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CHALLENGES AND OPPORTUNITIES FOR YOUTH IN KENYA'S GREEN TRANSITION.

PERSPECTIVES FROM YOUTHS IN THE E-MOBILITY SECTOR.

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ACRONYMS

BETA - Bottom-Up Transformation Agenda

BRT - Bus Rapid Transit

EMAK - Electric Mobility Association of Kenya

EPRA - Energy Petroleum Regulation

EV- Electric vehicles

GHG - Greenhouse Gas emissions

IPCC - Intergovernmental Panel on Climate Change

IEA - International Energy Agency

KIPPRA - Kenya Institute for Public Policy Research

KPLC - Kenya Power Limited Company

NTSA - National Transport and Safety Authority

NDC - National Determined Contribution

MTCO2e - Million Metric tons of Carbon Dioxide Equivalent

SDG - Sustainable Development Goals

VAT - Value Added Tax

EXECUTIVE SUMMARY

Kenya's transition to green mobility presents a unique opportunity to advance climate change mitigation, youth employment, and sustainable urbanization. Despite growing youth engagement as electric vehicle (EV) owners, boda boda riders, delivery operators, and charging station technicians, structural barriers such as limited access to finance, technology, skills, and supportive policy frameworks continue to constrain their participation. Weak alignment between education systems and emerging green economy needs further limit youth preparedness for entrepreneurial and informal opportunities within the rapidly evolving e-mobility sector.

Although the e-mobility sector is expanding, there remains limited empirical evidence on youth engagement, perceptions, challenges, and opportunities. This knowledge gap risks policy misalignment and missed opportunities to harness Kenya's youthful population for an inclusive, low-carbon transition. To address this gap, the study sought to assess the challenges and opportunities of green mobility within Kenya's green transition ecosystem, focusing on youth engagement. The specific objectives were to assess youth perceptions of the green transition, evaluate the challenges and enabling factors influencing participation in the e-mobility sector, identify opportunities for growth, and provide policy and programmatic recommendations to enhance youth inclusion, employment, and voice in the sector.

The research was conducted between June and September 2025 using a qualitative method including 6 focus group discussions (FGDs), 9 key informant interviews (KIIs), and literature review across six urban and peri-urban areas such as Nairobi, Mombasa, Kisumu, Thika, Kitengela, and Rongai. Qualitative data obtained during the study were transcribed and coded using NVivo software to identify recurring themes, relationships, and emerging trends.

Findings reveal that economic motivations such as reduced fuel costs, higher earnings from digital platforms, and entrepreneurship prospects are the primary drivers of youth participation in e-mobility, while environmental motivations remain minimal due to limited awareness of climate and sustainability benefits. Major barriers include high upfront costs and limited access to affordable finance, declining battery quality, inadequate charging infrastructure, shortage of skilled technicians, and gender- and disability-based exclusion in ownership and employment. Weak policy awareness, fragmented regulation, and delayed government response further undermine sectoral growth.

Kenya's e-mobility transition is youth-driven but structurally constrained. To unlock its full potential, the study recommends expanding inclusive financing for youth, women, and persons with disabilities; strengthening localized charging infrastructure and quality control standards; integrating green and technical skills into TVET and entrepreneurship programs; and enhancing policy coherence, coordination, and public awareness. By amplifying youth perspectives, this

study provides evidence-based insights to guide Kenya's inclusive, low-carbon, and job-creating green mobility transition.

1. INTRODUCTION AND BACKGROUND

1.1 Global Context

The pursuit of sustainable development is unfolding amid rapid urbanisation, rising energy demand and worsening environmental degradation. According to the International Energy Agency (IEA) global energy demand grew by 2.2 % in 2024, while electricity demand increased by 4.3 % in the same year (International Energy Agency, 2025b). In 2025, Global CO_2 emissions from fossil fuel combustion and industrial processes increased, reaching a record level of 38.1 $GtCO_2$ (Friedlingstein et al., 2025a). Moreover, fossil CO_2 emissions remained the main source of emissions (Friedlingstein et al., 2025b), and despite the expansion of renewables and electrification, the world is still far from achieving the scale of decarbonisation needed for climate stability.

The climate crisis is not only an energy problem. It is also an urban planning, infrastructure and mobility problem. Cities as engines of economic activity concentrate population, infrastructure, production and consumption making them central to both causing and addressing climate change. They account for more than half the global population, about 80% of GDP, two-thirds of energy consumption, and over 70% of annual carbon emissions (International Energy Agency, 2021). The transport sector is a key contributor, with direct greenhouse gas emissions from transport rising from 5.0 $GtCO_2$-eq in 1990 to 8.7 $GtCO_2$-eq in 2019, now making up 23% of global energy-related CO_2 emissions (Shukla et al., 2022a). Road vehicles are the primary source, responsible for around 70% of direct transport emissions (Shukla et al., 2022a). Transport sector accounts for roughly 30% of global energy demand, with road transport making up nearly 90% of domestic transport energy use (International Energy Agency, 2025a). Emissions from transport have grown persistently at about 2% per year over the last three decades with the sharpest increases in rapidly urbanising regions of Asia and Africa, where infrastructure gaps, rising motorisation, and limited low-carbon alternatives persist (Righi et al., 2023) (Lamb et al., 2021) (Shukla et al., 2022b).

Beyond environmental impacts, transport emissions worsen air quality. The World Health Organization (WHO) links transport-related air pollution to increased risks of cardiovascular disease, asthma, and other adverse health outcomes (Transport, n.d.). Human-caused climate change is driving more frequent and severe weather extremes, threatening food and water security, health, livelihoods, and economies worldwide (Health Risks, n.d.).

Transforming transport is therefore essential not only to reduce greenhouse gas emissions, but also to improve public health, decrease fossil-fuel dependence, and build more resilient urban futures.

1.2 The Promise of Green Mobility

A promising pathway to reducing transport-related emissions lies in the adoption of green mobility, which can be understood as a transport approach that enables people and goods to move in ways that support economic and social development, while also ensuring that transport systems are safe, affordable, accessible, efficient, resilient and low in environmental impact (United Nations Secretary-General's High-Level Advisory Group on Sustainable Transport, 2016). It aligns directly with SDG 11.2, which calls for safe, affordable, accessible and sustainable transport systems for all, especially through the expansion of public transport (United Nations Secretary-General's High-Level Advisory Group on Sustainable Transport, 2016). This pathway of green mobility includes electric cars, electric buses, electric two- and three-wheelers, e-bikes, e-scooters, Bus Rapid Transit (BRT) systems, walking, cycling and better-integrated public transport (Shukla et al., 2022b). These solutions are already being implemented across various vehicle segments. Notably, battery electric vehicles demonstrate lower life-cycle greenhouse gas emissions compared to internal combustion vehicles when charged using low-carbon electricity(Shukla et al., 2022b).Therefore, green mobility offers a concrete opportunity for decarbonisation, especially when vehicle electrification is integrated with cleaner power systems.

The global transition toward green mobility is accelerating. By the end of 2024, the global electric car fleet had reached nearly 58 million, over three times the size recorded in 2021, and had displaced more than 1 million barrels of oil consumption per day (International Energy Agency, 2025c). The International Energy Agency forecasts that electric car sales will surpass 20 million globally in 2025, making up more than a quarter of all cars sold worldwide (International Energy Agency, 2025c). Research also supports the emissions-reduction potential of electric transport, though the benefits are strongly influenced by factors such as electricity generation sources, vehicle size, battery production, and transport behaviour (Šimaitis et al., 2025). Across 5,000 comparative cases, battery electric vehicles consistently show the lowest carbon footprints, with average emissions 32–47% lower than hybrid combustion vehicles under climate-compatible scenarios (Šimaitis et al., 2025) implying that the environmental impact of electric vehicles will continue to improve as electricity grids shift toward cleaner energy.

However, despite these positive global trends, the transition remains highly uneven. China leads the global market, with electric cars making up nearly half of all car sales in 2024, while Europe holds a 20% market share (International Energy Agency, 2025c). In contrast, Africa is still in the earliest phase of its green mobility journey. Although electric car sales on the continent more than doubled in 2024, they accounted for less than 1% of total car sales (International Energy Agency, 2025c). Key barriers in Sub-Saharan Africa include high purchase prices, unreliable electricity networks, inadequate charging infrastructure, and weak policy frameworks (Gicha et al., 2024). A global review of electric vehicle adoption further highlights persistent obstacles such as high vehicle prices, long charging times, limited charging stations, and range anxiety

(Pamidimukkala et al., 2024). These challenges indicate that the e-mobility transition is not simply about technology availability; it is deeply influenced by issues of affordability, infrastructure, electricity access, policy consistency, and market readiness.

Electricity access further complicates the green mobility transition. According to the 2025 Tracking SDG 7 report, 565 million people in Sub-Saharan Africa lacked access to electricity in 2023, accounting for 85% of the global population without electricity (International Energy Agency et al., 2025). While this does not preclude e-mobility in Africa, it underscores the necessity of integrating EV deployment with renewable energy expansion, grid strengthening, off-grid solutions, and strategically located charging infrastructure. Without such measures, electric mobility risks becoming an urban, elite phenomenon that excludes peri-urban and rural populations.

To address these challenges, many countries are leveraging policy, regulation, and public investment to accelerate e-mobility. The European Union's Sustainable and Smart Mobility Strategy targets a 90% reduction in transport emissions by 2050 (European Commission, 2020). China's New Energy Vehicle Industry Development Plan (2021–2035) provides a comprehensive framework for technological innovation, industrial growth, and charging infrastructure (State Council of the People's Republic of China, n.d.). India aims for a 30% EV share of total vehicle sales by 2030, supported by the FAME-II scheme (NITI Aayog Launches the Report on 'Unlocking a $200 Billion Opportunity, n.d.) (*Current Status of Fame II Scheme*, n.d.) and the PM-eBus Sewa program, which will deploy 10,000 electric buses through public-private partnerships (PMeBUSSEWA, n.d.). These examples illustrate the critical role of policy in overcoming market and infrastructural barriers.

Across Africa, progress is also evident, albeit highly uneven across countries and vehicle segments. The 2025 Africa E-Mobility Alliance report highlights that at least thirteen African countries, including Kenya, Rwanda, Uganda, Ethiopia, Morocco, South Africa, Ghana, and Nigeria have introduced national strategies or major policy initiatives to promote EV adoption (Africa E-Mobility Alliance, n.d.). In East Africa, countries such as Ethiopia, Kenya, Rwanda, Tanzania, and Uganda are identified as regional leaders, although adoption rates remain low and growth are concentrated primarily in local assembly and the two-wheeler market (Agora Verkehrswende, n.d.).

Several country-level examples further illustrate the ongoing transition. South Africa's 2023 EV White Paper addresses the dual challenge of shifting both the domestic automotive market and industrial capacity towards electric vehicles (Department of Trade, Industry and Competition, 2023). Morocco has adopted Euro VI emissions standards for new vehicles and is positioning itself as an automotive manufacturing hub for the EV era (Morocco - Enforcement of Euro VI Standards | Climate & Clean Air Coalition, n.d.). Ethiopia has implemented one of the world's

most progressive policies by banning the importation of gasoline and diesel vehicles from 2024, coupled with duty-free incentives for electric and hybrid vehicles (Ayetor et al., 2025).

Moreover, adopting green mobility can also address urban congestion and enhance transport efficiency by encouraging a shift from private cars to shared, public, or lighter modes of travel ('Shared Electric Scooters and Electric Bikes Can Reduce Traffic in Urban Centres', 2022).
In addition, the public health rationale for green mobility is especially compelling in African cities, where rapid urbanization, ageing vehicle fleets, inadequate emission controls, and limited air-quality monitoring have increased exposure to harmful pollutants (Fisher et al., 2021). The Lancet Planetary Health estimated that air pollution contributed to 1.1 million deaths across Africa in 2019, with 394,000 directly linked to poor air quality (Fisher et al., 2021). In Kenya, road transport accounted for 61% of nitrogen oxide and 39% of fine particulate matter emissions in 2010 (Mbandi et al., 2023a). In Nairobi, fossil-fuel combustion was found to be the primary source of black carbon, underlining the urgent need for cleaner transport options (Kirago et al., 2022).

Africa's demographic structure gives young people a central role in shaping future development, with over 400 million individuals aged 15–35 (Femi-Lawal et al., 2026). Youth are not only transport users, but also potential innovators, entrepreneurs, advocates, and early adopters in the e-mobility ecosystem. Increasingly, research recognizes the ability of young people to drive sustainable change and enhance the legitimacy and effectiveness of climate action (Thomaes et al., 2023).
Understanding young people's perceptions of green mobility is therefore essential. Their views on affordability, infrastructure, safety, digital access, and employment opportunities will influence how rapidly e-mobility is adopted and scaled. If youth are meaningfully included, green mobility can support a just transition reducing emissions, improving air quality, broadening access to opportunities, and fostering healthier, more inclusive cities.

1.3 Kenya's Context

Kenya's transition to electric mobility is both urgent and complex. Like many rapidly developing countries, Kenya faces high rates of urbanization and industrialization, particularly in cities such as Nairobi, Kisumu, and Mombasa. Persistent traffic congestion in these urban centers contributes to increasing emissions, deteriorating air quality, road safety challenges, and economic inefficiencies. Transport accounts for approximately 11% of Kenya's total greenhouse gas emissions, which are projected to rise to nearly 15% by 2030 if current growth in vehicle ownership continues (A Street-Level Assessment of Greenhouse Gas Emissions Associated with Traffic Congestion in the City of Nairobi, Kenya, n.d.).

Road transport is the backbone of Kenya's freight and passenger movement, with public transport dominated by matatus and boda-bodas, and freight relying heavily on trucks (Mbandi et al., 2023b). However, this reliance is compounded by an aging, poorly serviced vehicle fleet, 97% of which consists of imported second-hand vehicles (Mbandi et al., 2023b). These dynamics make emission control especially difficult in urban areas, where congestion, informal mobility modes, and weak enforcement of emission standards intersect. For example, in 2010, Kenya's road transport sector was responsible for 61% of total nitrogen oxide emissions, 39% of fine particulate matter, and 20% of carbon dioxide emissions (Mbandi et al., 2023a). If left unchecked, road transport emissions could increase between four- and thirty-one-fold by 2050, with motorcycles driving most of the pollutant increase (Mbandi et al., 2023b).

The urban air-quality burden is already acute. A Nairobi-based study found that fossil-fuel combustion accounted for approximately 85% of black carbon emissions, highlighting traffic-related pollution as a significant threat to urban health and liveability (Kirago et al., 2022).

Kenya's electric mobility transition is in its infancy, presenting both significant promise and notable challenges. The market is gradually expanding in 2023, the Energy and Petroleum Regulatory Authority (EPRA) recorded 2,694 new EV registrations, bringing the national total to 3,753 (36). Nonetheless, EVs accounted for just 1.62% of vehicles registered that year, underscoring their marginal role in Kenya's overall vehicle market (Energy and Petroleum Regulatory Authority, 2024).

Industry data from the Electric Mobility Association of Kenya indicate growth: new EV registrations rose from just 65 in 2018 to 4,048 in 2023 and 9,144 in 2024, with the strongest uptake in electric motorcycles and light mobility segments (Electric Mobility Association of Kenya, 2025). Kenya Power reported nearly 9,047 EVs registered by May 2025 (Kenya Power PLC, n.d.). Despite this rapid expansion, the market remains dominated by electric motorcycles and bicycles, which constitute about 90% of the national EV fleet, while electric buses and four-wheelers continue to lag (Electric Mobility Association of Kenya, 2025).

Charging infrastructure is a critical constraint with the distribution uneven. Nairobi hosts about 270 of the country's 300 public charging points, with Mombasa and Kisumu far behind (Mose, Hezbon et al., 2025). Moreover, charging infrastructure alone will not ensure a successful transition. Uncoordinated EV charging could overload the grid, increase peak demand, and pose risks to transformers (Lukuyu et al., 2024). Effective demand-side management, peak control, and infrastructure upgrades are essential to support large-scale e-mobility adoption.

Kenya's renewable energy profile presents a major opportunity for a cleaner transition in transport. Approximately 90% of Kenya's electricity production comes from renewable energy sources such as wind, hydro, and solar, with geothermal power forming the largest electricity source at about 40% (Rotich et al., 2024). This gives Kenya a distinct advantage: if electric

mobility is powered by the country's relatively clean electricity mix, it can reduce both fossil-fuel dependence and transport-related emissions.

The policy case for accelerating e-mobility is also linked to Kenya's climate commitments. Kenya's transport-sector emissions reduction target under the Nationally Determined Contribution is 3.46 $MtCO_2e$ which is to be achieved through a sustainable and low-carbon mobility pathway (Republic of Kenya, 2025). It identifies affordable and reliable energy as a driver of transport decarbonisation through the transition to e-mobility. Its Draft National E-Mobility Policy seeks to position the country as a leader in Africa's electric mobility transition and sets out a mission of building a more sustainable, efficient and equitable transport system powered by e-mobility (Ministry of Roads and Transport, 2024). EV growth has also been supported by excise-duty exemptions for two- and three-wheelers, VAT exemptions for batteries, buses, motorcycles and bicycles under the Finance Act 2023, which reduced import duties for locally assembled EVs and EPRA's reduced e-mobility tariff (Electric Mobility Association of Kenya, 2025). This policy direction is important because Kenya's e-mobility market is growing, but still depends heavily on enabling infrastructure, fiscal incentives and local skills development. However, four-wheelers and larger commercial EVs still face high upfront costs and insufficient charging infrastructure (Electric Mobility Association of Kenya, 2025). This suggests that Kenya's e-mobility transition is advancing fastest where business models reduce costs for users, especially in two-wheelers and battery swapping.

Kenya's opportunity lies in its rapidly expanding EV market and relatively clean electricity mix. The challenge lies in the small share of EVs within the total vehicle fleet, the concentration of charging infrastructure in Nairobi, the need for grid-aware planning and the importance of ensuring that young people, counties and private-sector actors are included in the transition. Without these supporting measures, electric mobility may grow, but unevenly and without fully contributing to Kenya's broader sustainable development agenda.

Youth are central to this transition because they are both transport users and potential innovators within the e-mobility ecosystem. Young and technically literate consumers are often open to electric mobility but remain concerned about purchase costs, charging infrastructure, range limitations, battery performance and the perceived practicality of EVs. A 2025 study in Poland, for instance, found that technically educated youth viewed EVs positively but still identified high costs, inadequate charging networks and range anxiety as important barriers (Manev et al., 2025). This aligns with broader peer-reviewed evidence showing that environmental concerns, charging infrastructure, technological factors and total cost of ownership influence EV adoption intentions (Gupta, 2025).

For Kenya, this means that youth-focused e-mobility policy should go beyond awareness campaigns. It should address the practical issues that young people are likely to face affordability, financing, charging access, technical training, safety, employment and

entrepreneurship opportunities. If these barriers are addressed, e-mobility can become more than a climate solution; it can become a pathway for youth employment, local manufacturing, digital innovation, battery services, repair skills and renewable-energy entrepreneurship.

1.4 Problem Statement

Despite growing youth engagement in e-mobility as EV owners, boda boda riders, delivery operators, and charging station technicians, structural barriers continue to constrain their participation. These include limited access to finance, technology, skills, markets, and supportive policy frameworks, as well as weak alignment between education systems and emerging green economy needs.

Many young people remain oriented toward formal employment, leaving them unprepared for entrepreneurial and informal opportunities within the expanding yet unstructured green mobility sector. Furthermore, there is a limited evidence base on youth engagement in e-mobility, including their perceptions, challenges, and potential contributions. This knowledge gap risks policy misalignment and missed opportunities to harness Kenya's youth demographic for an inclusive, low-carbon transition.

This study therefore seeks to examine the barriers and opportunities facing Kenyan youth in the green mobility sector, identifying skill gaps, policy gaps, and enabling factors that can inform youth-responsive strategies for Kenya's green economy transition.

1.5 Research Questions

•What is the level of awareness, knowledge, and perception of Kenyan youth on green mobility?

• What is the current landscape of green opportunities in e-mobility within the green transition sector, especially for the Kenyan youth that can be leveraged to facilitate the green transition shift?

•To what extent are the young people currently involved in e-mobility? What is their contribution?

•What are the opportunities, major constraints, barriers, and challenges impeding a young person's role and contribution to the green mobility shift in Kenya? (Access to green jobs, tech, financing, infrastructure, training, skills, policy involvement?)

•How can the government and development programs be tailored to accelerate and support their contribution towards green mobility and its potential role in addressing youth unemployment?

•What types of strategies, policies, and interventions can improve youth inclusion in green transition, as well as in public and political discourse and participation?

1.6 Overall objective

To assess the challenges and opportunities of green mobility within Kenya's green transition ecosystem, with a focus on youth engagement.

1.7 Specific Objectives

1. Assess the perception of green transition among the Kenyan youths leading green mobility

2. Evaluate the challenges and enabling factors of these youths who are already actively working in the green mobility sector in the green transition

3. Identify opportunities for growth in the green mobility sector within the green transition ecosystems

4. Provide recommendations for strategies, policy reform, and development interventions that can enhance youth inclusion, employment, and voice in the green mobility sector.

2. RESEARCH METHODOLOGY

2.1 Overview

This section outlines how the study was conducted to understand the experiences, challenges, and opportunities for young people in Kenya's green mobility ecosystem. The research combined document review, focus group discussions (FGDs), and key informant interviews (KIIs) across six cities and peri-urban centres.

2.1 Study Design

The study applied a descriptive cross-sectional design, providing a snapshot of youth perspectives and experiences in Kenya's e-mobility sector. This approach captured voices from different actors across multiple regions and levels of engagement—ranging from riders and technicians to policymakers and industry representatives.

2.3 Target Population

The research focused on 60 youth aged 18–35 years, ensuring that young voices guided the analysis and recommendations.

Study locations:

- Cities: Nairobi, Mombasa, Kisumu
- Peri-urban areas: Thika, Kitengela, Rongai

Participant profiles included:

- Electric boda boda riders and EV drivers
- Electric bus driver
- Technicians and mechanics
- civil society representatives

Key Informant Interviews (KIIs)

To complement youth voices, 9 KIIs were held with decision-makers and experts:(1 NITA,1 NTSA, 2 ASSEMBLERS,1 MATATU ASSOCIATION, 1 EU, 2 CSOs, 1INGO.

Purpose: To capture expert insights on the policy landscape, institutional capacity, financing, and enabling conditions for youth inclusion in e-mobility.

2.4 Scope of the Study

The research covered six major urban and peri-urban centres, Nairobi, Mombasa, Kisumu, Thika, Kitengela, and Rongai, representing Kenya's largest and fastest-growing transport and economic hubs. These areas were chosen because they: Have high vehicle density and energy consumption,

experience frequent traffic congestion and elevated carbon emissions and represent key sites for potential e-mobility growth and youth innovation

> **Key Insight:** These towns are strategic entry points for scaling up electric mobility and fostering green jobs for youth.

2.4 Sampling Approach

The study used purposive sampling, selecting participants based on their involvement and relevance to e-mobility. This approach ensured the inclusion of informed voices from youth practitioners to policy actors capable of providing meaningful and practical insights.

2.5 Data Collection Methods

2.5.1 Document Review

A targeted review of national and international literature, government reports, and policy papers on e-mobility was undertaken. (i) Helped map existing policies, strategies, and gaps. (ii) Informed the development of guiding research questions. (iii) Provided background on Kenya's e-mobility policy environment and youth engagement.

2.5.2 Focus Group Discussions (FGDs)

Six FGDs were conducted across the six study locations.

- Participants: 60 youths (10 per group), aged 18–35 years.
- Languages: English and Kiswahili.
- Format: Open-ended discussions using a flexible guide.

Focus areas included:

- Youth experiences with e-mobility
- Barriers to participation
- Economic and social opportunities
- Policy and regulatory challenges

Youth Perspective

"Access to financing and affordable charging infrastructure would make e-mobility more practical for us." — Electric boda boda rider, Nairobi

2.5.3 Key Informant Interviews (KIIs)

In-depth interviews were conducted with 9 stakeholders from public, private, and development sectors to gain institutional insights.

Themes explored:

- Policy frameworks and enforcement
- Stakeholder coordination
- Financing and incentives
- Inclusion of youth and local innovators

Institutional Viewpoint

"There's strong potential for youth-led enterprises in e-mobility if policy incentives are aligned with innovation support." — County official, Kisumu

2.6 Domains of Analysis

The study was guided by four key domains of analysis, designed to capture the full spectrum of youth experiences, opportunities, and perspectives within Kenya's green mobility transition.

a) Perception of the Green Transition

This domain explored youth knowledge, awareness, and perceptions of green mobility. It focused on how young people understand sustainability and their motivations for adopting or engaging in e-mobility. Key aspects included: (i) Awareness of environmental benefits of electric mobility. (ii) Motivations for purchasing or using electric bikes

b) Opportunities in the Green Mobility Sector

This domain focused on emerging and underutilized opportunities in the sector. It assessed how young people view innovation, entrepreneurship, and problem-solving within e-mobility as potential drivers for employment and sustainable growth.

Areas explored included: (i) Youth entrepreneurship and start-up potential. (ii) Innovation and local manufacturing opportunities (iii) Employment and skill development pathways. (iv) Green technology incubation and financing options

c) Challenges Faced by Youth in the Sector

This domain examined the key barriers limiting youth participation in green mobility. The study captured both operational and policy-level challenges that affect adoption and growth.

d) Policy Recommendations

This domain focused on participants' understanding of existing policy frameworks, their effectiveness, and gaps that need to be addressed. Respondents were also asked to propose actionable policy recommendations that could accelerate the transition and enhance youth engagement.

2.7 Data Analysis Techniques

All qualitative data were analysed through thematic analysis, allowing the research team to identify recurring ideas and themes from both the Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs).

Key steps included:

1. Transcription and familiarisation with the data.
2. Coding to group similar responses.
3. Theme development around the four domains of analysis.
4. Synthesis of findings to highlight actionable insights for policymakers.

Data from the document review were examined using qualitative content analysis to identify policy gaps, trends, and opportunities within Kenya's e-mobility landscape. Emerging themes included: (i) Youth awareness and participation in green mobility. (ii) Barriers to market entry and innovation. (iii) Institutional and policy bottlenecks. (iv) Gender and inclusivity in the green transition.

2.8 Ethical Considerations

The research followed strict ethical standards to ensure credibility, transparency, and participant protection.

2.8.1 Approvals and Permissions

Authorization to undertake the study was sought from FEMNET, the SDG Kenya Forum, and the European Union Delegation to Kenya.

2.8.2 Informed Consent and Voluntary Participation

All participants were clearly informed about the purpose of the study, their right to decline participation, and their freedom to withdraw at any stage without any consequences. Informed consent was obtained prior to any engagement.

2.8.3 Confidentiality and Data Security

To uphold anonymity, no personally identifying information—such as names, phone numbers, or addresses—was collected during data gathering. All data is securely stored in locked cabinets and in password-protected digital files that are accessible only to the research team.

2.8.4 Training and Research Ethics

Research assistants, including members of the Youth Sounding Board (YSB), received training on ethical data collection practices, informed consent procedures, and the proper handling and safeguarding of qualitative information.

2.8.5 Ethical Assurance

All research procedures were designed to ensure that participants' dignity, safety, and confidentiality were fully protected throughout the study.

2.9 Limitation of the study

While the study provides valuable insights into youth participation in Kenya's green mobility sector, several limitations were encountered during data collection.

First, the sample was predominantly composed of electric motorcycle riders, with limited representation from EV car owners and bus drivers. Despite repeated outreach, many EV car owners did not attend scheduled interviews, constraining the ability to capture diverse user perspectives across the broader e-mobility ecosystem. As a result, the findings primarily reflect experiences within the two- and three-wheeler segments rather than the full spectrum of electric transport modes.

Second, commercial EV company representatives and assemblers were underrepresented in the Key Informant Interviews (KIIs). Despite multiple follow-up emails and phone calls, most company owners did not respond or declined participation. Some potential informants also requested financial compensation as a condition for interview participation, which was beyond the scope of this study's ethical and financial protocols. This limited access to private sector perspectives on supply chain, financing, and operational challenges.

These limitations may have influenced the depth and balance of stakeholder representation. Nonetheless, the study's triangulated approach drawing from focus group discussions, KIIs with available stakeholders, and literature reviews helped to mitigate potential biases and ensure the robustness of the analysis.

3.0 RESULTS AND DISCUSSIONS

3.1 Overview

The study engaged a diverse group of participants across Kenya's emerging green mobility ecosystem, including electric motorcycle (boda boda) riders, electric car and hybrid vehicle users, and electric bus drivers. Most respondents had completed secondary or tertiary education, reflecting a relatively literate and adaptable workforce well-positioned to engage with new transport technologies and innovations.

Despite this promise, the sector remains overwhelmingly male-dominated. Only a small proportion of respondents were women, and those who participated reported facing persistent gender biases. For instance, some female drivers shared that clients frequently canceled rides upon realizing that a woman had been assigned illustrating how deep-rooted social norms and stereotypes continue to limit women's participation in public transport and mobility services.

Overall, the findings highlight that youth are at the forefront of Kenya's green mobility transition, serving as early adopters, innovators, and advocates for sustainable transport solutions. However, while enthusiasm for electric mobility is growing, its expansion remains constrained by structural challenges such as limited access to finance, inadequate charging infrastructure, and the absence of comprehensive supportive policies.

The discussion that follows is structured around the study's four analytical domains:

1. Motivations for joining the E-Mobility Sector
2. Challenges Faced by Youth
3. Opportunities in the Green Mobility Sector

3.2 Motivations for Joining the E-Mobility Sector

The decision by young people to join the e-mobility sector was driven by a combination of economic, practical, and technological factors, with environmental motivation playing only a minor role. The findings highlight that cost efficiency, digital security, and evolving market preferences are the strongest incentives for adoption among youth operators in Kenya's growing green mobility space.

a) Economic Considerations: Cost Savings and Stability

The primary motivation for adopting electric motorcycles was economic. Respondents consistently emphasized the lower daily costs of charging, maintenance, and battery swapping compared to fuel-powered motorcycles. Reduced operational expenses translated into higher savings and the ability to invest in other ventures such as agriculture, small businesses, and education.

The volatility of fuel prices further reinforced the preference for electric options. Across all

> *"When I was using a fuel bike, I would spend about 800–900 shillings a day on fuel. Now, with the electric one, I use around 250–300 shillings for a full day — just one or one and a half charges."*
>
> Youth participant, Nairobi.

locations, youth operators viewed e-mobility as a way to stabilize daily earnings and protect themselves from rising energy costs. Economic efficiency thus emerged as the most significant driver of adoption, particularly among low- and middle-income riders.

b) Security and Digital Protection

Security was another key factor influencing the shift to e-mobility. Theft of traditional motorcycles is widespread in many urban and peri-urban areas, but respondents noted that electric bikes are less vulnerable due to built-in digital safety features. Each e-bike typically requires individualized codes for battery swapping and mobile-money payments, making theft and unauthorized use difficult.

This enhanced security has increased rider confidence and reduced losses associated with theft,

> *"My fuel bike was stolen, but my electric one wasn't. It has a digital code, only I can unlock it. Even for battery swapping, you must input your own PIN and M-Pesa code."*
>
> Youth participant, Mombasa.

further motivating adoption.

c) Market Incentives from Ride-Hailing Platforms

Several respondents noted that ride-hailing and delivery platforms such as Bolt, Uber, and Glovo increasingly prioritize green mobility. Riders using electric motorcycles and cars reported receiving more ride requests, shorter wait times, and in some cases, promotional benefits or incentives. This market-driven shift has made e-mobility not only economically viable but also commercially advantageous for young operators seeking reliable income sources.

d) Accessibility and Ease of Use

> *"Online platforms now prefer riders with electric bikes. Those of us who switched, noticed that we get more jobs and higher earnings."*
>
> Youth participant, Nairobi.

Respondents also highlighted that electric motorcycles are easier to handle and operate, especially for women and persons with disabilities. The bikes' lightweight design, lower vibration levels, and automatic features were cited as factors that make them more accessible to a wider range of users.

These ergonomic and inclusive design features contribute to making e-mobility a more user-friendly alternative, particularly for groups traditionally underrepresented in the transport sector.

e) Environmental Awareness and Comfort

> *"I chose the electric bike because it's easier to handle —especially as a woman."*
> *"With my leg disability, the electric bike makes it possible for me to ride comfortably."*
>
> Youth participant, Nairobi.

While environmental consciousness played a limited role in driving initial adoption, some respondents particularly in Kisumu recognized that e-mobility contributes to a cleaner and quieter urban environment. The most commonly mentioned environmental benefit was reduced noise pollution, rather than carbon reduction or climate change mitigation.

> *"The electric cars are quiet and comfortable. My passengers like that they don't vibrate or make noise."*
>
> Youth participant, Nairobi.

Comfort also emerged as a factor influencing user preference. Riders appreciated the smoother experience, reduced fatigue, and improved passenger satisfaction associated with electric motorcycles and cars.

Overall, the dominant motivation for youth participation in Kenya's e-mobility sector is economic gain, supported by secondary incentives such as enhanced security, ease of operation, and emerging digital market preferences. Environmental motivations remain minimal, indicating a gap in awareness that future policy and outreach efforts could address through targeted communication and incentives highlighting the environmental and social benefits of green mobility.

3.3 Challenges Facing the E-Mobility Sector in Kenya

While electric mobility presents opportunities for cleaner transport and reduced operational costs, several interlinked barriers continue to limit its uptake and scalability across Kenya. The findings from interviews and focus group discussions reveal that economic, infrastructural, institutional, and socio-cultural challenges persist along the e-mobility value chain.

a) High upfront costs and financing barriers

Despite the long-term cost savings and environmental benefits associated with electric motorcycles and cars, high upfront purchase costs remain a significant deterrent to adoption. For most low- and middle-income operators, the initial investment required for electric vehicles (EVs) far exceeds that of conventional fuel-powered alternatives. Although some manufacturers and distributors have introduced flexible payment models such as lower deposits of KSh 9,500 and daily repayments of KSh 180 early adopters reported paying as much as KSh 500 per day for two years, effectively doubling the total cost of ownership to approximately KSh 400,000.

> "In two years, I'll pay almost double the cost of the bike. The creditors don't consider our struggles; they just want their money."
>
> Youth Participant, Kisumu

All respondents in the study reported acquiring their EVs through commercial loans provided by financial institutions in partnership with E-bike companies. However, many described feeling financially overburdened due to high interest rates, limited loan tenures, and rigid repayment structures. These financing conditions have created a perception of exploitation among early adopters, particularly as loan defaults or delays often result in asset repossession. Such financial constraints disproportionately affect marginalized groups, including women and youth, who typically have less access to credit, limited collateral, and weaker financial histories. As a result, these groups face exclusion from the emerging EV market, constraining inclusive growth and equitable participation in the green transport transition.

To enhance affordability and uptake, respondents advocated for policy interventions aimed at reducing financing barriers such as subsidized interest rates, government-backed loan guarantees, and partnerships with microfinance institutions. Targeted financial incentives from both government and development partners could also help lower entry costs and enable scaling up of EV ownership beyond a single bike or car, particularly among young and female operators.

b) Insufficient charging and swapping infrastructure

The limited availability and uneven distribution of public charging and battery-swapping infrastructure present a major operational bottleneck for electric motorcycle riders in Kenya. The absence of reliable and accessible energy networks directly constrains riders' productivity, mobility range, and income stability. Three main user categories emerged from the study: (i) Riders who rely entirely on swapping stations, as their motorcycles lack personal chargers. (ii) Riders with a single battery and charger, who can charge at home but face limited operational range. (iii) Riders with two batteries, who enjoy greater flexibility and extended working hours.

> "If a client wants to go 20 km out of town, I refuse. There's no station there, and I risk getting stranded."
>
> Youth Participant, Kitengela

Riders dependent on external swapping stations are particularly vulnerable to disruptions. Many reported being unable to operate when stations close often on Sundays or at night or when long queues and travel distances reduce active working time. These constraints diminish daily earnings, undermine the cost-effectiveness of electric vehicles, and create inequalities between riders with and without home-charging capacity.

The current gaps in infrastructure highlight a critical need for strategically located, reliable, and affordable charging and swapping networks across both urban and peri-urban areas. Integrating these facilities into existing transport corridors and fuel stations could reduce downtime and expand operational coverage. Furthermore, public–private partnerships and incentives for private investment in charging infrastructure would be instrumental in accelerating deployment. Without addressing these infrastructural deficits, the transition to electric mobility risks reinforcing existing socioeconomic disparities, limiting participation by small-scale operators, women, and youth.

c) Declining battery quality and performance

Battery reliability remains a key technical and economic concern among electric motorcycle riders. Respondents consistently reported a noticeable decline in battery performance over time, with newer units offering reduced range—approximately 60 km compared to 90 km previously. Such performance degradation not only shortens operating hours but also increases downtime and charging frequency, thereby diminishing profitability. Instances of sudden battery depletion mid-journey were also cited, posing significant safety risks to riders and passengers, especially at night or in remote areas. Frequent replacements and repairs further add to operational costs, undermining the long-term affordability and perceived reliability of electric vehicles (EVs).

"The old batteries were better; they could cover 90 km. Now, new ones drain faster and don't recharge when going downhill like before."

Youth Participant, Mombasa

These issues underscore the lack of standardized quality assurance and post-market monitoring systems within Kenya's rapidly growing EV market. Currently, limited regulatory oversight allows for variation in battery durability, storage capacity, and after-sales support among suppliers. Strengthening national standards for battery importation, performance testing, and recycling would enhance consumer confidence and ensure safety and value for money.

Developing partnerships between government agencies, EV companies, and research institutions could also support the establishment of battery certification frameworks, promote innovation in local battery assembly, and foster sustainable waste management practices. Without such measures, declining battery quality risks slowing EV adoption and eroding trust in Kenya's green mobility transition.

d) Contractual bureaucracies and lack of transparency

A major concern raised by electric motorcycle riders relates to the complexity and opacity of contractual arrangements with financing institutions and assembling companies. Most riders reported that they did not fully understand the terms and conditions of the loan or warranty agreements they signed. The use of highly technical language, combined with low levels of financial literacy and limited explanation from creditors, has led to widespread confusion about repayment obligations, insurance coverage, and warranty entitlements. These information asymmetries have resulted in frequent disputes particularly over spare parts costs, coverage of damaged components, and unclear liability in the event of battery or motor failure. Riders often perceive these arrangements as exploitative, further straining trust between users, financiers, and e-mobility companies.

"The contract says the motor and battery are under warranty, but when they break, we still pay. Even the medical cover they promised doesn't work."

Youth Participants from Kisumu, Mombasa and Nairobi

The lack of transparency reflects a broader governance gap in Kenya's emerging electric vehicle (EV) ecosystem. To address this, there is a critical need to establish consumer protection frameworks and standardized disclosure requirements for EV financing and warranty contracts. Simplifying contract language, mandating pre-purchase counselling, and introducing oversight mechanisms such as independent grievance redress systems would enhance accountability and

safeguard consumer rights. Strengthening institutional transparency and consumer awareness is essential not only for building confidence among riders but also for ensuring a fair and sustainable EV market transition.

e) Lack of skilled labour and prolonged downtime

A shortage of skilled electric vehicle (EV) technicians emerged as a widespread challenge across all regions. Respondents reported frequent delays and increased operational costs due to limited access to qualified service providers, particularly outside major urban centres. Riders often travel long distances to reach brand-specific repair centres, with some forced to return their motorcycles to Nairobi-based assemblers for diagnosis and repair. In peri-urban areas, local mechanics are generally capable of handling only minor issues such as brake or lighting faults, while more complex electrical problems such as controller, battery, or motor failures require specialized expertise. This gap in technical capacity contributes to prolonged downtime, reducing daily earnings and discouraging further adoption of electric motorcycles.

> "If your bike breaks down, you can wait up to six weeks for repair—but you still have to repay the loan."
>
> Youth Participants from Kisumu and Mombasa

Warranty conditions exacerbate the problem by restricting riders from using "outside mechanics," even for minor repairs, for fear of voiding coverage. Meanwhile, available training opportunities for EV maintenance remain limited, costly averaging around KSh 50,000 for a two-week course and predominantly male-dominated, creating additional barriers for women interested in technical roles. Expanding access to inclusive and affordable technical training programs, particularly through vocational institutions and public–private partnerships, is essential to strengthen local maintenance capacity. Developing certification standards and integrating EV-specific modules into existing automotive training curricula would further professionalize the sector and reduce dependence on Nairobi-based assemblers. Investing in local skills development is therefore critical to ensuring the sustainability, equity, and scalability of Kenya's electric mobility transition.

f) High cost and poor quality of spare parts

The high cost and inconsistent quality of spare parts present a major operational and financial constraint for electric motorcycle owners in Kenya. Currently, most EV components are imported, as there is minimal local manufacturing or assembly of spare parts. This dependence

on foreign supply chains creates vulnerability to price fluctuations, import delays, and limited availability of critical components.

Respondents reported that essential parts such as tires, controllers, and batteries are monopolized by a few assemblers, resulting in inflated prices and limited consumer choice. In many cases, these parts cost up to five times more than those for conventional fuel motorcycles, with riders also noting concerns about inferior quality and shorter lifespan. The lack of competition and standardized quality assurance mechanisms has further deepened frustrations among users, who perceive the market as exploitative and unsustainable.

"A tire for a fuel bike costs KSh 2,000; for my e-bike, it's KSh 9,000 and still not available in shops."

Youth Participant, Kisumu

This heavy reliance on imports not only drives up maintenance costs but also undermines the long-term affordability and scalability of electric mobility. To address these challenges, localization of EV component manufacturing and assembly should be prioritized through targeted fiscal incentives, technology transfer partnerships, and investment in small-scale production facilities. Establishing clear quality standards and certification systems for imported and locally produced parts would also enhance consumer protection and market confidence. Reducing spare part costs through local production and fair market regulation is critical to improving affordability, promoting competition, and ensuring the long-term viability of Kenya's electric motorcycle sector.

g) Design flaws and vulnerability to water damage

Several riders reported recurring technical failures linked to poor design and inadequate waterproofing of electric motorcycles. Exposure to rain or even routine washing frequently caused electrical malfunctions, including controller and battery damage, leading to sudden breakdowns and costly repairs. Such vulnerabilities are particularly problematic during the rainy season, when riders experience prolonged income loss due to repeated downtime and unreliable performance. These design flaws have eroded user confidence in electric mobility technologies and highlight broader gaps in product quality assurance and pre-commercial performance testing. The absence of enforced technical standards allows substandard models to enter the market without adequate verification of safety, durability, or environmental suitability particularly for Kenya's variable road and weather conditions.

"When it rains, water gets into the controller, and the bike stops mid-road."

Youth Participants from Kisumu, Mombasa and Nairobi

To ensure reliability and consumer trust, it is essential to establish and enforce national design and performance standards for electric motorcycles, including waterproofing, battery insulation, and safety certification requirements. Strengthening regulatory oversight and post-market surveillance would help identify and address recurrent defects, while incentivizing manufacturers to prioritize quality and durability. Improving product design and enforcing technical compliance are thus critical steps toward enhancing user safety, reducing operational disruptions, and accelerating the mainstream adoption of electric motorcycles in Kenya.

h) Digital system failures

Digital inefficiencies within battery swapping and payment systems have emerged as a significant operational challenge for electric motorcycle riders. Many battery-swapping processes depend on mobile-based applications that are poorly integrated, resulting in frequent delays, transaction errors, and user frustration. Riders reported that some platforms require multiple payment steps between mobile wallets and EV apps, increasing transaction time and operational complexity. In Kisumu and other regions like Mombasa, users also experienced system failures where swapping platforms failed to recognize battery serial numbers, preventing successful exchanges and leading to unplanned downtime.

> "Sometimes the system doesn't confirm payment, so I wait half an hour just to swap a battery."
>
> Youth Participants from Kisumu, Mombasa and Nairobi

These digital shortcomings undermine the efficiency and reliability of the EV ecosystem, particularly for riders whose earnings depend on quick turnaround times. They also expose gaps in digital infrastructure design, interoperability, and customer support, which are crucial for maintaining trust in e-mobility technologies.

To address these issues, EV companies and financial technology partners should prioritize system integration and interoperability across mobile money platforms, apps, and battery-swapping databases. Investing in user-centred digital design, real-time customer service, and regular software updates would improve efficiency and minimize disruptions. Establishing national interoperability and data security standards would further enhance reliability, transparency, and user protection within Kenya's growing e-mobility market. A streamlined and reliable digital system is therefore essential to ensure convenience, operational efficiency, and long-term confidence in electric motorcycle adoption.

i. Gender barriers

Female riders in Kenya continue to face intersecting barriers of gender bias, social stigma, and limited institutional support that restrict their full participation in the E-mobility sector. Deep-rooted stereotypes portray motorcycle riding as a masculine trade, leading to frequent discrimination by clients and male riders. Many women report that clients cancel rides upon discovering their gender, reflecting persistent doubts about women's technical competence and safety. Within male-dominated transport networks, female riders also face exclusion from key information channels, mentorship opportunities, and financial support mechanisms.

> "Clients cancel rides when they see it's a woman until I convince them I can ride well."
>
> Youth Participants from Kisumu, Mombasa and Nairobi

These challenges are compounded for women with disabilities, who encounter additional barriers related to mobility, accessibility, and social prejudice. Transport infrastructure and training programs are often not disability-inclusive, limiting participation by female riders with physical impairments. Moreover, discriminatory attitudes can discourage persons with disabilities especially women from entering or sustaining livelihoods in the motorcycle transport business.

Addressing these intersecting barriers requires targeted, inclusive interventions. Gender- and disability-responsive mentorship and training programs can enhance skills and confidence while promoting role models who challenge stereotypes. Ensuring safer, more inclusive workplaces and anti-harassment measures within rider associations can improve retention and dignity. Expanding access to affordable, adaptive financing such as microcredit and leasing schemes tailored for women and persons with disabilities—would also increase ownership of motorcycles, cars and enhance economic independence. Embedding these measures within national transport and gender equality policies is essential to advance inclusive growth, promote equitable participation, and unlock the untapped potential of women and persons with disabilities in Kenya's evolving mobility sector.

j) High commission rates by ride-hailing apps

While digital ride-hailing platforms such as Bolt and Glovo have introduced electric mobility options to promote greener transport solutions, their high commission rates remain a major concern for electric motorcycle and car riders. Respondents reported that platform deductions averaging around 21% of total earnings substantially reduce daily income, making EV operations financially unsustainable despite lower fuel costs.

Given that many riders already face high loan repayments, costly spare parts, and limited access to affordable charging infrastructure, these high commissions further erode profitability and discourage long-term commitment to e-mobility. Some riders also noted inconsistencies in fare algorithms and limited transparency on how commissions are calculated, fueling distrust between users and platform operators.

> "After paying loans, maintenance, and app commissions, there's nothing left."
>
> Youth Participants from Kisumu, Mombasa and Nairobi

To promote equitable growth of Kenya's electric transport sector, fair and transparent revenue-sharing models are essential. Partnerships between EV firms, ride-hailing companies, and regulatory bodies should ensure that digital platforms support not exploit green mobility initiatives. Introducing commission caps, offering reduced rates for electric riders, or establishing incentive programs (e.g., bonus structures or loyalty schemes) could make participation more financially viable. Aligning digital platform practices with sustainability objectives will be critical to ensuring that the transition to electric mobility delivers both environmental benefits and fair economic returns for riders.

k) Harassment by fuel bike riders

Electric motorcycle riders reported frequent incidents of harassment and social exclusion from traditional fuel-powered boda boda operators, particularly at established parking stages. These tensions stem largely from perceptions of economic competition, as electric riders often charge slightly lower fares due to reduced operating costs. In some areas, EV riders are denied access to parking spaces, subjected to verbal abuse, or intimidated when attempting to operate within fuel-bike-dominated zones. Such hostility undermines social cohesion and safety within the informal transport sector and discourages wider adoption of electric mobility. It also reflects deeper structural challenges related to the lack of awareness, weak sector organization, and absence of inclusive regulatory mechanisms to manage the transition toward greener transport alternatives.

Addressing these tensions requires deliberate stakeholder engagement and social integration strategies. Public awareness campaigns can help dispel misconceptions about electric motorcycles and promote coexistence between traditional and electric riders. At the same time, policy frameworks and cooperative agreements between EV associations, boda boda unions, and local authorities can support equitable access to stages and promote peaceful competition. Building social acceptance and mutual understanding is essential to ensuring a just and inclusive transition to electric mobility that benefits all operators across Kenya's informal transport ecosystem.

l) Weak policy awareness and slow government response

Policy uncertainty and limited stakeholder awareness remain major barriers to the effective adoption of electric mobility in Kenya. Most riders interviewed were unaware of existing or proposed electric vehicle (EV) policies, tax incentives, or county-level regulations. Even among those familiar with such initiatives, many described them as vague, poorly communicated, or inconsistently implemented. This lack of clarity contributes to misinformation, limited uptake of available incentives, and reduced confidence in the government's commitment to e-mobility transition. Key informants reinforced these concerns, highlighting delays in operationalizing the Draft National Electric Mobility Policy (launched in March 2024) and weak inter-agency coordination led by the E-Mobility Task Force. Slow policy rollout, fragmented institutional responsibilities, and limited private sector engagement have collectively hindered the scaling of e-mobility solutions.

"We hear about tax waivers for EVs, but we still pay 21%. Nothing has changed."

Youth Participant, MOMBASA

In addition, one of the Key Informant interviews revealed a challenge related to the low level of public participation in the e-mobility draft policy process. They indicated that community engagement was minimal, with only a limited number of Civil Society Organizations (CSOs) and Community-Based Organizations (CBOs) actively participating in policy discussions. This restricted involvement has resulted in gaps in representation, weakening the extent to which the policy has moved from a draft to implementation.

A more coherent, transparent, and responsive policy framework is urgently needed to sustain confidence and ensure inclusive participation across counties. Accelerating the finalisation and implementation of the national policy alongside clear fiscal incentives, import guidelines, and infrastructure standards would create a predictable environment for both manufacturers and riders. Furthermore, awareness campaigns and capacity-building initiatives targeting riders, cooperatives, and local authorities can bridge the knowledge gap and strengthen compliance.

Establishing a well-coordinated and accountable governance framework is therefore essential to drive Kenya's electric mobility transition from pilot projects toward nationwide adoption.

"We have policies on paper, but no visible action. The government support is almost zero."

Youth Participants from Kisumu, Mombasa and Nairobi

3.4 OPPORTUNITIES IN THE GREEN MOBILITY SECTOR

Despite the challenges, Kenya's rapidly growing urban and peri-urban centres present immense opportunities for advancing e-mobility and creating a resilient green economy. The sector can simultaneously address climate goals, youth unemployment, and energy dependence, positioning Kenya as a regional leader in sustainable transport.

1. Leveraging Renewable Energy Potential

Kenya's diverse renewable energy mix, comprising geothermal, hydro, solar, and wind, already contributes about 90% of total electricity generation (International Energy Agency, n.d.). With electricity access rising from 32% in 2013 to about 80% in 2023 (International Energy Agency, n.d.), the country is well placed to power electric mobility through clean, locally produced energy. This transition can reduce dependence on imported fossil fuels, cut greenhouse gas emissions, and align the transport sector with national sustainability and energy security goals. Integrating e-mobility into Kenya's renewable energy framework offers a win-win scenario expanding clean transport access while supporting the growth of the green energy sector.

2. Harnessing Youth Demographics and Urbanization

Kenya's youthful and urbanizing population represents a major driver of transport demand and innovation. With youth unemployment estimated at 67% among those aged 15–34 yrs (National Council for Population and Development, n.d.), and over 1.3 million young people working in the boda boda sector (National Crime Research Centre, 2018), e-mobility offers a pathway to convert a social challenge into an engine of inclusive economic growth. By linking e-mobility to skills development, local manufacturing, and entrepreneurship, the sector can absorb thousands of youths into new roles such as technicians, assemblers, software developers, or charging hub operators, while improving urban transport efficiency and air quality.

3. Promoting Gender and Social Inclusion

Kenya's transport industry remains male-dominated, with 97.4% of boda boda riders being men and only 2.6% women (National Crime Research Centre, 2018). Electric vehicles being lighter, quieter, and easier to operate lower the physical and social barriers for women and persons with disabilities to participate in the transport economy. Expanding e-mobility can therefore serve as a tool for empowerment, enabling greater inclusion across gender and ability lines, and promoting equitable access to green jobs and income opportunities.

4. Rising Climate Awareness and Youth Mobilization

The growing national awareness of climate change and air pollution has fueled strong youth activism and engagement. Youth-led organizations, civil society groups, and climate advocates are increasingly championing sustainable solutions, including clean transport. Although many young people are not yet fully versed in the technical aspects of e-mobility, they are environmentally conscious and tech-savvy. With appropriate policies, financing, and mentorship,

this energy can be redirected toward innovation, green entrepreneurship, and behavioral change, creating a generation that drives Kenya's low-carbon transition.

5. Alignment with National and Global Climate Commitments

E-mobility directly supports Kenya's commitments under the Paris Agreement, Agenda 2063, and the country's Nationally Determined Contributions (NDCs), which aim to reduce GHG emissions by 32% by 2030. Beyond mitigating emissions, EV adoption also helps reduce noise and air pollution, contributing to healthier, more liveable urban environments. The shift to electric mobility thus aligns with Kenya's broader policy agenda on green growth, climate resilience, and sustainable urban development.

6. Market Demand and Private Sector Integration

The rise of Kenya's gig economy through digital platforms like Uber, Bolt, and Glovo presents a ready market for EV integration. These companies are increasingly favoring EVs for their lower operational costs and alignment with corporate sustainability goals. This creates new opportunities for drivers, delivery workers, and local assemblers to engage in the e-mobility value chain. Leveraging digital platforms can ensure a steady market for EVs while providing dignified, sustainable employment for riders.

7. Wealth Creation and Green Jobs

Electric vehicles significantly reduce daily fuel and maintenance costs compared to internal combustion engine (ICE) vehicles, improving financial stability for riders. At the same time, e-mobility opens new income streams along its value chain from battery recycling and maintenance to charging station management and EV assembly. The International Labour Organization projects that the global green transition could generate 24 million jobs by 2030, many within renewable energy and transport (International Labour Organization, 2018). With targeted investment and training, Kenya's youth can benefit directly from this global shift.

8. Supportive Policy Environment

Government incentives such as VAT and import duty exemptions on EVs and spare parts, reduced parking fees, and fair financing regulations can significantly lower the cost barrier to adoption. Policies that encourage competition, local assembly, and the participation of SMEs can build a vibrant e-mobility ecosystem. Proper implementation of these measures would not only accelerate EV uptake but also create an enabling environment for innovation, private investment, and job creation.

9. Innovation and Technology Advancement

E-mobility presents fertile ground for local innovation. Current challenges such as limited charging infrastructure, short battery range, and waste management can be turned into opportunities for research and development. Respondents emphasized the need for solar-powered

charging hubs, standardized batteries, and self-charging technologies. Investing in such innovations would stimulate local manufacturing, enhance system efficiency, and create a circular economy within the sector.

10. Strengthening Climate Advocacy and Multi-Stakeholder Partnerships

Civil society, community-based organizations, and advocacy groups play a key role in advancing public awareness and policy accountability. Strong partnerships between youth groups, CSOs, and the private sector can help mainstream e-mobility in TVET curricula, promote EV technician training, and ensure government policies are effectively implemented. Sustained advocacy can drive inclusion, transparency, and faster policy action.

11. International Knowledge Exchange and Capacity Building

Kenya can benefit from knowledge exchange with countries leading in e-mobility, such as Norway and China. International collaboration can provide valuable lessons on infrastructure design, financing models, and policy incentives. Exchange programs and South–South cooperation can equip Kenyan engineers, technicians, and entrepreneurs with hands-on skills, fostering innovation tailored to local contexts. Integrating such programs into development partnerships would strengthen technical capacity and attract investment into Kenya's growing green transport ecosystem.

3.5 Conclusion

Kenya stands at the threshold of a transformative mobility revolution. As this study shows, young people are not only early adopters of electric transport technologies but also innovators, entrepreneurs, and advocates for a cleaner, more inclusive transport future. Yet, their potential is constrained by financial barriers, limited infrastructure, weak policy coordination, and persistent social inequalities, particularly affecting women and persons with disabilities.

To unlock the full promise of e-mobility, Kenya must adopt an integrated, multi-sectoral strategy anchored in strong policy leadership, private-sector innovation, inclusive financing, and targeted capacity development. Prioritizing youth empowerment within this framework is critical to achieving a just and equitable transition.

The recommendations presented in this paper in chapter 4 ranging from fiscal incentives and training investments to digital and regulatory reforms offer a practical roadmap to scale e-mobility while aligning with Kenya's Vision 2030, climate commitments under the Paris Agreement, and Sustainable Development Goals (SDGs). By investing in youth-centered green mobility, Kenya can not only cut emissions but also create dignified livelihoods, foster technological innovation, and position itself as a continental leader in sustainable transport.

4. POLICY RECOMMENDATIONS

4.1 Recommendations.

A coordinated, multi-stakeholder approach is essential to unlock Kenya's e-mobility potential. The following recommendations target key actors, government, private sector, financiers, civil society, and development partners to accelerate an equitable and sustainable transition.

1. To Government

i) Ministry of Roads and Transport

- Strengthen the Policy and Regulatory Framework: Fast-track the adoption and enforcement of the National E-Mobility Policy and establish national standards for EV batteries, spare parts, and safety.
- Enhance Infrastructure Development: Expand the national power grid reliability and incentivize charging and battery-swapping stations along highways, transport corridors, and peri-urban areas.
- Promote Fair Market Competition: License multiple providers to prevent monopolies and stimulate innovation.
- Encourage Public Sector Leadership: Introduce EV adoption quotas within government fleets and provide incentives such as reduced parking fees for electric vehicles at the county level.

ii) Ministry of Finance

- Introduce Fiscal Incentives: Provide tax breaks, subsidies, and VAT exemptions on EVs, batteries, and spare parts to make adoption more affordable.

iii) Ministry of Trade, Investment and Industry

- Support Local Manufacturing: Create an enabling business environment for local EV assembly and parts production, including higher tariffs on imported internal combustion engine (ICE) vehicles to stimulate local industry and youth participation.
- Strengthen Consumer Protection: Regulate and standardize financing interest rates to prevent exploitation by intermediaries and financiers ensuring that are youth friendly.

iv) Ministry of Environment, Climate Change and Forestry

- Enhance Public Awareness: Integrate climate change education and e-mobility awareness into national communication strategies for example through social media campaigns and youth ambassadors etc

- Advance Environmental Safeguards: Support research and legislation on battery recycling, disposal, and circular economy models.

2. To Private Sector and Investors (Bike Companies, Charging Networks, Tech Innovators)

- Enhance Product Quality: Improve battery lifespan, safety, and efficiency through continued R&D and innovation.
- Provide Integrated Service Packages: Offer comprehensive packages (bike, charger, after-sales support, and training) to increase user confidence.
- Expand Accessibility: Establish 24-hour charging and swapping stations, particularly in high-demand urban and peri-urban zones.
- Localize Technical Expertise: Train and deploy certified local mechanics at every charging hub to ensure timely maintenance and job creation in collaboration with the National Industrial Training Authority and Technical Vocational Education and Training centres across Kenya
- Ensure Affordability: Make spare parts and repair services affordable and accessible to riders through tax incentives.
- Improve Customer Experience: Develop responsive customer care systems to address complaints and service requests efficiently.
- Support Youth Enterprise Development: Partner with youth groups to create business opportunities in operating charging stations, swap points, and repair workshops.
- Advance Battery Standardization: Collaborate on universal battery standards across brands to address compatibility challenges.
- Promote Green Innovation: Invest in solar-assisted charging solutions and explore self-charging technologies to enhance resilience and sustainability.
- Improve Safety Nets: Strengthen rescue and roadside assistance services for stranded riders to increase confidence in the system.

3. To Creditors and Financiers

- Develop Inclusive Financial Products: Create affordable, flexible loan models tailored to the cash-flow patterns of boda riders and small-scale operators.
- Ensure Transparency: Use simple, clear language in loan agreements and repayment terms to build trust.

- Introduce Risk-Sharing Mechanisms: Establish credit guarantees and grace periods for riders facing temporary financial challenges due to illness or equipment downtime.
- Encourage Green Financing: Integrate e-mobility lending within broader sustainable finance portfolios to attract blended finance and impact investors.

4. To Civil Society, CBOs, and Associations

- Promote Awareness and Capacity Building: Lead training on financial literacy, contractual rights, and safety for riders.
- Champion Inclusivity: Support and mentor women and persons with disabilities to enter and thrive in the e-mobility sector.
- Strengthen Collective Voice: Facilitate the formation and growth of riders' cooperatives and SACCOs to enhance access to financing and collective bargaining power.
- Ensure Accountability: Act as watchdogs to monitor compliance, protect riders' welfare, and advocate for fair treatment by investors and the government.
- Foster Multi-Stakeholder Dialogue: Organize policy roundtables and feedback sessions between government, industry, and youth representatives to ensure inclusive policy design and implementation.

5. To Development Partners

- Invest in Capacity Development: Support technical training programs for youth in EV assembly, battery maintenance, and charging station management.
- Facilitate Knowledge Exchange: Promote South-South cooperation and knowledge sharing with leading e-mobility countries such as China, India, and Norway.
- Support Innovation Hubs: Fund and mentor local innovation labs focused on battery recycling, green transport solutions, and circular economy initiatives.
- Leverage Blended Finance: Partner with the private sector to co-finance infrastructure and R&D that advance Kenya's low-carbon transport goals.
- Promote Gender and Inclusion in Programming: Ensure that women and youth-led enterprises are prioritized in funding, training, and partnership opportunities.

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APPENDIX

QUALITATIVE DATA FGD TOOL

CONSENT

Hello,

FEMNET, SDG-Kenya, and WECF are currently implementing an EU project titled Meaningful Engagement - Transformative Action (META) for Structured CSO Dialogue in Kenya. Under the project, the Youth Sounding Board was established to strengthen the relationships and ensure youth inclusivity. The YSB is carrying out research titled "Assessing the Challenges and Opportunities for Youths in Kenya's green mobility within the Green Transition".

As part of this study, we are gathering data and information on youth involvement in Green Mobility in Kenya. The findings of this study will be disseminated widely to strengthen engagement with the Kenyan youth, the EU, and the government on Green Mobility.

Your answers will be treated with the utmost respect for your privacy and confidentiality. Your identity will remain anonymous at all times, and we will not be recording your name. This means that no one will be able to link your responses to your name, and your name will never be used in connection with any of the information you provide.

Before we start, do you have any questions about the exercise? Do you consent to participating in the interview?
YES ----------
IF No – discontinue interview

1. Can you briefly introduce your business, your inspiration, and how it is contributing to green mobility in this region?

2. As a young entrepreneur, what does green mobility mean to you?

3. Do you think green mobility is a viable opportunity for Kenyan youths? If yes, why? And if not, why?

4. What challenges are you facing? Financing, Licensing, regulations, infrastructure, skills, bureaucracy, how frequently EVs need maintenance, and which parts? –Battery -motor –wheels? -Are EV spare parts and maintenance providers available nearby? EV charging stations at least every 100 kilometres? To which place do you go in case of problems related to EV?

5. What are the current underutilised green mobility opportunities that you have identified that youths can leverage?

6. What kind of support have you had so far/ or wish you had, that you believe has kept the business moving, and what type of support is needed to catalyse the existing gaps that you are facing?

7. Are you aware of any government policies or even programs that support youth green mobility enterprises? If yes, have you benefited from them? And if not, why do you think you have not benefited from them

8. What kind of policy changes do you think can help green mobility thrive?

9. Where do you see your business in 3 years?

QUALITATIVE KII TOOL

CONSENT

Hello,
FEMNET, SDG-Kenya, and WECF are currently implementing an EU project titled Meaningful Engagement - Transformative Action (META) for Structured CSO Dialogue in Kenya. Under the project, the Youth Sounding Board was established to strengthen the relationships and ensure youth inclusivity. The YSB is carrying out research titled "Assessing the Challenges and Opportunities for Youths in Kenya's Green Transition". As part of this study, we are gathering data and information on youth involvement in the green mobility sector within the Green Transition in Kenya. The findings of this study will be disseminated widely to strengthen engagement with the Kenyan youth, the EU, and the government on the Green Transition

Your answers will be treated with the utmost respect for your privacy and confidentiality. Your identity will remain anonymous at all times, and we will not be recording your name. This means that no one will be able to link your responses to your name, and your name will never be used in connection with any of the information you provide.

Before we start, do you have any questions about the exercise? Do you consent to participating in the interview? YES ----------
IF No – discontinue interview

1. Please tell us about your organization. What are your key objectives as an institution?
2. What are your objectives for the Green Transition? What Green Mobility programmes are you currently implementing, and how are the youth involved in them?
3. What programmes do you have with bilateral partners on green mobility in Kenya (especially the EU), and how have you involved the youth in these programmes
4. How ready is the government to allocate budgets for EV R&D? Has the government planned to have some of the local universities to specialize in green mobility?
5. How have you ensured awareness of green mobility among Kenyan youth?
6. What have you done to strengthen the capacities of the Kenyan Youth in the green mobility?
7. How have you involved the Kenyan Youth on Green mobility within your Green Transition agenda? How is this contributing to creating employment and empowering the youth in the country?
8. How do you ensure Involvement (spread and reach) across the counties?
9. What are some of the challenges facing the youth on green mobility in Kenya, and what are some of the mitigation measures in place?
10. What are the opportunities for the Kenyan Youth within the government's programmes on Green Mobility?
11. What recommendations would you give on youth and green mobility in Kenya?

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