

Electric Vehicles Trends & Growth Analysis!

Insights for AtliQ Motor's!



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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 EV Manufacturers for Two-Wheelers in 2023:

- Ola Electric: 0.15M units sold
 - Okinawa: 0.10M units sold
 - Hero Electric: 0.09M units sold
- Top 3 Makers

- PURE EV : 11.56k
 - BEING : 11.02K
 - JITENDRA : 8.56k
- Bottom 3 Makers

- Top EV Manufacturers for Two-Wheelers in 2024:

- Ola Electric: 0.32M units sold
 - TVS: 0.18M units sold
 - Ather: 0.11M units sold
- Top 3 Makers

- Kinetic Green: 9.59k
 - Revolt : 7.25K
 - Battre Elec : 4.84k
- Bottom 3 Makers

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

- 2 - Wheelers
 - Goa : 17.99%
 - Kerala : 13.52%
 - Karnataka : 11.57%
 - Maharashtra : 10.07%
 - Delhi : 9.40%
- 4 – Wheelers
 - Kerala : 5.76%
 - Goa : 4.25%
 - Delhi : 4.29%
 - Chandigarh : 4.50%
 - Karnataka : 4.26%

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

□ CAGR

- BYD INDIA: 566.52%
- M&M : 140.33%
- MG Motor : 131.53%
- TATA Motor: 94.71%
- PCA Automobiles : -100.00%

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

- 2 – Wheelers

- 2022 : NA
- 2023 : Ladakh (-3.74%)
- 2024 : 1) RJ :
 - Rajasthan : -0.98%
 - Haryana : -0.84%
 - Gujrat : 0.56%
 - UK : -0.51%
 - HP : -0.28%
 - Jharkhand : -0.21%
 - Delhi : -0.12%
 - AP : -0.07%
 - J&K : -0.02%

- 4 – Wheelers

- 2022 : NA
- 2023 – Andaman & Nicobar : -1.54%
- 2024 - Ladakh : -0.43%

Comparison : Delhi Vs Karnataka: (2 – Wheelers)

- Penetration Rate (PR%) for Two-Wheelers:
 - Delhi: 9.40%, Karnataka: 11.57%
- Total EV Sales for Two-Wheelers:
 - Delhi: 38,094 units, Karnataka: 148,111 units
- Total Vehicle Sales (Two-Wheelers):
 - Delhi: 405,218 units, Karnataka: 1,279,767 units
- Operational Charging Stations (PCS) as of February 2024:
 - Delhi: 1,886, Karnataka: 1,041

❑ Key Observations:

- - Market Penetration: Karnataka has a higher market penetration rate (11.57%) compared to Delhi (9.40%).
- - EV Sales Volume: Karnataka leads in the total number of two-wheeler EV sales (148,111 units) compared to Delhi (38,094 units). Despite the higher sales volume in Karnataka, the percentage of EVs among total two-wheelers is lower in Karnataka.
- - Total Vehicle Sales: Delhi has a lower total number of two-wheelers sold (405,218) compared to Karnataka (1,279,767). This reflects that EVs make up a higher proportion of total two-wheelers in Karnataka than in Delhi.
- - Charging Infrastructure: Delhi has a more developed charging network with 1,886 operational charging stations, compared to Karnataka's 1,041. This indicates a better infrastructure support in Delhi, which could be beneficial for increasing EV adoption despite the lower market penetration rate.

Comparison : Delhi Vs Karnataka: (4 – Wheelers)

- Penetration Rate (PR%):
 - Delhi: 4.29%, Karnataka: 4.26%
- Total Vehicle Sales:
 - Delhi: 20,111,130 units, Karnataka: 302,221 units
- Total EV Sales:
 - Delhi: 8,630 units, Karnataka: 12,878 units

❑ Key Observations:

- Market Penetration Rate: Delhi has a slightly higher market penetration rate for four-wheeler EVs (4.29%) compared to Karnataka (4.26%).
- EV Sales Volume: Karnataka surpasses Delhi in total four-wheeler EV sales (12,878 units vs. 8,630 units), reflecting higher adoption in Karnataka.
- Total Vehicle Sales: Delhi's much larger total market for four-wheelers means that, although it has a higher penetration rate, the percentage of EVs is relatively similar to Karnataka's.

Comparison : Delhi Vs Karnataka

❏ Combined Insights

✓ **Market Penetration:**

- - Karnataka shows higher penetration rates in both two-wheelers and four-wheelers compared to Delhi.

✓ **Sales Volume:**

- - Karnataka leads in total EV sales for both two-wheelers and four-wheelers, despite having a smaller overall vehicle market compared to Delhi.

✓ **Charging Infrastructure:**

- - Delhi has a more developed charging network for two-wheelers, which may support higher adoption rates, but Karnataka has a higher number of operational charging stations per EV in four-wheelers.

✓ **Overall Adoption:**

- - While Delhi has a larger total vehicle market, Karnataka's higher market penetration rates indicate a more significant proportion of EVs within its respective markets.

This combined analysis provides a clear picture of how both states are performing in the EV sector across different vehicle categories and highlights their respective strengths and challenges.

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

❑ CAGR

- Meghalaya: 28.47%
- Goa : 27.41%
- Karnataka : 25.28%
- Delhi : 22.88%
- Rajasthan : 21.50%
- Gujarat :20.55%
- Assam : 20.13%
- Mizoram : 18.77%
- AP : 18.30%
- Andaman & Nicobar :18.29%

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Secondary Research Questions!

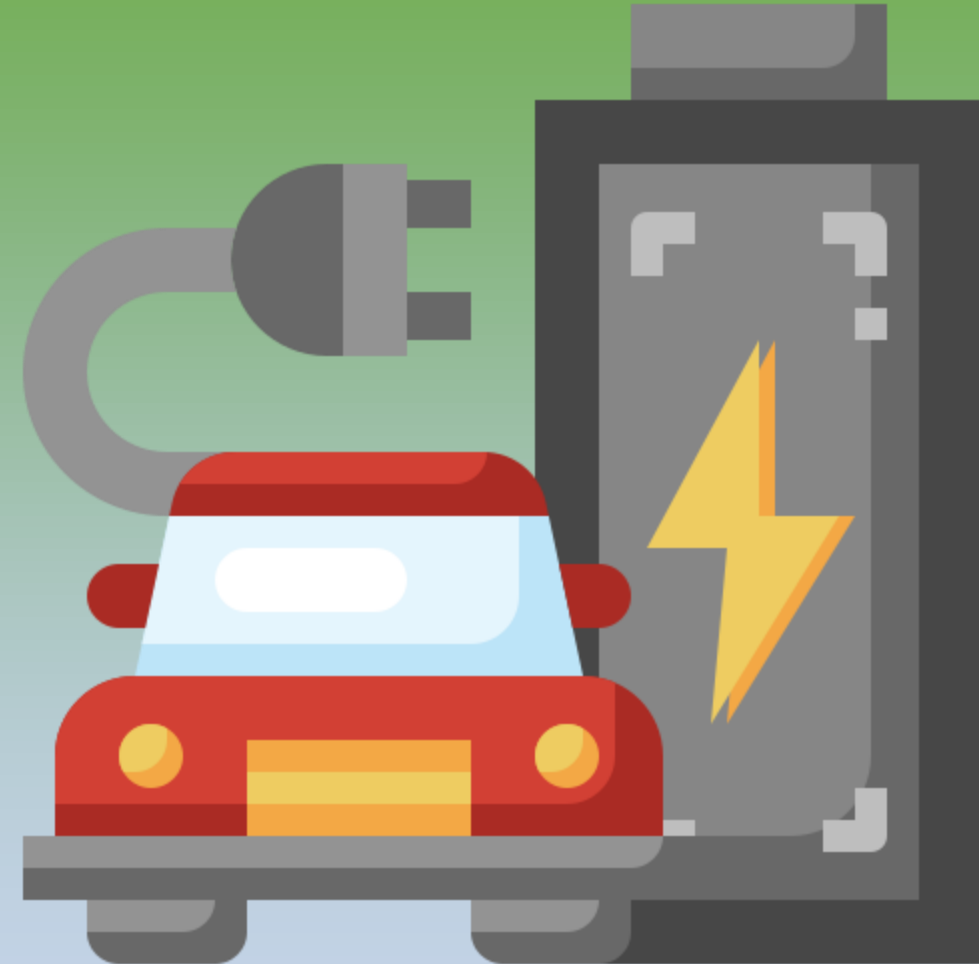


What are the primary reasons for customers choosing 4-wheeler EVs in 2023 and 2024 (cost savings, environmental concerns, government incentives)?

Customers in India are primarily choosing 4-wheeler EVs in 2023 and 2024 due to cost savings on fuel and maintenance, environmental concerns regarding air quality, and government incentives promoting electric vehicle adoption.

In India, government incentives for electric vehicles typically include subsidies on purchase prices, tax benefits, lower registration fees, and incentives for manufacturers to promote EV production and infrastructure development.

- **AME India Scheme Phase II:** Under the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) India scheme, subsidies are provided on the purchase of electric vehicles and charging infrastructure development.
- **GST Reduction:** Goods and Services Tax (GST) on electric vehicles has been reduced from 12% to 5%, making EVs more affordable
- **Income Tax Benefits:** Income tax deductions of up to ₹1.5 lakh on interest paid on loans taken for EV purchase.
- **State-specific Incentives:** Several states offer additional incentives such as road tax waivers, subsidies, and registration fee discounts.
- **Customs Duty Waivers:** Exemption from customs duty on certain EV components to encourage local manufacturing and reduce import costs.



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

Government incentives and subsidies have a significant impact on the adoption rates of both 2-wheelers and 4-wheelers in India:

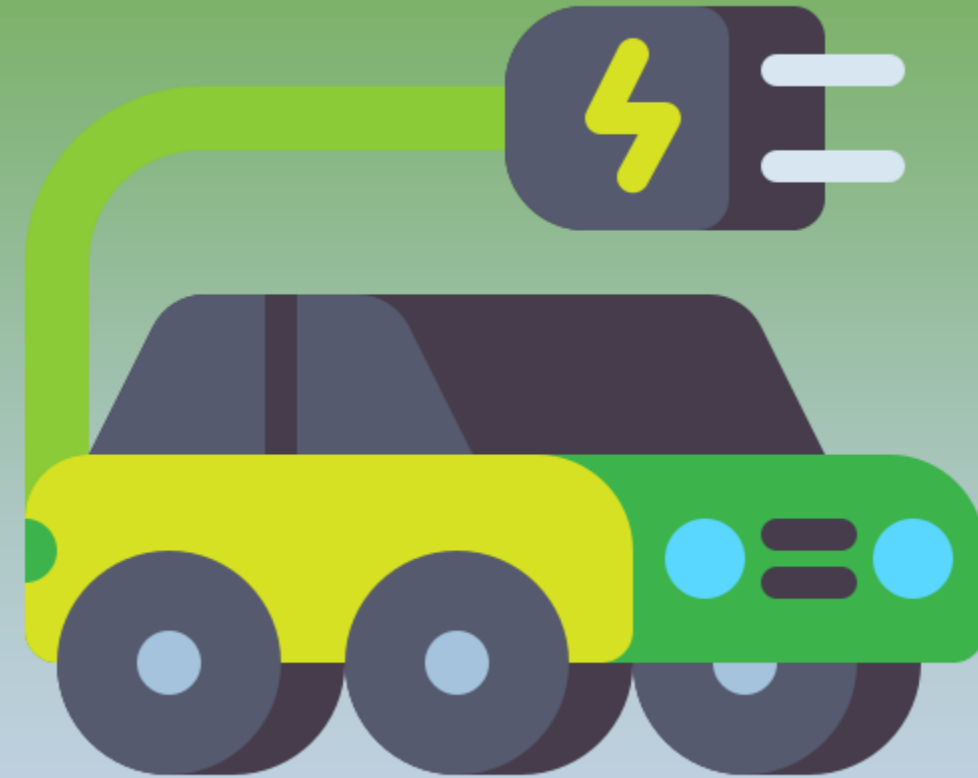
1.Impact on Adoption Rates:

- ✓ **Cost Reduction:** Subsidies and incentives reduce the upfront cost of purchasing electric vehicles, making them more affordable compared to traditional fossil fuel vehicles.
- ✓ **Financial Savings:** Lower operating costs (due to cheaper electricity compared to gasoline) and reduced maintenance expenses further incentivize consumers to switch to electric vehicles.
- ✓ **Environmental Considerations:** Incentives encourage consumers to choose cleaner and environmentally friendly transportation options, thereby reducing carbon emissions and improving air quality.

2.States Providing Most Subsidies:

- ✓ **Delhi:** The Delhi government has been proactive in providing subsidies and incentives to promote electric vehicles, including significant financial incentives on purchase.
- ✓ **Maharashtra:** Maharashtra offers subsidies, tax waivers, and incentives for electric vehicle adoption, particularly in urban centers like Mumbai and Pune.
- ✓ **Gujarat:** Gujarat provides subsidies on electric vehicles and charging infrastructure, aiming to boost adoption across the state.
- ✓ **Karnataka:** Karnataka offers incentives such as subsidies on EV purchases and charging infrastructure development, particularly in Bengaluru.
- ✓ **Tamil Nadu:** Tamil Nadu has rolled out incentives and subsidies to encourage electric vehicle manufacturing and adoption, promoting infrastructure development as well.

These states have implemented various policies to support electric vehicle adoption, ranging from direct financial incentives to infrastructure development, contributing to higher adoption rates compared to other regions in India.



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

The availability of charging station infrastructure is closely correlated with EV sales and penetration rates in the top 5 states in India.

- ✓ **Increased Convenience:** More charging stations reduce range anxiety and make it easier for EV owners to charge their vehicles, leading to higher adoption rates.
- ✓ **Enhanced Confidence:** A robust network of charging stations increases consumer confidence in EVs, boosting sales and encouraging potential buyers to choose electric vehicles over traditional ones.
- ✓ **Urban and Rural Coverage:** States with widespread charging infrastructure tend to see higher penetration rates, as both urban and rural areas become accessible for EV users.
- ✓ **Support for Fleet Operators:** Adequate charging infrastructure supports fleet operators and commercial EVs, contributing to overall higher sales and usage.

1. Top 5 States and Their Charging Infrastructure Impact:

- ✓ **Delhi:** Extensive charging infrastructure in Delhi supports high EV adoption rates, with numerous public and private charging stations across the city.
- ✓ **Maharashtra:** Mumbai and Pune, with growing charging networks, show increasing EV penetration rates. The development of infrastructure in these cities supports this growth.
- ✓ **Gujarat:** Significant investment in charging infrastructure, especially in urban areas like Ahmedabad and Surat, correlates with growing EV sales and adoption.
- ✓ **Karnataka:** Bengaluru's expanding charging network contributes to its leading position in EV adoption, with an increasing number of charging points supporting the rise in EVs.
- ✓ **Tamil Nadu:** Chennai and other cities benefit from growing charging infrastructure, which enhances EV adoption rates by providing better accessibility and convenience for users.
- ✓ In summary, the development and availability of charging stations are crucial factors that directly influence EV sales and penetration rates, with states investing in infrastructure seeing higher adoption and growth in electric vehicle usage.

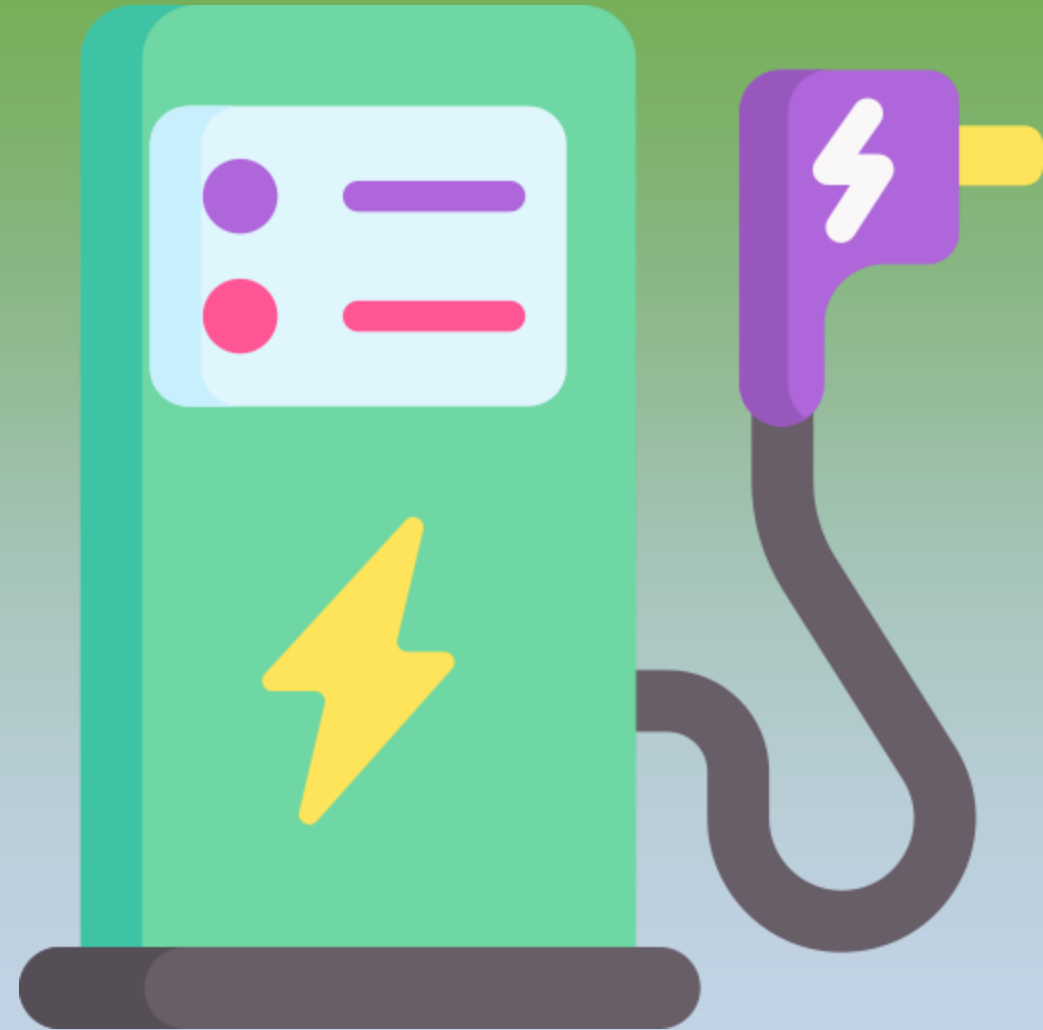


Which state of India is ideal to start the manufacturing unit? (Based on subsidies provided, ease of doing business, stability in governance etc.)

Based on factors like subsidies provided, ease of doing business, and stability in governance, **Gujarat & Maharashtra** is an ideal states in India to start a manufacturing unit for electric vehicles (EVs) or hybrids. Here's why:

- **Subsidies and Incentives:**
 - ✓ **Gujarat & Maharashtra** offers substantial subsidies and incentives for EV manufacturing and adoption, including financial support and tax benefits. The state has a well-defined EV policy that supports manufacturers.
- **Ease of Doing Business:**
 - ✓ **Gujarat & Maharashtra** consistently ranks high in the Ease of Doing Business index. It has a streamlined process for setting up businesses, efficient regulatory frameworks, and robust infrastructure, which simplifies the establishment and operation of manufacturing units.
- **Infrastructure:**
 - ✓ The state has well-developed industrial infrastructure, including access to ports, transport networks, and logistics support, which is crucial for manufacturing and distribution.
- **Government Stability:**
 - ✓ **Gujarat & Maharashtra** has a relatively stable governance environment, with a track record of favorable policies and proactive support for industrial growth. The government's focus on industrialization and infrastructure development makes it a business-friendly location.
- **Skilled Workforce:**
 - ✓ The states has a growing pool of skilled labor and technical expertise, essential for advanced manufacturing operations.

Overall, **Gujarat & Maharashtra** both states are combination of favorable business policies, strong infrastructure, and supportive government makes it an attractive choice for establishing a manufacturing unit for EVs or hybrids in India.



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

Choosing a brand ambassador for AtliQ Motors' EV/Hybrid vehicles in India involves selecting someone who aligns with the brand's values, appeals to its target audience, and can effectively communicate the benefits of their products.

1. Aamir Khan:

✓ Why:

Aamir Khan is known for his social awareness and commitment to various causes, including environmental sustainability. His credibility and strong public image can help position AtliQ Motors as a socially responsible and eco-friendly brand. Khan's diverse fan base and influence across different demographics can also broaden the appeal of AtliQ Motors' vehicles.



My recommendations for AtliQ Motors.

1. Charging Infrastructure:

AtliQ Motors should consider that India is still in the process of developing its EV charging infrastructure when planning their EV launch. However, states like Maharashtra, Karnataka, Delhi, Gujarat, and Tamil Nadu have a relatively well-developed network of charging stations.

2. Brand Ambassador Recommendation:

Aamir Khan is an ideal choice for a brand ambassador due to his established track record in advocating for environmental issues. His involvement would enhance the credibility and appeal of AtliQ Motors' EVs.

3. Market Leaders in Four-Wheeler Segment:

Tata Motors, Mahindra & Mahindra, and MG Motors are leading players in the four-wheeler segment, especially in the lower-budget category. Tata Motors' percentage of EV sales showed a decline from 68.41% in 2022 to 59% in 2023. However, sales figures from January to December 2024 indicate an increasing trend, with the percentage rising to 55% by the end of the year.

4. Two-Wheeler Market Presence:

In the two-wheeler segment, key market players include Ola, Hero Electric, Bajaj, and TVS. Despite the popularity of four-wheelers, the two-wheeler segment has a significantly larger road presence in India compared to four-wheelers.

1. Recommendation for Hybrid Vehicles :

After conducting a comprehensive analysis of the EV market in India, it is advisable for AtliQ Motors to initially focus on hybrid vehicles. Currently, India lacks the density of charging stations comparable to conventional fuel stations, which could pose a challenge for fully electric vehicles.





Thank You!