Report on: Future of electric vehicles in India

Here is the structured report based strictly and only on the provided context.

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1. Executive Summary

This report provides an analysis of the electric vehicle (EV) market in India, outlining its substantial growth potential. This potential is supported by government policies, economic factors, and heightened environmental awareness. The market is projected to grow to USD 100 billion by 2030, with key drivers being the FAME-II and Production-Linked Incentive (PLI) schemes. However, significant challenges hinder mass adoption, including insufficient charging infrastructure, high initial vehicle costs, and a strong dependence on imported battery components. Addressing these challenges is crucial for India to achieve its goals of becoming a global EV manufacturing hub and reducing its carbon footprint.

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2. Key Insights

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Strategic National Goals:

- India's EV adoption strategy aims to reduce the national carbon footprint and decrease dependence on imported fossil fuels.
- The nation also seeks to position itself as a global manufacturing hub for EVs and their related components.

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Government Policy as a Key Driver:

- The FAME-II scheme acts as a major catalyst by offering consumer subsidies and supporting the development of charging infrastructure.

- Production-Linked Incentive (PLI) schemes for Advanced Chemistry Cell (ACC) battery storage are promoting domestic manufacturing and attracting investment.

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Economic and Social Catalysts:

- The high and volatile prices of petrol and diesel make the lower running costs of EVs an economically appealing option for consumers.
- Increased public awareness regarding air pollution is creating a more environmentally conscious consumer base that is receptive to clean transportation.

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Market Growth Projections:

- The Indian EV market was valued at approximately USD 6 billion in 2023.
- The market is forecasted to expand to USD 100 billion by 2030.

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Vehicle Penetration Targets for 2030:

- Electric Two-wheelers: 75%
- Commercial Cars: 50%
- Buses: 40%
- Passenger Cars: 35%

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Infrastructure Expansion Target:

- The government plans to increase public charging stations from approximately 12,000 in early 2024 to

over 100,000 by the end of 2026.

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3. Potential Risks or Limitations

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Inadequate Charging Infrastructure:

The current network of public charging stations is insufficient, particularly in Tier-2 and Tier-3 cities and along highways, which contributes to "range anxiety" among potential buyers.

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High Upfront Cost:

The initial purchase price of EVs, especially four-wheelers, is significantly higher than their internal combustion engine (ICE) counterparts, presenting a major barrier for price-sensitive consumers in India.

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Battery Supply Chain Dependency:

India has a heavy reliance on imports for essential lithium-ion cells, primarily from China. This dependency creates a significant risk for long-term sustainability, cost control, and supply chain stability.

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4. Conclusion

Based on the provided information, the Indian electric vehicle market is positioned for significant expansion, driven by strong government policies and favorable economic and social factors. The nation has set ambitious targets for market value, vehicle penetration, and infrastructure growth by 2030. However, achieving these goals is contingent upon overcoming critical obstacles, namely the inadequacy of the current charging network, the high upfront cost of vehicles, and a strategic vulnerability due to dependence on

imported battery components.

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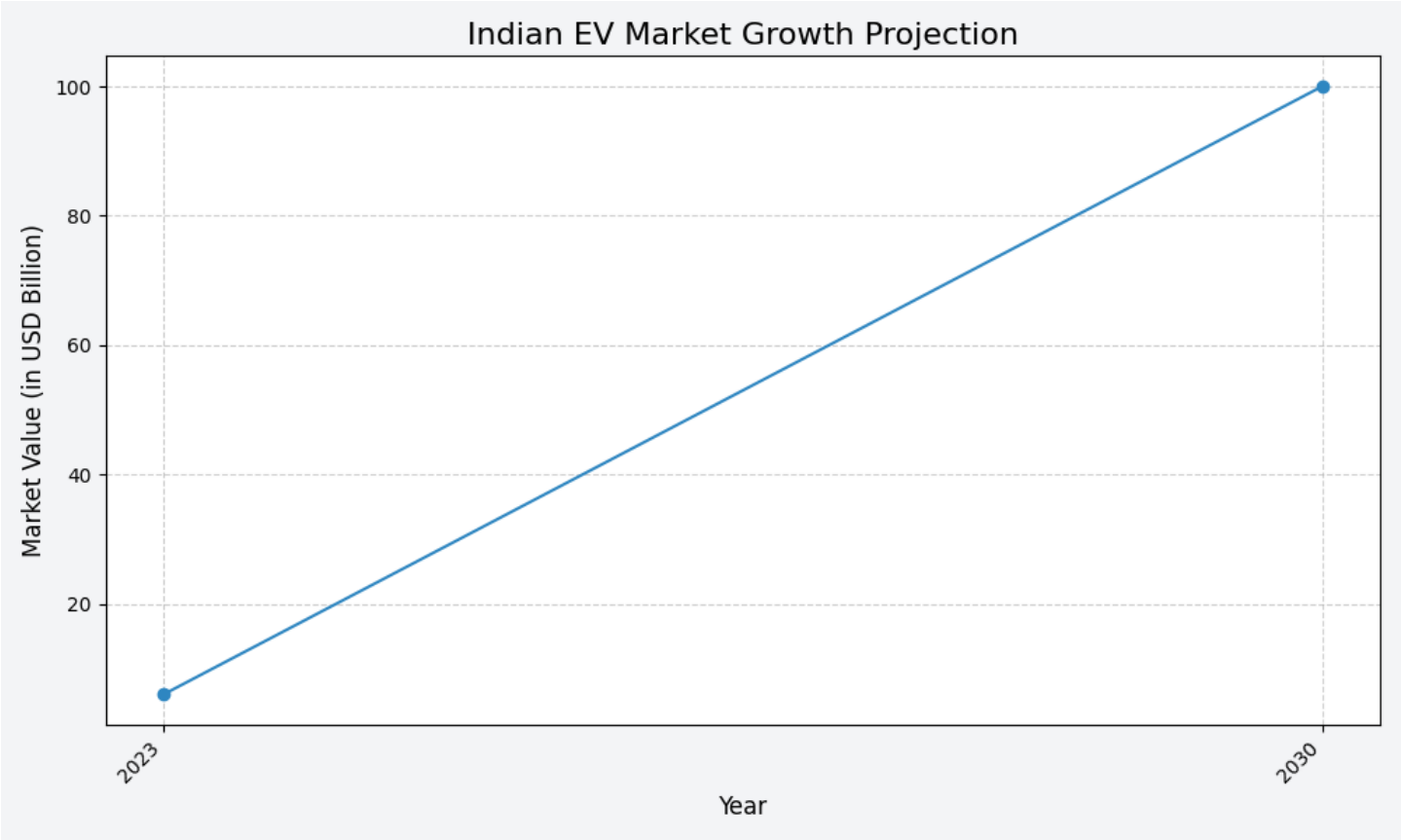

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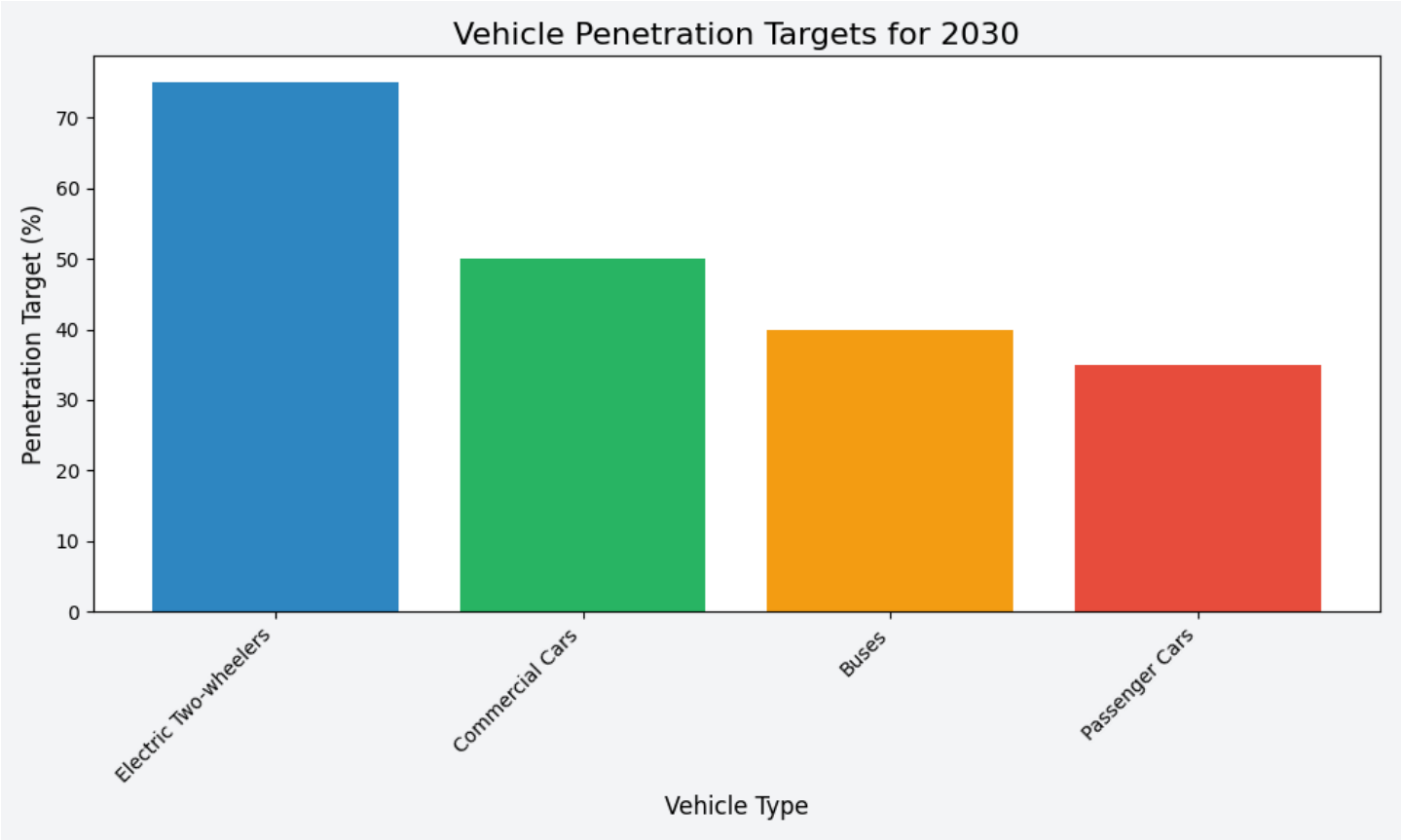

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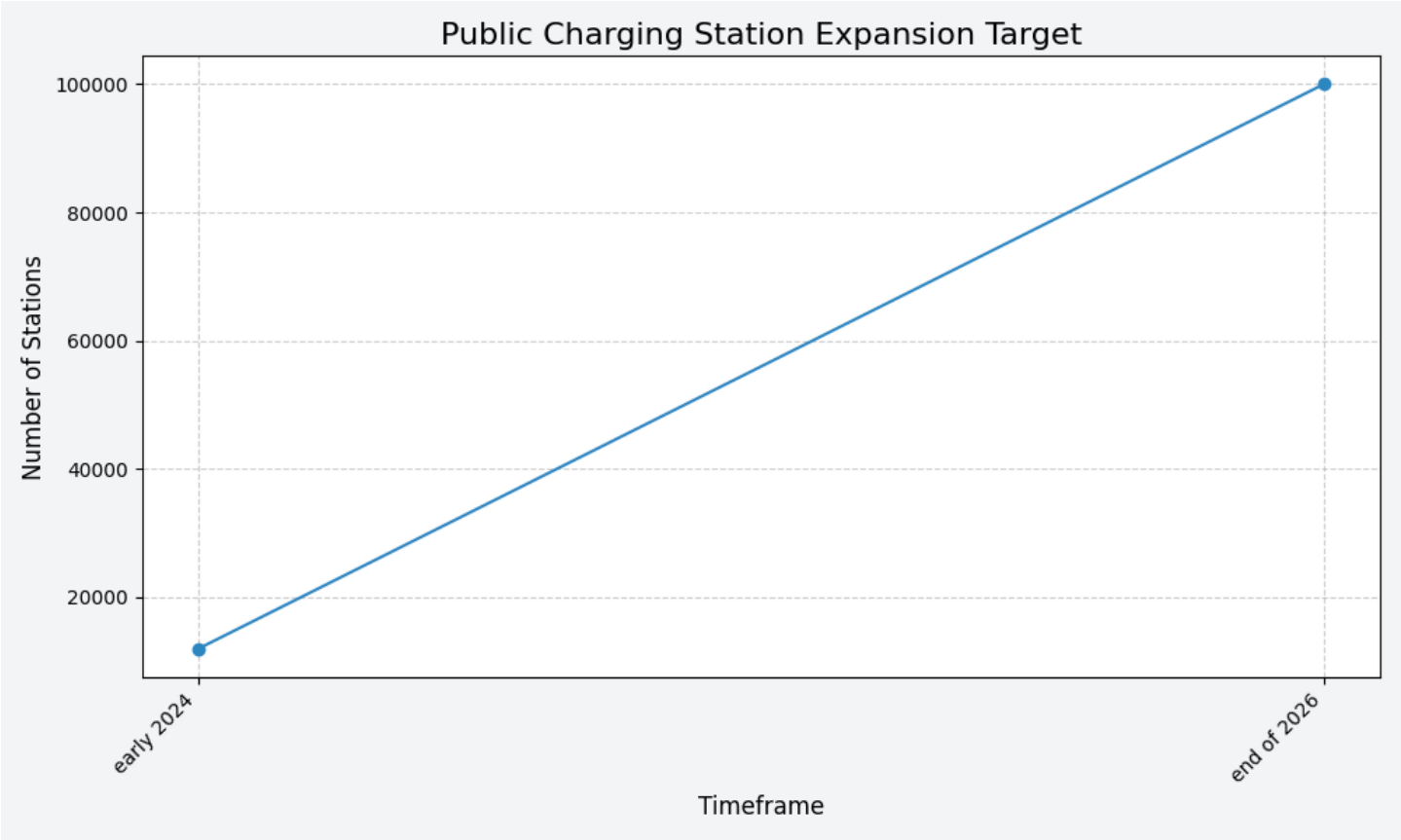

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