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When Green Turns Grey: Ola Electric and the Sustainability Mirage of EVs - Unmasking the paradox of clean mobility and its hidden toll.

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Abstract
This case study explores the rise of Ola Electric Mobility Pvt. Ltd. as a leading force in India's electric vehicle (EV) transition. With major investments like a 20 GWh lithium-ion cell Gigafactory under the PLI scheme, Ola reflects the national push to reduce oil dependence and advance sustainable mobility. While EVs offer lower lifecycle emissions and new economic opportunities, the case highlights tensions related to battery materials, manufacturing impacts, safety issues, and end-of-life management. By examining Ola's growth, this study evaluates whether India's EV movement represents truly sustainable progress or a reconfigured model of resource-intensive industrialisation.

Introduction

Ola Electric Mobility Pvt. Ltd., a subsidiary of ANI Technologies (Ola Cabs), has rapidly emerged as one of India's most visible electric vehicle (EV) manufacturers. Launched with the ambition of positioning India as a global hub for green mobility, Ola has invested in the construction of a 20 GWh lithium-ion cell Gigafactory in Krishnagiri, Tamil Nadu, backed by the Government of India's Production Linked Incentive (PLI) scheme. This initiative reflects the broader national push toward EV adoption as a means to reduce crude oil dependence, cut greenhouse gas emissions, and improve urban air quality while aligning with India's net-zero commitment by 2070.

The promise of EVs is grounded in evidence: lifecycle assessments consistently show that EVs emit 30–50% less greenhouse gases compared to internal combustion vehicles, even on coal-dependent grids like India's. Advocates highlight their potential to stimulate employment, create new supply chains, and enhance energy security. Yet Ola's rapid rise also underscores a deeper paradox: while EVs are hailed as the cornerstone of sustainable transport, the environmental and social costs of battery production, safety risks, and end-of-life management raise pressing questions about whether this transition is genuinely sustainable or merely a reconfigured form of extractive industry.

Key Issue

Ola Electric faces a critical dilemma: scale rapidly to dominate India's EV market and meet PLI-linked milestones, or address mounting concerns about sustainability and social impact. Ethical controversies in cobalt and lithium mining, recurring battery safety incidents, the widening recycling gap, and policy volatility challenge its growth. The central question remains: should Ola pursue aggressive expansion or adopt a sustainability-first approach that prioritises long-term carbon neutrality and social responsibility, even at the cost of slower growth?

Case Narrative / Situation Analysis

Ola Electric's entry into the EV market has been nothing short of meteoric. In 2021, the company launched its S1 scooter range, followed by the construction of what it branded as the world's largest two-wheeler factory. Its subsequent Gigafactory investment was not only positioned as an industrial milestone but also as a nationalistic contribution to India's Atmanirbhar Bharat strategy. With policy support from FAME-II (now replaced by the interim PM E-DRIVE scheme) and the PLI program, Ola emerged as a poster child for India's clean mobility push.

From a policy standpoint, the opportunity is immense. According to NITI Aayog (2023), India targets 30% EV penetration by 2030, led by two- and three-wheelers. The International Energy Agency (2024) similarly projects that EV adoption will play a decisive role in cutting oil imports and reducing greenhouse gas emissions. These projections reinforce Ola's narrative that it is building more than scooters; it is building India's low-carbon future.

Despite India's ambitious EV push, significant structural vulnerabilities persist. Global supply chains are deeply entangled with ethical and environmental risks, cobalt from the Democratic Republic of Congo is tied to child labour and human rights abuses, lithium extraction in Chile and Argentina depletes scarce groundwater resources, and nickel mining in Indonesia adds severe ecological strain. Over 75% of midstream refining and cell manufacturing is dominated by China, leaving Indian firms like Ola exposed to price shocks and geopolitical risks. Domestically, Ola's reputation has also been tested by battery fire incidents in 2022 revealed safety lapses and prompted recalls under stricter AIS-156 standards. While Ola has since strengthened its battery management systems, the broader dilemma remains: balancing rapid scaling with long-term sustainability and robust safety practices.

Perhaps the most pressing challenge is recycling. India's formal recycling capacity is projected to reach only 8 GWh by 2030, while waste is expected to exceed 55 GWh annually. Without effective circular economy solutions, informal recyclers, often women and children, will bear the brunt of unsafe waste handling, leading to toxic exposure and new social risks. The International Council on Clean Transportation (2024) notes that while EVs deliver urban air quality gains, these benefits may be offset by lifecycle emissions and waste if not addressed through systemic interventions.

Thus, Ola Electric's trajectory captures both the promise and paradox of India's EV revolution. It symbolises the ambition to leapfrog into clean mobility leadership while simultaneously revealing the fragility of such ambitions when built on extractive supply chains, insufficient regulatory safeguards, and underdeveloped recycling infrastructure.

Questions for Discussion

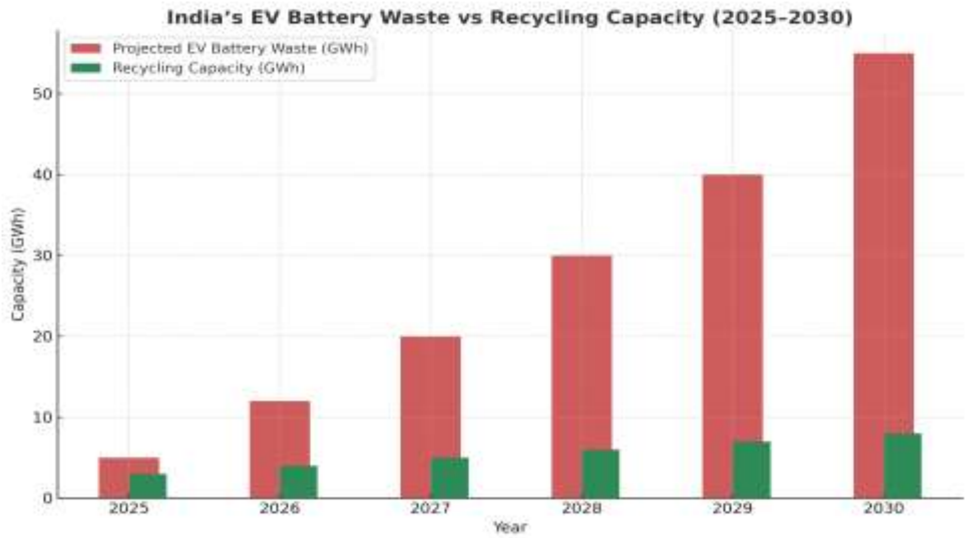
1. Can EVs truly deliver carbon neutrality, or do they simply shift environmental and social costs from cities like Delhi to distant mining regions like the DRC and Chile?
2. Should Ola Electric prioritise rapid scaling to dominate India's EV market, or adopt a sustainability-first approach that slows growth but addresses social and environmental risks?
3. How can India balance its dependence on global supply chains dominated by China and the DRC with its vision of Atmanirbhar Bharat (self-reliance) in EV production?

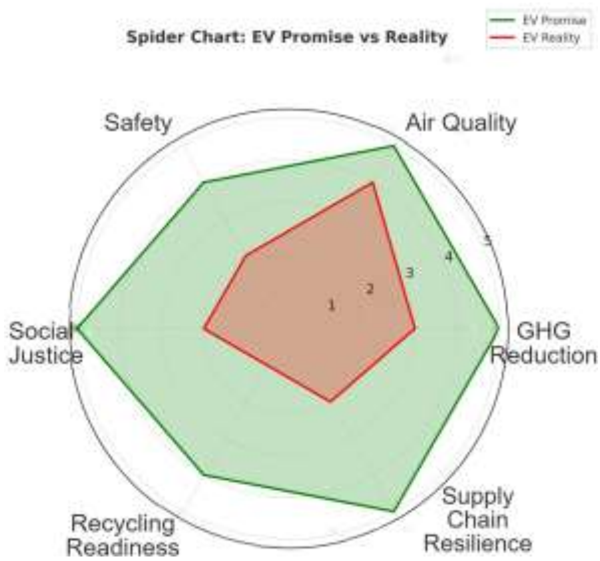
4. Does the EV revolution represent a genuine sustainability transition, or is it simply a new form of extractive industry with hidden costs for vulnerable communities?

Teaching / Learning Objectives

- To critically evaluate the paradox between rapid business growth and long-term sustainability in emerging industries such as EVs.
- To analyse how global supply chains and social impact externalities influence the credibility of sustainability transitions.
- To understand the trade-offs policymakers and firms face between achieving carbon neutrality goals and safeguarding communities from hidden costs.

Appendix





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