

Inception Report

# EXPLORING THE TRANSITION PATHWAYS TO ELECTRIC 2&3 WHEELERS IN GHANA

Centre for Extractives and Development  
Africa (CEDA)

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# Inception Report Summary for Stakeholders

The Centre for Extractives and Development Africa (CEDA) extends its heartfelt appreciation to all stakeholders who participated in the project inception meeting on 24 April 2025 and continue to support this critical research initiative. We are grateful to the Ministry of State for Climate Change and Sustainability for their leadership in hosting the launch event, and to all government institutions, private sector partners, civil society organisations, and development partners who have demonstrated unwavering commitment to Ghana's sustainable mobility transition.

Your active participation, valuable insights, and collaborative spirit during the inception phase have been instrumental in shaping the project's direction and ensuring its relevance to Ghana's development priorities. We look forward to your continued engagement as we work together to develop evidence-based policies that will accelerate Ghana's inclusive transition to electric two- and three-wheelers..

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## Executive Summary

The 22-month research project examining Ghana's transition to electric two- and three-wheelers has successfully completed its inception phase, establishing a robust foundation for comprehensive policy analysis and stakeholder engagement. This summary highlights key achievements, findings, and the path forward for accelerating Ghana's inclusive transition to sustainable mobility.

## Project Context and Significance

Ghana stands at a critical juncture in its sustainable mobility journey. The transport sector accounts for **48% of Ghana's energy-sector CO<sub>2</sub> emissions** and **17% of total national emissions<sup>1</sup>**, with transportation emissions rising at nearly 5% annually since 2010. Simultaneously, two- and three-wheelers have become increasingly prevalent, particularly in urban areas where they provide essential last-mile connectivity and livelihood opportunities for thousands of youth.

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***By 2030, there will be approximately 490 million electric 2&3-wheelers globally, far exceeding the projected 140 million electric cars, positioning Ghana at the forefront of a mobility revolution<sup>2</sup>.***

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The economic case for electric 2&3-wheelers is compelling. Analysis reveals that electric 2-wheelers achieve cost parity with conventional vehicles after just two years of ownership, while electric 3-wheelers are **470% less expensive to own by the fifth year<sup>3</sup>**.

Despite these advantages, significant policy gaps persist across Ghana's regulatory framework. The National Electric Vehicle Policy (2023) lacks specific strategies for E2&3-wheelers, while commercial motorcycle taxis ("Okada") continue operating in a legal grey area under current Road Traffic Regulations.

## Inception Phase Achievements

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<sup>1</sup> Environmental Protection Agency (EPA), Ghana. (2022). Ghana's Fifth National Greenhouse Gas Inventory Report (1990–2019). United Nations Framework Convention on Climate Change (UNFCCC).

## Stakeholder Ecosystem Mapping

The project has successfully mapped Ghana's e-mobility stakeholder landscape, engaging representatives from:

- **Government institutions:** Ministry of State for Climate Change and Sustainability, Energy Commission, Ghana Standards Authority
- **Private sector:** Solar Taxi, Wahu Mobility, Charge Express, Okada Riders Association
- **Development partners:** UNDP, GIZ, and international organisations
- **Civil society and academia:** Research institutions and advocacy groups

## Research Framework Finalisation

A comprehensive research methodology has been developed, employing:

- **Mixed-methods approach** combining quantitative surveys with qualitative insights
- **Nine case study districts** across Ghana's Coastal, Middle Belt, and Northern zones
- **Gender-responsive data collection** ensuring inclusive participation
- **Multi-dimensional analysis** addressing social, economic, technical, and political factors

## Gender Advisory Committee Establishment

A dedicated Gender Advisory Committee (GAC) has been inaugurated, comprising eight distinguished members from women's organisations, disability rights groups, and energy sector leaders. The GAC will provide strategic guidance throughout the project lifecycle, ensuring that gender equality and social inclusion considerations are mainstreamed across all research activities and policy recommendations.

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## Key Insights from Stakeholder Consultations

The inception meeting in April 2025 revealed critical themes that will shape the project's direction:

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<sup>2</sup> International Energy Agency. (2022). Global EV Data Explorer. I.E. Agency, Editor. 2022: Paris.

<sup>3</sup> Energy Commission. (2022). Ghana electric vehicles baseline survey report. Drive Electric Initiative (DEI-Gh), Energy Commission of Ghana.

## Infrastructure and Investment Barriers

Stakeholders highlighted significant challenges facing private actors seeking to establish EV charging infrastructure, including high costs for dedicated transformers, copper cables, and imported electrical components. Weak net metering policies and unfavourable tariff structures currently discourage solar-powered charging investments.

## Data and Regulatory Gaps

A persistent lack of accurate baseline data emerged as a major concern, particularly regarding fuel types used by registered motorcycles and tricycles. Current transport data systems are inadequate for evidence-based policy decisions, necessitating enhanced collaboration with regulatory agencies.

## Battery Lifecycle Management

While some companies have begun repurposing used EV batteries for secondary applications, Ghana lacks formal national recycling policies and infrastructure. Stakeholders emphasised the importance of developing comprehensive battery management systems as part of the broader energy transition agenda.

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***Between 2017 and 2021, Ghana imported 17,660 electric vehicles, with E2&3-wheelers accounting for 96% - demonstrating existing market momentum ready for policy support<sup>4</sup>.***

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## Financing and Incentive Structures

Current VAT exemptions benefit public sector actors like Metro Mass Transit but largely exclude private operators. Consensus emerged on the need to revise existing incentive policies to align with practical use cases and expand access to import duty exemptions for private sector innovators.

## Gender Equality and Social Inclusion Analysis

The project's GESI analysis has identified specific groups at risk of exclusion and the barriers they face:

## Who Might Be Left Behind?

- **Women riders and entrepreneurs:** Cultural norms in southern regions cast motorcycle riding as predominantly male activity
- **Low-income populations:** Higher upfront costs of electric vehicles create affordability barriers
- **Rural communities:** Concentrated infrastructure development in urban centres risks deepening regional inequalities
- **Informal sector workers:** Conventional mechanics and fuel vendors face potential livelihood disruption without transition support

## Addressing Exclusion

The project will implement targeted strategies including:

- Gender-responsive data collection with specific quotas for marginalised groups
- Participatory research methods enabling meaningful participation from diverse voices
- Development of inclusive policy recommendations addressing barriers to participation
- Creation of accessible knowledge products reflecting Ghana's demographic diversity

With poverty rates exceeding 50% in northern regions<sup>5</sup> where motorcycles are most prevalent, inclusive e-mobility policies are essential for equitable development.

## Research Methodology and Case Study Areas

The project employs a comprehensive mixed-methods research design that combines quantitative analysis with qualitative insights to understand the complex dynamics of e-mobility transition. Our methodology integrates economic viability assessments, technical feasibility studies, political economy analysis, and social impact evaluations to provide a holistic understanding of barriers and opportunities.

Primary data collection will involve structured surveys with 2&3-wheeler users and operators, focus group discussions with diverse community groups, and key informant interviews with industry stakeholders, policymakers, and technical experts. This will be complemented by secondary data analysis from government agencies, private sector partners, and international sources to

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<sup>4</sup> International Trade Centre. (2023). Motor cars and other motor vehicles principally designed for the transport of persons (Product code: 8703)

<sup>5</sup> Ghana Statistical Service. (2023). Multidimensional Poverty Report: Ghana 2023. Accra: Ghana Statistical Service.

establish baseline conditions and benchmark against global best practices.

The research is being conducted across nine strategically selected case study areas representing Ghana's geographic and socioeconomic diversity:

### Coastal Zone

- **Accra Metropolitan:** Central business district with high traffic congestion
- **Ayawaso West Municipal:** Urbanised area with existing charging infrastructure
- **Ayawaso East Municipal:** Densely populated with significant informal settlements

### Middle Belt Zone

- **Kumasi Metropolitan:** Regional commercial hub with growing e-mobility interest
- **Asokore Mampong Municipal:** Mixed urban-rural characteristics
- **Techiman Municipal:** Agricultural centre with northern migrant populations

### Northern Zone

- **Tamale Metropolitan:** Regional capital with high 283-wheeler adoption
- **Tolon District:** Rural agricultural community
- **Bolgatanga Municipal:** Cross-border trade centre

This geographic diversity ensures research findings reflect varied adoption patterns, infrastructure needs, and socioeconomic contexts across Ghana.

### Next Steps

Building on the successful inception phase, the project will proceed through three key phases over the next 18 months. The immediate focus involves expanding our comprehensive literature review and policy analysis while initiating primary data collection across the nine case study areas. This will inform the development of critical outputs including a detailed gap analysis report, economic viability assessment, local manufacturing potential study, and infrastructure readiness evaluation.

The project will culminate in actionable policy recommendations, a national advocacy

framework, and a comprehensive synthesis report that consolidates all research findings. Additionally, an innovative e-mobility awareness documentary will be produced to promote public understanding and adoption. Throughout this process, regular stakeholder consultations and validation workshops will ensure research outputs remain relevant, practical, and aligned with Ghana's development priorities. All deliverables are designed to provide government, private sector, and civil society partners with evidence-based tools for advancing Ghana's transition to sustainable e-mobility.

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*This research will position Ghana as a regional leader in sustainable urban mobility, potentially influencing similar transitions across West Africa.*

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### Conclusion

The inception phase has demonstrated strong stakeholder commitment to advancing Ghana's e-mobility transition while highlighting the complexity of challenges that require coordinated responses. The project's comprehensive approach, combining rigorous research with inclusive stakeholder engagement, positions it to deliver actionable insights that can inform evidence-based policymaking.

Success will depend on continued collaboration across government, private sector, civil society, and development partners. As we move forward, stakeholders are encouraged to:

- **Share relevant data and insights** to strengthen the research foundation
- **Participate actively** in upcoming validation workshops and consultations
- **Champion inclusive approaches** that ensure no one is left behind in the transition
- **Advocate for evidence-based policies** that support sustainable and equitable e-mobility adoption

The transition to electric 283-wheeler represents more than an environmental imperative, it offers Ghana an opportunity to demonstrate that green growth and inclusive development are complementary aspects of sustainable progress. Through collective effort and strategic coordination, Ghana can lead by example in creating mobility solutions that serve all citizens while contributing to global climate goals.

# PROJECT INCEPTION & LAUNCH



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