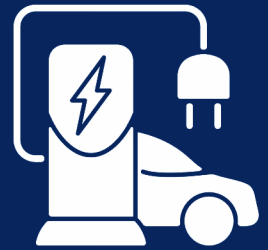


# POWERING GHANA'S ELECTRIC MOBILITY TRANSITION

## Closing Safety, Infrastructure, and Regulatory Gaps



### POLICY BRIEF

## Executive Summary

Ghana's transport sector is the largest contributor to energy-related greenhouse gas emissions, accounting for 47.7 percent of total emissions. Electric vehicles (EVs) present a viable pathway to decarbonisation, with significant potential for fuel cost savings, foreign exchange conservation, and improved urban air quality.

However, Ghana's EV transition remains constrained by critical structural bottlenecks, namely limited charging infrastructure, weak regulatory oversight, high upfront costs, and emerging safety risks linked to battery integrity in imported second-hand EVs.

Although the National Electric Mobility Roadmap outlines substantial long-term gains, these outcomes are not automatic. Without coordinated and sequenced policy action, EV adoption risks remaining narrow, inequitable, and economically suboptimal.

## 1 Key Policy Insights

- **Transport decarbonisation is imperative:** The sector remains Ghana's most emissions-intensive and requires targeted policy intervention.
- **Cost advantages are real but inaccessible:** EVs can reduce operating costs by up to 41 percent, yet high acquisition costs and limited financing options constrain adoption.
- **Safety risks are regulatory, not technological:** Battery-related incidents are driven by weak import controls, degraded batteries, and unsafe charging practices.

- **Electricity surplus alone is insufficient:** Despite excess generation capacity (over 1,000 MW), distribution constraints remain a binding limitation to EV scale-up.

## 2 The Economic and Climate Imperative

Ghana's commitments under the Paris Agreement include a 15 percent reduction in emissions by 2030, yet the transport sector remains heavily reliant on imported fossil fuels.

The economic case for EV adoption is equally compelling:

- Petroleum imports exceed USD 3 billion annually, exerting sustained pressure on the cedi and external balances.
- EV adoption reduces household and firm operating costs, enhancing real incomes and productivity.
- Off-peak EV charging can improve electricity sector revenues and optimise underutilised generation capacity.

## 3 Binding Constraints to EV Adoption

### • Infrastructure Deficit

Public charging infrastructure remains scarce and urban-centric, reinforcing range anxiety and limiting nationwide adoption.

### • Grid and Distribution Weaknesses

While generation capacity is adequate, distribution inefficiencies and outages undermine reliable EV charging and pose risks under increased demand.

### • Technical Skills Gap

The absence of certified EV technicians has led to dependence on foreign expertise, constraining scalability and increasing maintenance risks.

### • After-Sales Market Failure

The EV ecosystem lacks structured warranties, spare parts networks, and service systems, elevating ownership risk and weakening consumer confidence.



## 4 Safety Risk: Battery Integrity and Fire Incidents

Emerging safety concerns in Ghana's EV market are primarily the result of regulatory and market failures, rather than inherent technological flaws.

Key drivers include:

- Unregulated second-hand imports: No enforceable battery State-of-Health (SoH) standards at entry.
- Thermal stress conditions: High ambient temperatures accelerate battery degradation.
- Unsafe charging practices: Driven by infrastructure shortages and unstable power supply.
- Regulatory gaps: Absence of EV-specific safety protocols from key institutions, including the DVLA and Ghana Standards Authority.

## 5 Policy Recommendations

### Short-Term (0-2 Years)

- Enforce minimum battery SoH standards for all imported EVs.
- Mandate battery certification at the point of import, especially for used vehicles.
- Issue national EV safety and charging guidelines.
- Introduce targeted tax incentives for electric buses and implement phased duty reductions for EVs.

### Medium-Term (3-5 Years)

- Establish a National EV Infrastructure Fund to finance inter-city charging networks.
- Launch a national EV technician certification programme through TVET institutions.
- Require after-sales service obligations for EV importers.



- Prioritise distribution grid upgrades, particularly transformer capacity in high-demand zones.

### **Long-Term (5+ Years)**

- Develop a battery end-of-life management framework, incorporating extended producer responsibility.
- Introduce mandatory annual EV battery inspections.
- Establish a National EV Observatory to track adoption trends, safety outcomes, and economic impacts.

## **6 Conclusion**

Ghana's transition to electric mobility is not merely technological, it is a system-wide transformation requiring regulatory clarity, infrastructure investment, and institutional coordination.

Without immediate and targeted policy action, particularly in battery safety regulation, charging infrastructure development, and technical capacity building, the transition risks becoming fragmented, inequitable, and potentially unsafe.

A well-sequenced and coordinated policy framework can instead position Ghana as a regional leader in electric mobility, delivering tangible gains in macroeconomic stability, environmental sustainability, and public health.

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### **About CERPA**

The Centre for Economic Research and Policy Analysis (CERPA) is a think tank dedicated to providing independent, data-driven economic research and policy recommendations to foster sustainable

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