55%	150K	2.40M
Tamil Nadu	4.30%	200K	1.58M
Delhi	6.76%	107K	1.05M
Chandigarh	4.04%	5K	0.99M
Total	5.70%	1588K	40.26M

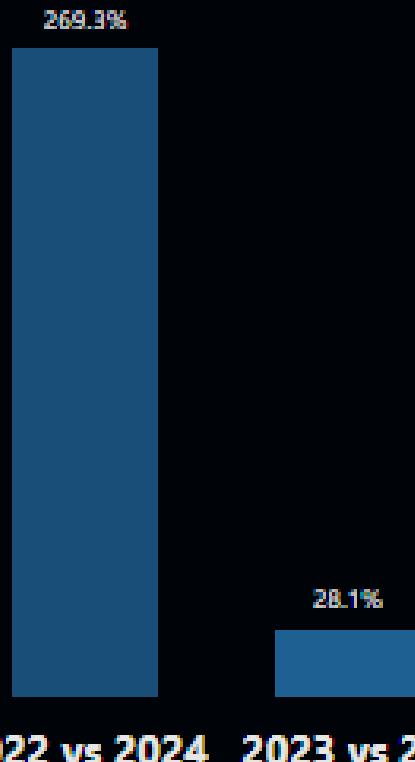




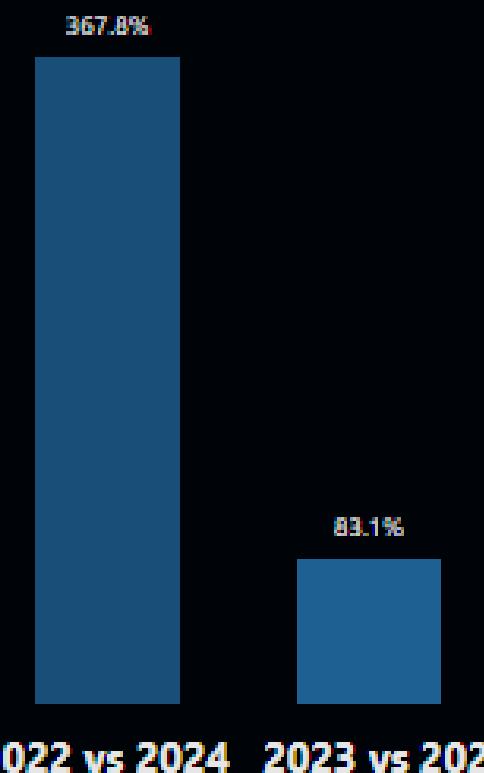
10. Estimate the revenue growth rate of 4-wheeler and 2-wheelers EVs in India for 2022 vs 2024 and 2023 vs 2024, assuming an average unit price

Comparison of Revenue Growth rate for 2 wheelers

- A two-wheeler typically costs **85K** rupees.
- The growth rate has increased by **269%** between 2022 and 2024, compared to a roughly **28%** increase between 2023 and 2024.



Comparison of Revenue Growth rate for 4 wheelers



- A two-wheeler typically costs **1.5M** rupees.
- In contrast, there has been a **367.8%** increase in growth rate between 2022 and 2024, and around **87%** increase between 2023 and 2024.
- The growth rate of 4 wheelers has exceeded that of 2 wheelers.





SECONDARY INSIGHTS





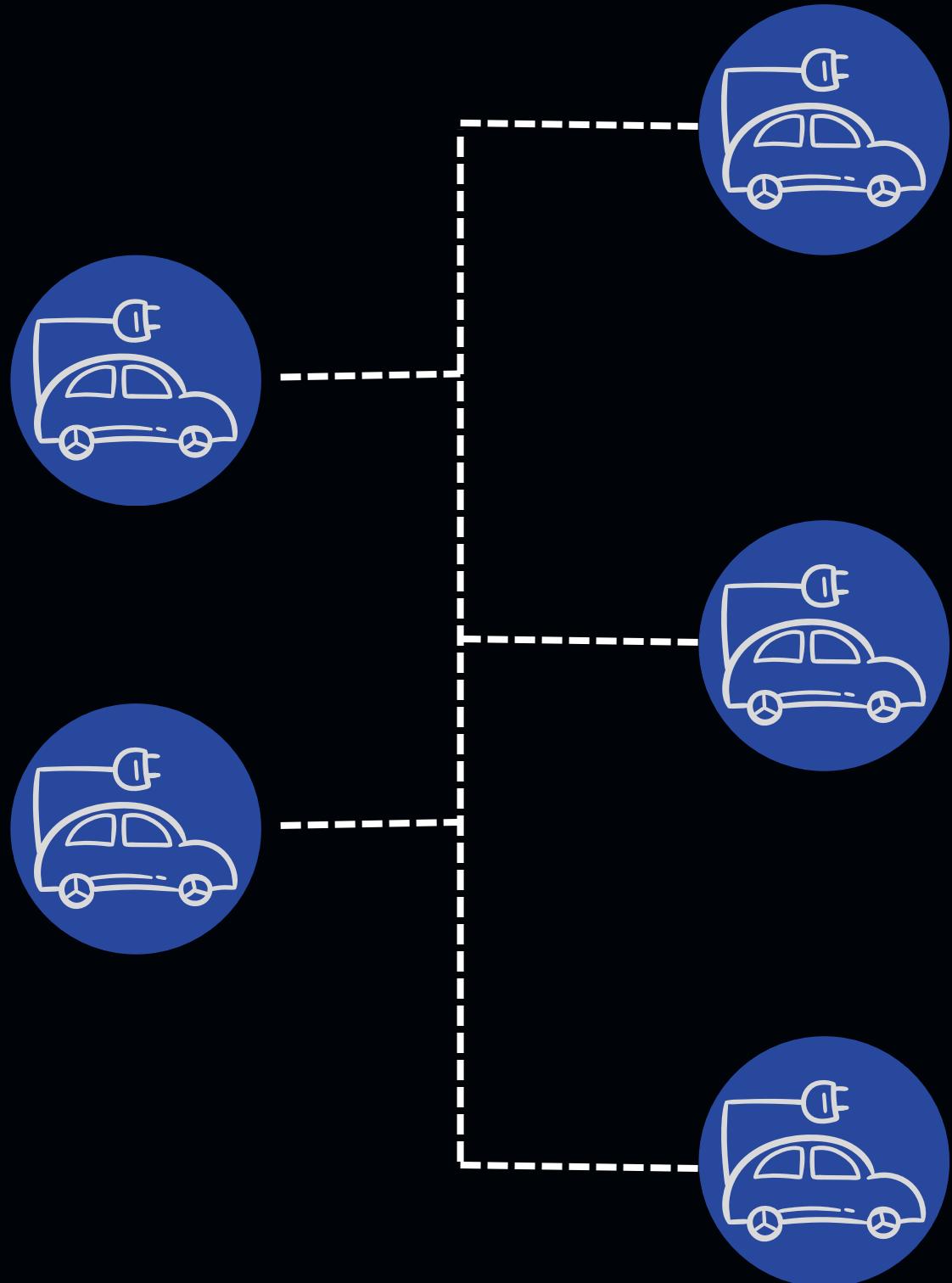
1. What are the primary reasons for customers choosing 4-wheeler EVs in 2023 and 2024 (cost savings, environmental concerns, government incentives)?

Cost Savings

Despite higher upfront costs, EVs save money long-term due to lower fuel and maintenance costs.

Government Incentives

The Indian government's FAME scheme offers financial incentives, making EVs more affordable and accessible.



Environmentally Friendly

EVs produce zero emissions, reducing air pollution and greenhouse gases, which appeals to eco-conscious consumers.

Convenient Charging

Expanding charging infrastructure and advancements in fast and wireless charging make recharging EVs easier.

Enhanced Driving Experience

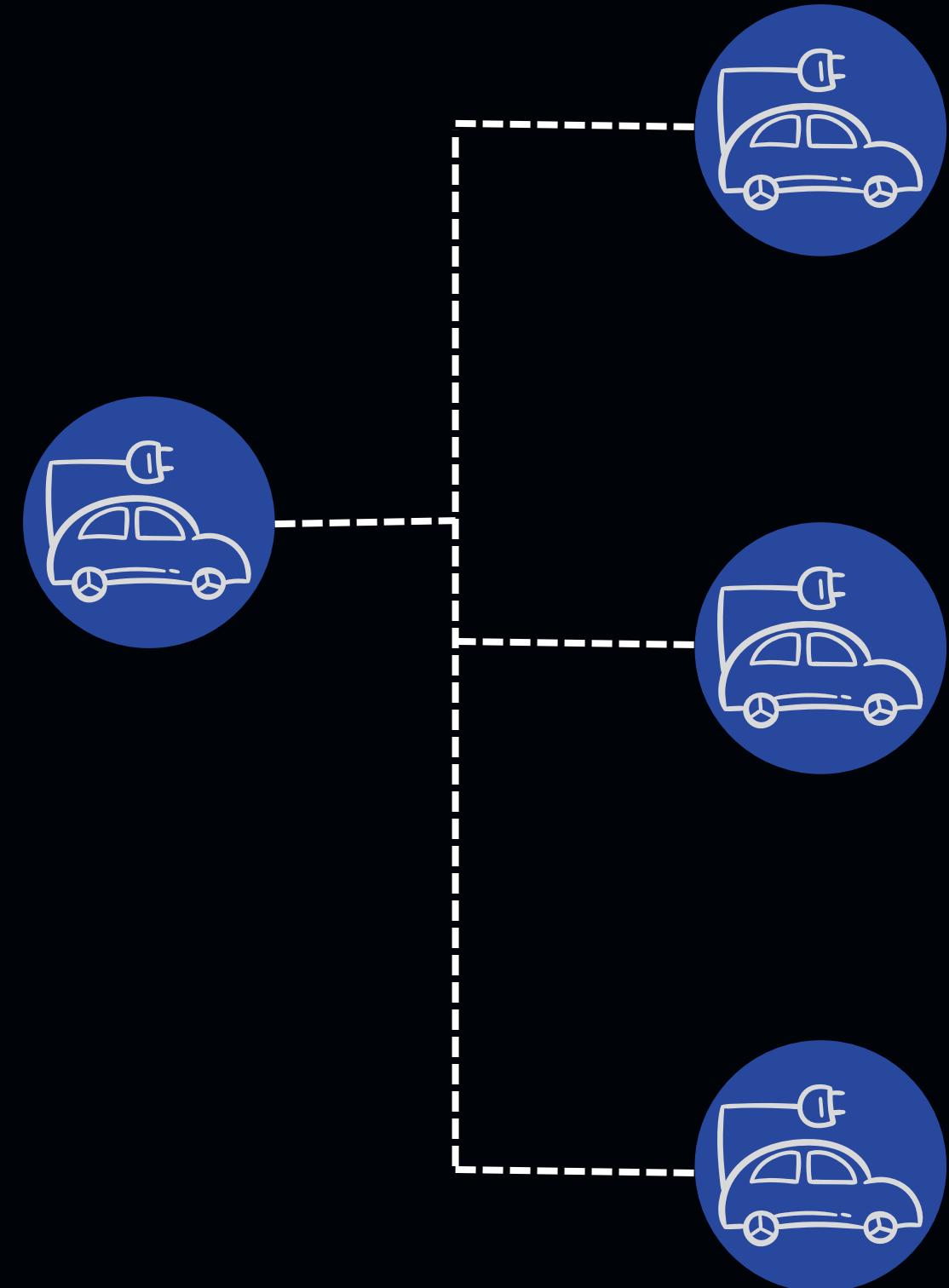
EVs provide a quiet, smooth, and responsive drive due to instant torque and fewer mechanical components.





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

Advancements in Battery Technology
Improved battery technology is reducing costs and charging times, making EVs more practical for everyday use.



Reduced Oil Dependence

EVs help decrease reliance on imported oil, improving national energy security and reducing the trade deficit.

Reduced Noise and Air Pollution

EVs are quieter and help improve urban air quality by reducing pollutants.

Future-Proof

Adopting EVs aligns with global trends toward sustainability and prepares consumers for a future with cleaner transportation.





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

FAME, or **Faster Adoption and Manufacturing of (Hybrid and) Electric vehicles**, is currently India's flagship scheme for promoting electric mobility. Currently in its 2nd phase of implementation, FAME-II is being implemented for a period of 3 years, eff. 1st April 2019 with a budget allocation of 10,000 Cr.

- **Two-Wheelers:** The FAME II scheme allocated substantial subsidies for electric two-wheelers, which resulted in high adoption rates. The scheme aimed to support 1.55 million electric two-wheelers, achieving about 75% of this target. This was largely due to purchase subsidies that reduced the upfront cost of EVs, making them more affordable to the general public.
- **Four-Wheelers:** The impact on electric four-wheelers has been less pronounced, with only about 55% of the targeted number of vehicles being supported under FAME II. This lower adoption rate is attributed to the higher cost of electric four-wheelers, despite the subsidies, and limited consumer financing options.





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

State-Wise FAME Subsidies

The FAME scheme operates on both a national and state level, with specific incentives varying by region. The table below outlines the subsidies offered in different states:

State	Subsidy (per kWh)	Maximum Subsidy	Road Tax Exemption
Gujarat	Rs.10,000	Rs.20,000	50%
Maharashtra	Rs.5,000	Rs.25,000	100%
West Bengal	Rs.10,000	Rs.20,000	100%
Bihar*	Rs.10,000	Rs.20,000	100%
Rajasthan	Rs.2,500	Rs.10,000	NA
Meghalaya	Rs.10,000	Rs.20,000	100%
Assam	Rs.10,000	Rs.20,000	100%
Other States	Various	Various	Up to 100%



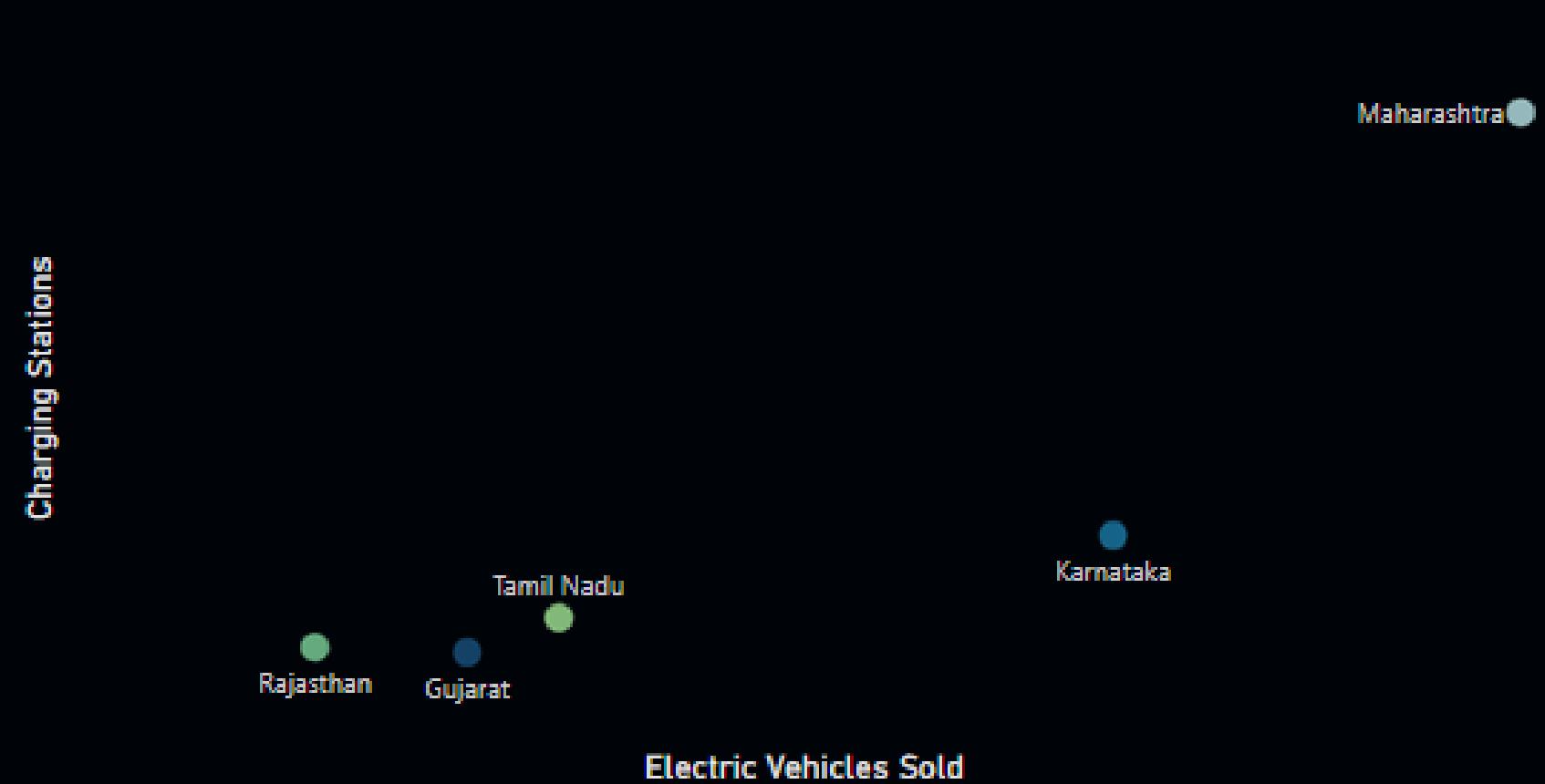


3. How does the availability of charging stations infrastructure correlate with the EV sales and penetration rates in the top 5 states?

- The correlation coefficient between electric vehicles sold and the charging stations is **0.84**.
- It suggests that the two variables have a **strong positive linear relationship**. The number of charging stations could rise, which would boost EV sales.
- Maharashtra** has the most EV sales (**396K**) and charging stations (**3079**) out of the top 5 states. **Karnataka** comes in second with **1041** stations and **313K** sales.
- Rajasthan** has sold **150K** EVs with **500** stations, whereas **Gujarat** has sold **181K** EVs despite having just **476** stations.



Correlation between Electric Vehicles Sold and Charging Stations for Top 5 States



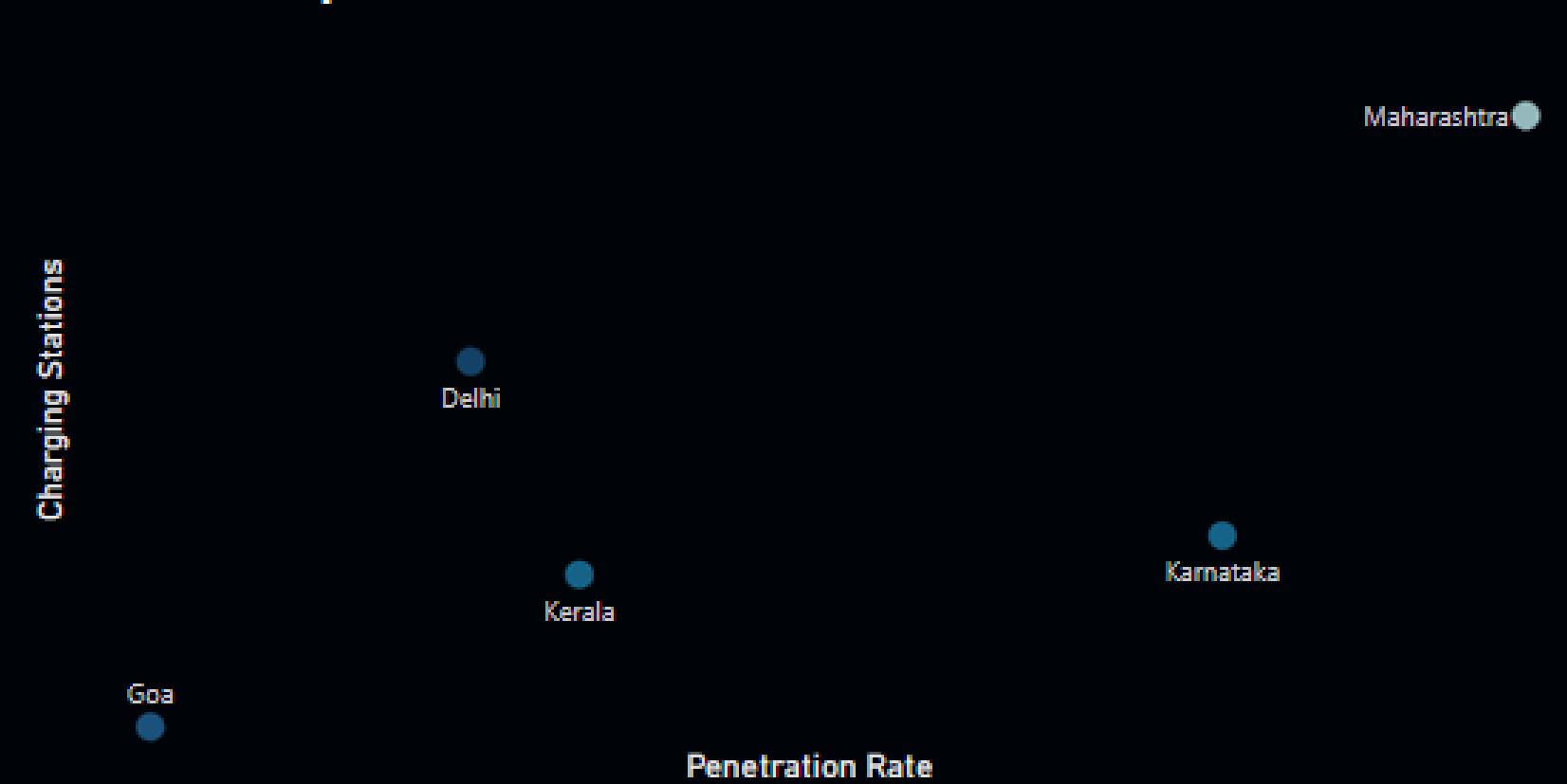
State	Charging Stations	EV Sold
Gujarat	476	181K
Karnataka	1041	313K
Maharashtra	3079	396K
Rajasthan	500	150K
Tamil Nadu	643	200K
Total	1148	1241K



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

- The charging stations and penetration rate have a **0.56** correlation coefficient.
- It suggests that the two variables have a **somewhat positive linear** connection. There is a chance that changes in one variable will influence changes in the other.
- Of the five states ranked highest in terms of penetration rate, **Maharashtra** has the most charging stations (**3079**), but its PR is just **6.49%**, and **Goa's** PR is **9.84%**, despite having only **113** charging stations.
- Delhi** has the second-highest number of charging stations (**1886**) at **6.76%**, while **Karnataka** has the second-highest PR at **7.84%** with **1041** stations.

Correlation between Penetration Rate and Charging Stations for Top 5 States



State	Charging Stations	Penetration Rate
Delhi	1886	6.76%
Goa	113	9.84%
Karnataka	1041	7.84%
Kerala	852	6.64%
Maharashtra	3079	6.49%
Total	1394	6.98%





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



Samantha Ruth Prabhu

Samantha Ruth Prabhu would be an excellent brand ambassador for AtliQ Motors' EV/hybrid vehicles because she has a strong appeal across India, especially in South India, and is widely recognized for her advocacy of environmental sustainability, which aligns well with the eco-friendly nature of electric vehicles. Her modern, progressive image and large social media following make her relatable to younger, environmentally conscious consumers who are key targets for EV adoption. Additionally, her versatile acting career and genuine persona lend credibility and trust to the brand, making her an ideal choice to represent AtliQ Motors as it seeks to establish a modern and sustainable image in the competitive EV market.





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

Karnataka is a highly attractive destination for electric vehicle (EV) manufacturing in India due to its strong government support, technological ecosystem, strategic location, infrastructure, business environment, and sustainability focus.

1. Government Incentives: Karnataka was the first state in India to introduce a comprehensive Electric Vehicle and Energy Storage Policy in 2017. The policy offers substantial incentives such as capital subsidies, tax exemptions, and research and development (R&D) support for EV technology. These incentives lower both the initial setup and operational costs for manufacturers, making Karnataka a financially viable option for EV production.

2. Technological and Industrial Hub: Bengaluru, Karnataka's capital, is known as India's technology hub, boasting a rich ecosystem of IT companies, startups, and research institutions. This environment provides a highly skilled workforce with expertise in areas critical to EV manufacturing, such as electronics, software development, and engineering. The presence of numerous automotive startups and established companies fosters a culture of innovation and collaboration, essential for advancing EV technology.





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

3. Strategic Location and Infrastructure: Karnataka's strategic location in South India, combined with its robust infrastructure, makes it ideal for EV manufacturing. The state has a well-developed transportation network, including extensive roadways, railways, and access to the New Mangalore Port, facilitating efficient logistics and distribution. Karnataka also offers multiple Special Economic Zones (SEZs) and industrial parks, providing ready infrastructure and financial incentives for manufacturers.

4. Supportive Business Environment: Karnataka ranks highly in the ease of doing business index in India, thanks to its streamlined regulatory processes and investor-friendly policies. The state provides single-window clearances for permits, reducing bureaucratic delays, and offers a stable political environment that is conducive to long-term investments.

5. Commitment to Sustainability: Karnataka leads in renewable energy production, particularly in solar and wind power, aligning with the sustainable goals of the EV industry. The state's focus on clean energy and green manufacturing practices supports the development of an environmentally friendly EV manufacturing sector.





RECOMMENDATIONS





- **Focus on High-Growth Markets and States with High EV Penetration:** AtliQ Motors should prioritize investment and marketing efforts in states with the highest projected growth rates in EV sales. These states have demonstrated strong consumer demand and a favorable regulatory environment for EV adoption. By focusing on these markets, AtliQ Motors can maximize its market penetration and sales volume.
- **Expand Product Offerings and Focus on Differentiation:** Diversify the product portfolio to cater to various customer segments, including affordable EV models for entry-level buyers and premium models for higher-end consumers. Focus on differentiation through unique features such as superior battery technology, innovative design, and enhanced connectivity options.
- **Enhance Charging Infrastructure and Promote Customer Convenience:** Strengthen the charging infrastructure by building partnerships with governments and private enterprises to expand the network of charging stations. Focus on fast charging technology and user-friendly services to reduce range anxiety and improve customer satisfaction.





- **Strengthen Marketing and Customer Education Efforts:** Invest in targeted marketing campaigns and customer education initiatives to raise awareness about the benefits of EVs and AtliQ Motors' specific offerings. Highlight the environmental impact, cost savings, and technological advancements of EVs to appeal to a broader audience.
- **Optimize After-Sales Services and Build Customer Loyalty:** Enhance after-sales support and create a customer-centric service model to build long-term loyalty and drive repeat business. Focus on providing comprehensive service packages, extended warranties, and proactive customer support.
- **Leverage Government Incentives and Collaborate with Policymakers:** Take advantage of government incentives for EV manufacturing and sales while actively engaging with policymakers to advocate for supportive policies. This can include subsidies, tax benefits, and investments in EV infrastructure.





THANK YOU



<https://www.linkedin.com/in/pavani-bachina/>