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Coventry University

E-MOBILITY PROJECT REPORT NO. 01

The Transformative Power Of Electric Mobility Technology In Kenya: Understanding And Empowering Women Entrepreneurs

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PROJECT BACKGROUND

Electric mobility (e-mobility) technology presents a significant opportunity for socio-economic transformation in Kenya, particularly given the country's reliance on renewable energy sources. However, the e-mobility sector is predominantly male-dominated, with women comprising only 1 in 25 employees globally. This underrepresentation hinders gender equality and economic empowerment for women, who face institutional, cultural, and technical barriers to entry. This project explored the business pathways for women entrepreneurs in the e-mobility sector by assessing their needs and generating evidence through quantitative and qualitative research, to enhance their skills. Key activities include conducting large-scale surveys and in-depth interviews with women and men in e-mobility for a comparative assessment. Ultimately, this initiative aspires to increase awareness of gender gaps in e-mobility entrepreneurship and contribute to a more inclusive socio-economic landscape, thereby enhancing individual empowerment and societal well-being across Kenya. By addressing systemic barriers and fostering an inclusive entrepreneurial ecosystem, this project aspires to create lasting socio-economic benefits for women, aligning with Sustainable Development Goals (SDGs) such as Gender Equality (Goal 5) and Decent Work and Economic Growth (Goal 8) while contributing to Kenya's Vision 2030 objectives.

Over a 24-month period, this initiative generated:

1. Mapped the transformative pathway of electric mobility technology in Kenya for business opportunities through a gender and inclusivity lens (Report 1)
2. Identified individual and systemic factors that enhance or constrain high-growth e-mobility entrepreneurship activities related to women within Kenya's unique institutional and cultural context, by focusing on women's needs and challenges and collected quantitative and qualitative evidence (Reports 2 and 3)
3. Developed e-mobility focused entrepreneurship training programme for pre-startups and early startups for incubators, pilot trained 18 women entrepreneurs and assessed short-term impact of the training (Report 4)
4. Developed policy and industry focused report on e-mobility and women's entrepreneurship that outlines necessary support mechanisms and recommendations (Report5)

The project partners are Coventry University in the UK and the African Centre for Technology Studies (ACTS) in Kenya, along with the Kenya Climate Innovation Centre (KCIC) and Dr Eleanor Browne, consultant in incubation process. Project funders are gratefully acknowledged:

Report 1

Scoping and Mapping of E-Mobility Sector in Kenya through a Gender and Inclusivity Lens: Where are the Business Opportunities for Women?

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1. Introduction

1.1. Background and Aim of the Report

Electric mobility (hereafter E-mobility) technology has emerged as a transformative technology and sector not only for its environmental but also socio-economic effects on individuals and the society in low-income countries (LICs). This technology and sectoral transition linked to growing transport needs and associated climate challenges is coupled with new business models and related entrepreneurial opportunities driven by gaps in the e-mobility market and advancing digital technologies. This is contributing to the low carbon, sustainable development in these countries (Ayetor et al., 2023). The dynamics of e-mobility technology in the developing countries can be life changing for its producers and users. It is an enabling technology which penetrates sectors such as retail, agribusiness, service delivery, tourism, food production, among others and increases productivity. The framing of the opportunities for uptake of these emerging technological advances is through private sector-led development typified by entrepreneurs setting up climate-technology focused enterprises (Marshall et al., 2017).

Kenya, most of its energy sourced from renewables, has great potential to exploit the production and effective consumption of e-mobility technology in its economy. E-mobility technology is seen as a catalyst in achieving Kenya Vision 2030 targets of macroeconomic and social pillars while addressing concerns related to climate change (Uzim and Dixon, 2024) as also openly stated in the most recent National E-Mobility Policy document of Kenya; MoRT, 2026). In 2020, Kenya submitted an ambitious Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat that committed to reducing emissions by 32% by 2030, with transport contributing 11% of total emissions. The target was to transition 5% of all vehicles toward e-mobility and accelerate decarbonizing transportation (MoRT, 2024; MoECCF, 2025). The NDC has currently been strengthened in the National E-Mobility Policy (MoRT, 2026) along with policy targets in shaping the e-mobility sector (see section 3.1).The targets or political ambitions, however, need to align with inclusive socio-economic outcomes and impact.

While Kenya is well-positioned to benefit, due to its high production and use of renewable energy (International Trade Administration, 2024), much of the discussion on Kenyan national e-mobility policy design focuses on addressing the financial barriers associated with the high upfront costs of adopting e-mobility technology, the constraints of lock-in governance structures that limit flexibility in policy adaptation, and strategies for encouraging widespread technology uptake (AfEMA and UNEP, 2024; MoRT, 2024, 2026). Whilst these are critical factors for advancing e-mobility transitions, discussions often overlook inclusivity and gender considerations, which are vital for ensuring equitable and sustainable outcomes.

The e-mobility sector remains heavily male-dominated, raising concerns about an inclusive transition. Globally, only one in five e-mobility workers and actors are women. In Kenya, that figure drops to one in 25[1] (ILO, 2024).

[1] Data are retrieved from https://ilostat.ilo.org/data/country-profiles/, accessed on February 2024.

This notwithstanding, current policy discussion and its potential socio-economic impact does allude to the inclusivity aspect, noting that e-mobility sector remains largely male dominated, and call for efforts to close the gender gap (MoRT, 2026). This move acknowledges that in Kenya large proportion of the female workforce that can add value through production and use of e-mobility remains untapped, increasing gender inequality, and hindering alleviation of poverty. Moreover, women entrepreneurs in Kenya often lack adequate support, facing institutional, cultural and technical barriers (Marshall et al, 2017). They are subject to judgmental perceptions related to their entrepreneurial orientation and aspirations that hamper their success in e-mobility technology. Without addressing these challenges in a timely manner, the e-mobility transition will further exacerbate the gender technology and entrepreneurial gap (Marshall et al. 2017). As it seems now, the e-mobility sector is poised to grow; however, without integration of the inclusivity aspect in the design of emerging policies that will shape the enabling environment, it is likely to skew the positive socio-economic outcomes, hence the urgent need to change this trend by ensuring an inclusive transformation in the sector.

In nutshell, the e-mobility sector represents a vital frontier for sustainable development and technology-induced economic transformation, where rapid urbanization and environmental challenges demand innovative solutions in manufacturing and transportation in Kenya. Empowering women employees and entrepreneurs within this sector is crucial not only for fostering innovation but also for driving job creation and promoting gender equality as part of contributing to inclusive socio-economic development.

This report aims to respond to the urgent and pressing issue of inclusivity in the fast-advancing e-mobility sector in Kenya by reviewing the extant literature, current practice and policy domains and by mapping the transformative pathway for emerging business opportunities and entrepreneurship for women. To this aim, we present the current state of e-mobility value chain and newly emerging e-mobility ecosystem in Kenya which presents business opportunities for women through entrepreneurship and its support mechanisms. We highlight especially women's needs; challenges they face and opportunities available to them in e-mobility. Our aim is to make the case for gendered transformative e-mobility policy and practice pathways as well as provide evidence for women's challenges and needs in the sector in line with the aims of recently launched National E-Mobility Policy (MoRT, 2026) that aims to act upon the latter by December 2026.

In the short-run, our findings are likely to increase awareness about the gender gaps in the e-mobility entrepreneurship and related policy process, and in the long run increase the number of women in the e-mobility entrepreneurship value chain, impacting the individual, societal and economic wellbeing. Our research's outcomes are directly and primarily relevant to development challenges that are specified in Kenya Vision 2030 macroeconomic and social pillars and aims at making scientific and policy development contributions. Through the findings of our research, we aim to emphasise opportunities in e-mobility sector as a productive use of technology option that can contribute to alleviation of poverty. This can occur through support of marginalised and vulnerable segments of the society particularly in women as well as identifying skilled women entrepreneurs' role in decarbonisation of Kenyan industries.

1.2. Structure of the Report

This report is structured as follows. Section 2 informs on the current status of e-mobility sector in the Global North, Global South and Kenya and provides a brief comparison. Section 3 introduces the recently launched National E-Mobility Policy of Kenya and examines it from a gender perspective; describes the status of existent e-mobility ecosystem support organisations and informs on the e-mobility value chain and infrastructure. Section 4 focuses on existing businesses (startups and companies) operating in the e-mobility sector in Kenya and their operation areas within the sector from a business opportunities perspective. Section 5 provides views on the applicability of business opportunities for women. Section 6 discusses the challenges and needs of women in the sector based on the quantitative survey and interviews conducted in this project (for details, see Reports 2 and 3). Section 7 presents best practice cases of four women entrepreneurs operating in e-mobility sector in Kenya.

2. E-Mobility in the Global North, Global South and Kenya

The adoption of electric mobility is growing worldwide, yet significant discrepancies exist between the Global North and the Global South in terms of types of e-vehicles used, infrastructure development, market penetration, and policy frameworks in place.

E-mobility refers to the use of vehicles powered by electricity for transportation. This can encompass a wide range of vehicles, including cars, buses, scooters, motorbikes, bicycles and even trains and ships. The core concept is to replace traditional fossil fuel-based vehicles with those that utilize electricity, offering a more sustainable and environmentally friendly alternative. In the Global North, electric cars, vans, buses and trains are the dominant form of e-vehicles. In the Global South and particularly in Sub-Saharan Africa, most journeys are undertaken using privately owned electric vehicles (EVs), known as paratransit which include bicycles, motorbike taxis (e.g., boda-bodas), minibuses (e.g., matatus), and auto-rickshaws (e.g., tuk-tuks) (Collett and Hirmer, 2021; Collett et al., 2021).

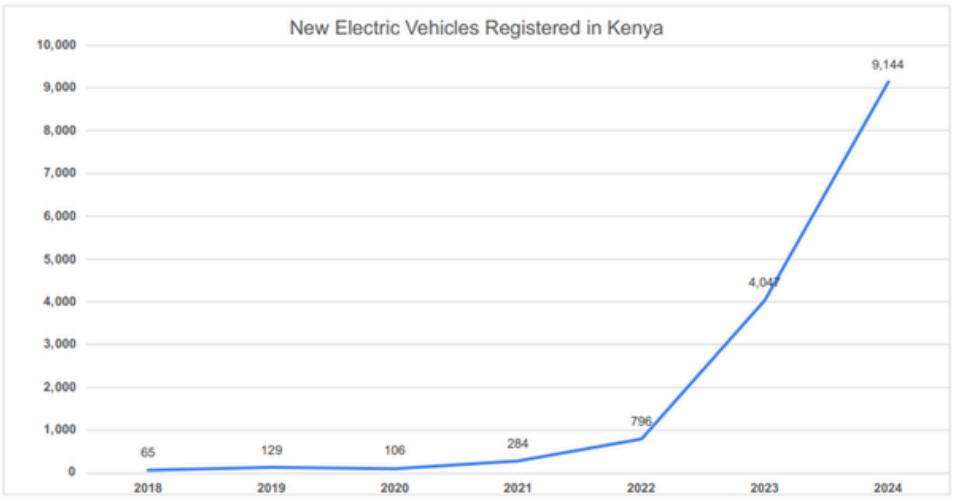
In the Global North, The International Energy Agency (IEA, 2025) reports that around 18-20% of vehicles sold in Global North advanced countries were electric, but there is variation across countries. In Europe the uptake is ~28% with Norway as an outlier and clear lead since 96% of all newly registered vehicles are electric; in the USA, Canada and South Korea ~10%, whilst in Japan the uptake is only 3-4%. Norway deliberately implemented extensive and well-planned EV policy for years, such as generous subsidies complemented with strong EV infrastructure (Bjerkan et al., 2016; Figenbaum, 2017). Currently, while countries in the Global North benefit from established energy grids, high levels of consumer awareness, and generous subsidies for EV buyers that resulted in uptake of EVs, many Global South nations face significant challenges and are still in the early stages of e-mobility penetration, with electric vehicle rates below 1% of the total vehicle market (African Development Bank, 2020). EV uptake in the Global South is predominantly hindered by overall economic conditions, i.e. EVs are perceived as prohibitively expensive by the consumers based on their purchasing power, and insufficient infrastructure. The upfront costs of electric vehicles remain a significant barrier, with EVs priced 30-50% higher than conventional vehicles (Bloomberg NEF, 2023).One exception in the Global South is China with nearly 55% of newly registered vehicles being EVs and China manufacturing more than 60% of all EVs sold globally (IEA, 2025).

Chinese EV production at lower costs than the Global North helped drive EV uptake in some emerging markets in the Global South. For instance, share of BEVs in newly registered vehicles in India, Thailand, Viet Nam, Indonesia and Brazil range from 50-80%, but yet to increase in some other Global South countries such as Mexico, Turkey, Colombia, South Africa, Morocco (IEA, 2025). Indeed, India has taken over China in sale of 2W EVs since 2023 where China moves to production and sales of 4W EVs (IEA, 2025).

The World Bank (2023) estimates that the market for electric vehicles in Kenya is projected to grow at 18% annually, provided adequate infrastructure, policy incentives, and financing options are made available. This contrasts sharply with countries like India, where government-led initiatives have accelerated e-mobility growth, with 25% of all new three-wheelers sold being electric (World Bank, 2023). Nevertheless, Kenya's uptake of e-mobility paratransit vehicles has doubled from 2024 to 2025. The Electric Mobility Association of Kenya (EMAK) reported in June 2025 that there are approximately 9,144 EVs registered in the country currently (Fig.1), with 796 and 4048 registered in 2023 and 2024, respectively (Table.1). Most recent unpublished figure is 35661 registered EVs as of July 2026.[2] Such sudden spike in EV registration seems to have its roots in the very recent announcement of the Kenyan Government on waiving the duties on the first 100,000 EVs imported.[3] Moreover, MoRT (2026: 27) projects and targets new EV registrations are over 465,000 by 2043 in Kenya surpassing ICE registrations of 382,000.

In line with the e-mobility trends across Sub-Saharan Africa, 2W e-bikes and e-motorcycles account for almost 92% of total EVs in Kenya. According to EMAK (2025) the total share of EVs (including electric bicycles) rose from 2.42% in 2023 to 5.40% in 2024 showing an increase of the proportion by 45%.[4]This figure is quite promising for Kenya, as the average figure is increasing in the Global South which includes the high rates of EV adoption in China and India (IEA, 2025).

Figure 1. Number of 2W/3W/4W electric vehicles registered in Kenya (2018 to 2024).



Source: EMAK (2025) Electrifying Kenya's Transportation Sector: Fiscal Benefits and Policy Measures to Promote Electric Mobility, June 2025, downloadable at https://e-mobilitykenya.org/

[2] Verbal communication and presentation by Eng. Carl Otwack, Project Coordinator in sustainable infrastructure policy at Kenya Ministry of Energy and Petroleum, at Stakeholders Policy Workshop in Nairobi on 15 July 2026.
[3] https://citizen.digital/article/govt-waives-duty-on-first-100000-electric-vehicle-imports-n383210 , accessed on 15 July 2026.
[4]https://www.esi-africa.com/news/kenya-ev-numbers-surge-more-charging-stations-to-be-rolled-out/, accessed on 8 August 2025.

Table 1. New electric vehicle registrations in Kenya by vehicle classification (2018 - 2024)

Type of EV	2018	2019	2020	2021	2022	2023	2024	Total
Electric Bicycles[6]					321	1,353	3,850	**5,524**
Electric Motorcycles	44	96	28	144	366	2,557	4,862	**8,097**
Electric Tuk-Tuks		4	21	35	40	39	185	**324**
Electric Passenger Cars	12	15	31	62	36	47	123	**326**
Electric Buses & Minibuses					3	19	32	**54**
Electric Other Vehicles	9	14	24	43	30	33	92	**245**
Total EVs	**65**	**129**	**104**	**284**	**796**	**4,048**	**9,144**	**14,750**

Source: EMAK (2025) Electrifying Kenya's Transportation Sector: Fiscal Benefits and Policy Measures to Promote Electric Mobility, June 2025, downloadable at https://e-mobilitykenya.org/

Although still in its early stages, Kenya's e-mobility sector demonstrates considerable potential, particularly in urban regions where pollution, traffic congestion, and energy concerns are critical issues. The government's initiatives to advance e-mobility align with national environmental and climate objectives, such as those outlined in the National Climate Change Action Plan and Kenya's Nationally Determined Contributions (NDCs). Having started with the 2021 "RoadMap to e-Mobility in Kenya" which highlights policies like reduced excise duties on electric vehicles to encourage adoption, infrastructural planning and advances in the recent years have been instrumental in the increased uptake of EVs. These efforts face substantial challenges, including limited charging infrastructure, high upfront costs for consumers, and poor coordination among stakeholders in both the public and private sectors (RoadMap to e-Mobility in Kenya, 2021; E-Mobility Women in Kenya, 2023). Most importantly, the significant rise in the adoption of 2/3W EVs during the last couple of years highlights the role of these vehicles in providing business opportunities which seem to be favourable for women. Yet, women remain considerably underrepresented in the sector.

3. E-Mobility sector in Kenya: Policy, value chain and infrastructure

Kenya's e-mobility sector has shown very fast progress during the last several years. This progress has been majorly driven by the very supportive state policies in renewable energy and transport areas which positively influenced the uptake of EVs and created many business opportunities in the e-mobility value chain. Simultaneously, public and private support organisations emerged, and others diverted efforts into supporting e-mobility activities. The state-led efforts have been complemented by the private sector in terms of both small and large and foreign and domestic e-mobility companies actively entering the sector due to high technological and market opportunities.

These remarkable and fast paced advances hint a transformation from an e-mobility value chain to the emergence of a successful e-mobility ecosystem where actors are connected and knowledge flows take place among the actors. The next sub-sections map the current situation in e-mobility in Kenya regarding the e-mobility policy, infrastructure, support organisations and value chain from a gendered perspective so as to understand what kind of opportunities exist for women within this fast-emerging inclusive e-mobility ecosystem.

3.1. Kenya's National E-Mobility Policy: A gendered perspective

Kenya launched a Draft National E-Mobility Policy in March 2024 ((MoRT, 2024). In February 2026, a full National E-Mobility Policy document has been released (MoRT, 2026). The policy is anchored on six major pillars with seven objectives and suggested pathways to deliver on the policy targets (see Table 2).

These seven objectives collectively aim at strengthening the e-mobility value chain via fostering a domestic EV industry, expanding and strengthening the EV infrastructure and building a domestic skilled workforce to sustain and scale up the sector (MoRT, 2026: 7). Contrary to previous policy documents, the 2026 National E-mobility Policy document acknowledges the absence and inadequacy, and therefore, the very importance of gender inclusivity in e-mobility sector and mentions 'women' in 18 accounts throughout the policy document. Although the gender dimension is confined to policy pillar 1, which includes socio-economic dimension of scaling reach to women, youth and persons with disability (PWD), using phrases such as:

- -'Targeted programmes for women drivers' (MoRT, 2026: p.6)
- -'Targeted programmes for women in the EV industry' (p.21)
- -'Develop targeted programmes that incentivise women' to engage in e-mobility
- -'Develop programmes to employ women'
- -'Ensure that EVs and EV infrastructure are widely accessible to ..., women' (p.37)
- -'Provide fiscal and non -fiscal incentives to players in the e -Mobility value chain to employ women',
- -'Develop targeted programs to equip women, including the necessary skills to participate in the sub-sector (electric rail technicians, maintenance personnel, or control centre operators)' (p.38)

These suggest that the Kenyan Government has considered and developed inclusive policies and strategies in e-mobility through specialised programmes. The tools for implementation of inclusive and gendered policy actions encompass firstly the identification of barriers and opportunities for women in e-mobility and then developing targeted programmes for women to respond to their needs to overcome any barriers (Table 3).[5]

Policy actions regarding gender equality are tied to scaling up of socio-economic measures within the general e-mobility policy framework. Substantial actions and measures have been put forward in the policy document to achieve targets for involvement of women in the sector.

Whilst recognition of women's absence in e-mobility policy is quite a step forward in National E-mobility Policy, (2026) the implementations and measures target only women employees. Women entrepreneurs who set up their own companies, and are essentially small and medium size firms, are not captured in the policy ambition. In other words, an emerging and thriving e-mobility sector is considered mainly for public and private large firms, but the economic contributions of women entrepreneurship and women-led small and medium size firms in e-mobility is overlooked. During this initial stage, overlooking the role of entrepreneurship in e-mobility is a missed opportunity for driving socio-economic development through the sector.

[5] Reports 2, 3 and 4 of this project identify the barriers, challenges and needs of women employees and entrepreneurs in the e-mobility landscape in Kenya and provide recommendations. We refer any interested reader, policymaker and industry experts to refer to these reports which are published online at https://acts-net.org/publications-and-resources/ .

The above notwithstanding and considering the nature of e-mobility deployment value chain, it would be advisable to factor in entrepreneurship training with specific focus on e-mobility technologies as early as possible. This would enable the talented female workforce to contribute both as employees and independent entrepreneurs in the different segments of the e-mobility value chain, towards jobs creation and economic growth more generally.

Table 2. Summary of Kenya National E-mobility Policy (MoRT, February 2026)

Policy Pillar	Policy Objectives	Policy Statements	Policy Measures
1.Developing a comprehensive and holistic policy framework	1.To develop an integrated and comprehensive policy, legal and regulatory framework to promote the adoption of e-mobility	- Establish an Electric Mobility Institutional Framework to facilitate the widespread adoption of EVs and establish transition targets	a) Establish a multiagency e-Mobility steering committee to provide overall coordination of e-mobility initiatives undertaken by various governmental ministries, departments and agencies (MDAs) and county governments b) Undertake a periodic, countrywide, EV demand study c) Set target timelines when all newly registered vehicles will be required to be zero-emission vehicles (ZEVs), with timelines for different categories of vehicles, including locomotives d) Prioritise the addition of EVs during government vehicle fleet procurement, with a minimum local content requirement. e) Review the existing regulatory framework for EV asset financing and insurance to include e-Mobility. f) Develop a countrywide framework for the adoption of electric-based mass passenger transport systems in urban areas.
		- Establish and review the legal and regulatory framework to promote the adoption of e-mobility	a) Review and update vehicle emissions standards, with periodic inspections to ensure compliance. b) Introduce licensing and certification programmes for electricians, installers, and maintenance technicians in the EV industry. c) Harmonise EV codes and standards to ensure consistency, interoperability, and compatibility across different regions and jurisdictions. d) Ensure that building codes and regulations accommodate EV charging infrastructure. e) Develop standard for residual battery life for the importation of second hand EVs. f) Establish clear safety regulations and standards for the manufacture, assembly, importation and/or operation of EVs and EV infrastructure. g) Establish end-of-life disposal methods for EVs in compliance with other existing policies. h) In line with existing data protection laws, mandate data sharing on usage patterns, charging behaviour, and so on to inform strategic planning and infrastructure needs
	2.To scale up socioeconomic measures to promote the adoption of EVs	- **Enhance gender equality and social inclusion in the e-mobility ecosystem**	a) **Develop targeted programmes that incentivise women,** youth and PWDs and other marginalised groups to engage in economic activities enabled by e-Mobility. b) **Develop programmes to employ women,** youth, PWDs and other marginalised groups in different e-Mobility activities. c) **Ensure that EVs and EV infrastructure are widely accessible to** youth, **women**, PWDs and other marginalised groups. d) Develop targeted programmes for the creation of public awareness about e-Mobility's benefits, cost savings and environmental advantages. e) **Provide fiscal and non -fiscal incentives to players in the e -Mobility value chain to employ women**, youth and PWDs and members of other marginalised groups. f) Establish data security and privacy standards for EVs to protect consumer data, ensure confidentiality, and prevent unauthorised access or misuse of personal information. g) **Develop targeted programs to equip women**, youth, and PLWDs **including the necessary skills to participate in the sub-sector (electric rail technicians, maintenance personnel, or control centre operators)** h) **Develop scholarship and apprenticeship programs to encourage participation of these groups in existing air and maritime professions**

		- Enhance financial inclusion in the e-mobility ecosystem	a) Collaborate with financiers and development partners to develop affordable and innovative e-Mobility financing products and models for individuals, businesses and organisations in the acquisition of EVs and EV infrastructure. b) Develop mechanisms to give owners of EVs and infrastructure access to insurance products. c) Develop innovative risk mitigation mechanisms to de-risk large-scale EV projects initiated in Kenya.
2.Local manufacture and assembly, and infrastructure capacity	3.To promote the local manufacture and assembly of EVs	- Ensure establishment of local manufacture and assembly of EVs	a) Implement ZEV sales targets and investment requirements for automakers and assemblers to qualify for government incentives. b) Establish a clear local content requirement for EVs that is phased in over time. Implement a phased approach that prioritizes public transport and commercial fleets. This could provide immediate environmental benefits and serve as a public endorsement of EV technology.
		- Establish a local upstream ecosystem for EV auto components	a) Put in place measures to support the manufacture of EV parts. b) Support local battery manufacture, recycling and repurposing
	To develop and enhance e-mobility infrastructural capacity to accelerate the adoption of EVs	- Establish supportive measures for EV charging infrastructure	a) Establish targets for deploying the EV charging infrastructure to ensure widespread coverage of all vehicle categories. b) Encourage interoperability of EV charging systems and public charging stations. c) The national government and county governments will provide nonfinancial facilitation for the installation of charging infrastructure in public spaces
		- Ensure a reliable electricity supply to support e-mobility	a) Develop a coordination framework between major players in the electricity sector to improve electrification and reliability. b) Undertake periodic review to determine optimal charging locations to inform investments in EV charging infrastructure
		- Promote development and integration of EV -based public transport.	a) Develop a framework for the transition of public transport from ICEs to EVs through a phased approach and with defined timelines, in line with Kenya's climate commitments. b) Develop a Framework to ensure that electric rail development is part of a broader strategy for integrated electric freight and public transportations
	To enhance local technical capacity and skills along the e-mobility value chain	- Ensure the development of local technical capacity and skill to support local EV manufacturing, assembly, operation, and maintenance	a) Develop an e-mobility curriculum or module that can be integrated into relevant programmes in TVET schools and universities and other training institutions. b) Promote research and development initiatives related to EVs, battery technology, and charging infrastructure. c) Mandate suppliers to integrate user training and provide manuals for their products. This should include basic diagnosis procedures and maintenance. d) Promote EV knowledge sharing locally and internationally. e) Undertake research and explore the use of biofuels and other alternative jet fuel solutions, acquisition of more fuel-efficient aircraft technology, electric taxiing equipment among others
	Development of alternative sources of funds to reduce over-reliance on fuel levy for road maintenance, rehabilitation and development		a) Establish the impact of adopting e-mobility on the long-term sustainability of the Road Maintenance Levy Fund. b) Develop alternative financing sources for road maintenance, rehabilitation and development. c) Implement alternative financing sources for road maintenance, rehabilitation and development. d) Apply the "User Pays" principle in the financing of roads maintenance, rehabilitation and development

		- Enhance financial inclusion in the e-mobility ecosystem	a) Collaborate with financiers and development partners to develop affordable and innovative e-Mobility financing products and models for individuals, businesses and organisations in the acquisition of EVs and EV infrastructure. b) Develop mechanisms to give owners of EVs and infrastructure access to insurance products. c) Develop innovative risk mitigation mechanisms to de-risk large-scale EV projects initiated in Kenya.
3.Fiscal and non-fiscal incentives	To improve fiscal and non-fiscal measures to accelerate the adoption of EVs	- Provide fiscal and non-fiscal incentives to manufacturers and assemblers	a) Provide tax incentives, including excise duty and VAT exemptions, b) Ensure expedited importation of EVs and EV parts, including access to green channels. c) Develop a framework to support the establishment of EV manufacturing plants and the export of locally built EVs and EV parts. d) Provide incentives to attract investment in the development and upgrading existing rail infrastructure to support electric locomotives, including substations and potential dedicated power lines.
		- Provide fiscal and non-fiscal incentives to promote infrastructure development	a) Provide incentives to businesses and property owners to develop and install public EV charging infrastructure. b) Reduce the stamp duty for EV infrastructure developments. c) Review and update the e-Mobility tariff for EV charging stations. d) Integrate charging infrastructure with transport and energy planning. e) Develop a framework for PPPs to attract private investment in electric rail projects. f) Explore incentives to encourage port upgrades for shore power (alternative maritime power) connections to accommodate future electric or hybrid vessels
		- Provide fiscal and non-fiscal incentives to EV consumers to accelerate adoption	a) Develop and implement an electricity tariff for EV charging. b) Provide unique identification for EVs. c) Provide preferential access to EVs to zones with traffic and parking restrictions. d) Provide tax incentives, including reduction of excise duty on completely built up EVs for a defined period to enhance EVs adoption in the country. e) Provide tax incentives, including the reduction of excise duty for locally manufactured and assembled EVs.
4. Quality assurance and safety standards.		- Establish clear technical and safety standards for EVs and charging stations to ensure a high level of user safety and interoperability of infrastructure.	
5.Licensing and registration.		To be developed	To be developed
6.Monitoring and evaluation		To be developed	To be developed

Table 3. Proposed policy actions to support and increase women's involvement in e-mobility sector in Kenya (MoRT, 2026)

Policy Statement	Policy Measures	Action Description	Verified through	Indicators	
				baseline	Target
Enhance gender equality and social inclusion in the e-mobility ecosystem	a) **Develop targeted programmes that incentivise women,** youth and PWDs and other marginalised groups to engage in economic activities enabled by e-Mobility.	Identified barriers and opportunities in the e-Mobility sector	Report on barriers and opportunities	None	Dec 2026
	b) **Develop programmes to employ women,** youth, PWDs and other marginalised groups in different e-Mobility activities.	Designed programmes responding to identified barriers and opportunities	Employment programmes	None	Dec 2027
	c) **Ensure that EVs and EV infrastructure are widely accessible to** youth, **women**, PWDs and other marginalised groups.	Standards for universal access to EV infrastructure	Developed Standards	None	Dec 2027
	d) Develop targeted programmes for the creation of public awareness about e-Mobility's benefits, cost savings and environmental advantages.	Sensitization and awareness campaigns on benefits, opportunities and other aspects on e-Mobility	Awareness reports, Information, education and communication (IEC) materials	None	Dec 2027
	e) **Provide fiscal and non -fiscal incentives to players in the e -Mobility value chain to employ women**, youth and PWDs and members of other marginalised groups.	Fiscal incentives	Finance Bill	None	Dec 2027
	f) Establish data security and privacy standards for EVs to protect consumer data, ensure confidentiality, and prevent unauthorised access or misuse of personal information.	Data protection	Licensing Certificates	None	Dec 2027
	g) **Develop targeted programs to equip women**, youth, and PLWDs **including the necessary skills to participate in the sub-sector (electric rail technicians, maintenance personnel, or control centre operators)**	Targeted capacity building on EVs and related technologies	Training programmes in e-Mobility related skills, scholarships	None	Dec 2026
	h) **Develop scholarship and apprenticeship programs to encourage participation of these groups in existing air and maritime professions**	Developed programmes that support participation of marginalised groups	Training and attachment programmes for the marginalised	None	Dec 2027

3.2. Key support organisations in Kenya's e-mobility ecosystem

Facilitated by a robust National E-Mobility Policy, a network of industry bodies, international development partners, government agencies, and energy utilities accelerated Kenya's emergence and growth as Africa's leading centre for e-mobility. Among them, Government bodies, ministries, industry alliances and trade associations, and international NGOs form the backbone of the e-mobility ecosystem to conduct research and act to influence the making of e-mobility policy and strengthen related infrastructure and the ecosystem through well-connected actors. Complementarily, the research institutes, university research labs, climate innovation hubs and incubators support established and new, large and small e-mobility businesses. These facilities enable researchers, local engineers and entrepreneurs to design, prototype, and test EVs, battery packs, and embed internet-of-things (IoT) software into hardware locally leading to accumulation and strengthening endogenous capabilities in e-mobility technologies.

The major supporting actors in the Kenyan e-mobility ecosystem can be summarised as below.

3.2.1.Government Bodies and State Energy Entities

- **Ministry of Energy, Ministry of Transport and Ministry of Education:** The three core ministries framed the national regulatory frameworks and delivered the National E-Mobility Policy (MoRT, 2026), setting targets to reduce transport emissions, boost zero-emission vehicle adoption, upskill labour force in line with fast advancing e-mobility technologies, gather statistics for e-mobility sector, include women and disabled persons in e-mobility sector by identifying the needs and challenges for these marginal groups.
- **Kenya Power (KPLC):** The national grid operator is heavily involved in expanding charging infrastructure, creating dedicated e-mobility power tariffs, and offering technical training through its Institute of Energy Studies and Research (IESR).
- **National Transport and Safety Authority (NTSA):** Oversees vehicle registration, classification, and safety compliance for electric two-wheelers, three-wheelers, buses, and cars. They set the target for adoption of EVs until 2030 at 100,000 most of which will include 2/3 Wheelers.
- **KenInvest (Kenya Investment Authority):** Promotes Kenya as a green manufacturing hub, actively pitching local EV assembly and charging infrastructure to foreign investors.

3.2.2.Industry Alliances and Trade Associations

- **Electric Mobility Association of Kenya (EMAK):** The main industry association representing EV manufacturers, charging operators, and technology providers. EMAK leads private-sector advocacy, public education, and networking. EMAK conducts exploratory research into e-mobility sector, its progress, publishes reports and influences policy making. There is only one woman, as Secretary, in EMAK's board of directors as of August 2026.
- **Africa E-Mobility Alliance (AfEMA):** An Africa-wide non-profit and think tank based in the region. AfEMA conducts market research, gathers data on e-mobility across African countries, supports policy formulation, and drives initiatives like the Kenya E-Mobility Battery Initiative (KeEBI) to address battery lifecycle and recycling standards.
- **Kenya Association of Manufacturers (KAM):** Campaigns for companies engaged in local assembly and manufacturing (e.g., Roam, BasiGo, ARC Ride, Kiri EV, Ecomobilus). KAM works with the government to secure tax incentives for CKD (Completely Knocked Down) kits and encourage local supply chain integration.

3.2.3.International Development Partners and NGOs

- **Deutsche Gesellschaft fuer Internationale Zusammenarbeit GmbH (GIZ) and Siemens Stiftung:** GIZ works towards achieving sustainable economic development and employment promotion in Kenya through focusing on renewable energy and climate change actions and e-mobility forms one of their action areas on the ground in Kenya. They offer workforce training in e-mobility, fund technical pilot programs (like agricultural EVs and e-waste management), and help build industry capacity.
- **United Nations Environment Programme (UNEP):** Supports e-mobility upskilling initiatives, funds projects especially in rural Kenya. One successful example is funding of WeTu that operates the WeMobility e-mobility initiative in rural Western Kenya, providing sustainable transport like e-boda-bodas and cargo bikes powered by a network of solar charging hubs. UNEP funded large scale training programme for women technicians in rural Kenya delivered through WeTu.

- **Shell Foundation and ClimateWorks Foundation:** Provide capital, research funding, and technical assistance aimed at expanding battery-swapping networks and pay-as-you-go financial models in 2/3W EVs.

3.2.4.University Research Labs

- **Strathmore Energy Research Centre (SERC):** Operating out of Strathmore University, SERC is a lead research hub for renewable energy integration and EV infrastructure. SERC conducts high-profile research projects like Charge Up (in partnership with Imperial College London) to model battery-swapping station networks, optimize load profiles, and analyse battery-as-a-service (BaaS) unit economics.
- **Institute of Energy Studies and Research (IESR):** IESR is the in-resident specialized technical and research institution of Kenya Power (KPLC). It serves as a grid-testing and workforce training ground for EV integration. Focuses on smart metering, vehicle-to-grid (V2G) potential, EV charging impact on the national grid, and training technicians on high-voltage system safety.
- **Dedan Kimathi University of Technology (DeKUT) and Jomo Kenyatta University of Agriculture and Technology (JKUAT):** DeKUT and JKUAT are public technology universities in Nyeri and Juja. They focus heavily on mechatronics, lightweight material engineering, and wireless power transfer research for EVs. They act as skilled workforce pipelines for local automotive assembly lines.

3.2.5.Climate and Business Incubators and Science Parks

- **Kenya Climate Innovation Centre (KCIC):** Initially launched with World Bank support, KCIC is a flagship incubator for climate-tech ventures in East Africa. It offers incubation, technical assistance, and prototyping support to startups building solar-powered EV charging hubs, e-motorcycles, and light freight delivery solutions. KCIC is actively involved as practitioners bringing value in international research projects funded by British, Canadian and Danish funding bodies in renewable energy and e-mobility.
- **Chandaria Innovation and Incubation Centre (Kenyatta University):** An academic innovation hub that mentors student-led engineering startups, providing seed-stage incubation for green transport and hardware solutions.
- **Konza Technopolis Technology Park and Smart City:** Konza Technopolis is a master-planned smart city located about 64 km southeast of Nairobi across 5,000 acres. It is a flagship project of Kenya's Vision 2030 and serves as a Special Economic Zone (SEZ) designed to turn Kenya into a regional technology and innovation powerhouse. It focuses on advancing newly emerging technologies in Kenya and supporting businesses towards this aim. Digital, AI, renewable and e-mobility technologies are in the core of Konza Technopolis with support from academic and research institutes being relocated to the Smart City. It includes a National Data Centre that functions government digital services, cloud infrastructure for private enterprises, and computing resources for startups. Technology Clusters that focus on Information & Communications Technology (ICT), software engineering, life sciences, microelectronics, and digital media. Within this function, it runs digital upskilling training programmes for women entrepreneurs.

3.2.6.Private Industrial R&D Facilities and Testbeds

- **Roam Park (Nairobi):** Located on over 10,000 square meters, Roam's facility in Kenya is East Africa's largest dedicated electric vehicle assembly and R&D facility. It acts as an industrial innovation lab where local engineers continuously design, field-test, and assemble two-wheelers (Roam Air) and electric transit buses (Roam Rapid).
- **Kiri EV (Nairobi):** A domestic small and medium sized company that designs and locally produces 2/3W EVs, produces smart internet-based solutions for battery charging, trains workforce and especially women technicians in e-mobility. Kiri EV raises awareness in e-mobility within the local users as well as collaborating as partners in international projects by providing training space for EV users and e-mobility entrepreneurs.
- **Gearbox and Gearbox-Europlacer (Nairobi):** Gearbox is East Africa's premier hardware prototyping and fabrication center. It provides local EV innovators access to industrial 3D printing, CNC machining, laser cutting, and circuit board manufacturing to support and scale up EV design. Through its joint venture Gearbox-Europlacer, it houses East Africa's only Surface Mount Technology (SMT) assembly line, enabling local startups to manufacture custom Printed Circuit Boards (PCBs) for Battery Management Systems (BMS) and vehicle telematics locally.

Unlike ecosystems focused solely on importing finished vehicles, Kenya's support landscape heavily prioritizes local assembly, 2/3 W battery swapping, public transport (matatu/bus) fleet transition, and battery recycling. To achieve this aim, unlike traditional automotive markets where R&D happens overseas, Kenya's e-mobility hubs are designing localized hardware and software to solve unique African challenges—such as pre-paid battery swapping business models, solar microgrid charging integrations, and design, production of solar canopy 2/3W EVs, and local battery recycling and battery end-of-life solutions.

3.3. E-Mobility value chain and charging infrastructure in Kenya

The value chain concept has been coined by Michael Porter (1985a, 1985b) to describe the full range of activities, which are required to bring a product or service from conception, through the different phases of production, distribution to consumers, and final disposal after use. As the product moves from one player in the chain to another, it is assumed to gain value. In that sense, a value chain is the full series of business activities such as research & development, designing, producing, marketing, delivering, and supporting or servicing a product that add value at each step from raw materials to final customer delivery.

E-mobility is a source of direct and indirect employment in other sectors such as transport, automotive, electronics and information technology (IT) and in the deployment and operation of charging infrastructure, local assembly and maintenance of EVs and recycling or reuse of the battery at the end of life. The e-mobility sector has three value chains as depicted in Figure 2 (van der Steen et al., 2015):

i)vehicle value chain, i.e. e-vehicles including paratransit,
ii)infrastructure value chain, i.e. the electricity grid and battery charging, and
iii)networks between the value chain actors

The third one is not a value chain as such, but it connects the EV and grid value chains, hence warrants policy attention. The two main value chains embody the research and development, production, services and market-related activities in e-mobility and its infrastructure.

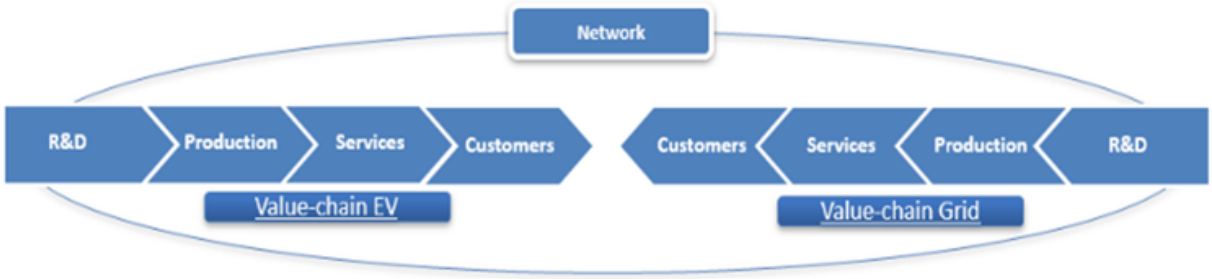


Figure 2. The three value chains of e-mobility. (van der Steen et al., 2015)

The e-mobility value chain in Kenya is one of the largest on the African continent after Rwanda and Egypt in terms of e-mobility policy, regulations, fiscal and non-fiscal incentives and energy and e-mobility sector value chain (AfEMA, 2025: 12) The energy infrastructure is fairly reliable in the urban areas providing solid background for e-mobility infrastructure and Kenya has the potential to grow its e-mobility industry through its energy sector that is primarily driven by the renewables (MoECCF, 2025).

In terms of e-mobility related infrastructure, Kenya has made strides in expanding electricity generation through renewable sources such as geothermal, solar and wind energy, with almost 90% of energy coming from renewable sources[6], but still lack the extensive charging infrastructure necessary to support widespread e-mobility adoption (RoadMap to e-Mobility in Kenya, 2021) and especially in rural areas where power outages are frequent and power supply is unreliable (African Development Bank, 2020). The Kenyan government's National Climate Change Action Plan highlights that e-mobility could reduce the country's reliance on imported fuels, which account for 24% of its energy consumption (MoECCF, 2025). Moreover, Kenya has attracted over USD $400 million in foreign direct investment into its e-mobility sector since 2021 and established itself as a major hub for e-mobility in Africa (KAM, 2025). The National E-Mobility Policy further aims at improving these targets by introducing wide support to e-mobility sector (MoRT, 2026); hence a robust e-mobility infrastructure is strategically essential and necessary.
The development of infrastructure, i.e. the value chain grid encompassing the electricity grid and battery charging in Figure 2, to support e-mobility sector and value chain in Kenya presents both challenges and opportunities. The e-mobility infrastructure currently relies on two different models in Kenya:

(1) Battery swapping stations, which allow 2/3W EV users to instantly swap their depleted batteries with a fully charged one. This currently is the dominant EV charging model in Kenya. Few 2/3W models enable home charging.

[6] https://lowcarbonpower.org/region/Kenya , accessed on 29 January 2026.

(2) 4W EV charging stations which are currently very limited in number but an ambitious importation of 10,000 4W is being planned by 2030 as announced by the Kenyan government.[7] Very recently, in July 2026, the Government of Kenya abolished import duty for the first 100,000 EVs imported into country, albeit majority of these EVs are 2W EVs, a 10% proportion are likely to be 4W EVs as planned.

A major obstacle for the second model is the scarcity of charging stations, particularly outside urban areas. A report by Zero Emissions Mobility Africa (2023) estimates that $2.7 billion in investments is required to build a reliable charging network across Sub-Saharan Africa, with Kenya needing $300 million alone to establish a basic nationwide network. This estimate covers both charging stations for electric cars and charging and battery swapping stations for paratransit e-vehicles. While Nairobi has seen some early installations of EV charging stations, the existing infrastructure is insufficient to accommodate a large fleet of electric vehicles.

The charging infrastructure currently in full operation in Kenya is related to 2/3W e-bike and e-motorbike battery charging and swapping stations. Several companies operate these stations in Kenya, primarily in Nairobi, through companies like Roam Hubs and Spiro. These stations offer various services, including solar-powered charging, affordable battery rentals and swaps, and aim to reduce range anxiety for riders while promoting sustainable transportation. Delivery drivers are among the common users of these stations. The infrastructure is designed to be scalable, with expansion plans for other cities and features like integrated solar panels to benefit from renewable energy generated in the country. While there is no exact current total count of such battery charging and swapping stations in Kenya, EMAK (2026)[8] estimates there are over 150 as of early 2026 (i.e. Ampersand operate around 50 stations, ChargeUp operates 45 stations for e-bike riders and Roam Electric has 5), with plans to expand significantly (Spiro planning to establish 3000 stations). Indeed, this area is seen as an entrepreneurial opportunity for delivery businesses such as GreenWheels/Uber that provide business opportunities to women under certain franchising schemes.

As such, Kenya's uptake of e-vehicles is currently hindered by infrastructure issues, yet the ambitious targets for charging stations provide promising future. Kenya’s RoadMap to e-Mobility (2021) emphasizes that for Kenya to scale up, substantial investment in public-private partnerships and policy reforms is required to overcome infrastructure deficits. The next sections in this report provide details for these efforts being planned and taking place during the last few years and the ways they can generate business opportunities for women.

4. E-Mobility sector in Kenya: Major business actors, business models and opportunities

The e-mobility sector in Kenya holds promise for job creation with at least 50 e-mobility start-ups that have already entered the sector (EMAK, 2025). The job creation potential for e-mobility value chain in Kenya is not well documented. According to the European Association of Electrical Contractors, by 2030 the e-mobility value chain in Europe has potential to create jobs in maintenance of the chargers as the most job-intensive segment, followed by battery cell manufacturing, then installation of the electric vehicle chargers (Table 4).

[7]https://www.esi-africa.com/news/kenya-ev-numbers-surge-more-charging-stations-to-be-rolled-out/#:~:text=The%20electric%20vehicle%20(EV)%20fleet,total%20registered%20vehicles%20to%200.2%25..
Accessed on 30 August 2025

[8] https://e-mobilitykenya.org/ , accessed on 3 February 2026.

Vehicle maintenance, battery cell manufacturing and installation of chargers have the highest potential for job creation, suggesting the two main value chains of e-mobility, i.e. the grid and the vehicle value chains, will grow further. It is estimated that by 2030 in Europe more than twice as many jobs can be created in the e-mobility value chain as they are lost in automotive manufacturing (AIE, 2020). Forecasting of imminent job opportunities in Europe may shed some light for Kenya, but currently specifically for the paratransit 2W/3W e-vehicles rather than 4W that is in its infancy.

Table 4. Potential for job creation in the e-mobility value chain in Europe 2030 (AIE - The European Association of Electrical Contractors, 2020)

Value Chain Aspect	Potential for job creation
Production & Maintenance	39%
Battery cell manufacturing	17%
Installation of EV chargers	11%
Electricity generation	9%
Manufacturing charging equipment	7%
Operation	7%
Grid connection	6%
Grid Reinforcement	2%
Wholesale	1%
Civil and road works	1%

E-mobility market and its value chain in East Africa and Kenya, specifically, radically differs from that of the Global North (Table 5). Whereas the focus is on private ownership for personal use of 4W EVs in the Global North supported by favourable funding schemes; in East Africa including Kenya it is the 2/3W EVs that generate income that are the focus of the market. This is supported by frugal business model innovations such as battery swap systems on the energy side and flexible franchise models on the funding side and is mostly driven by private sector. The system is very much a local e-mobility entrepreneurial and innovation ecosystem which paves the way for ample entrepreneurship opportunities.

In Kenya, due to certain factors such as warmer climate 2/3W EVs can be used all year round. Additionally, due to their affordability, the demand for 2/3W EVs is ever increasing at a faster pace than that of 4W EVs. Some tested business models with e-taxis did not work, but e-bus and 2/3W EVs seem to work. For instance, NopeaRide, a business model of e-taxi service, ceased all operations and exited the market by removing its fleet of 70 EVs and charging stations from Nairobi in November 2022 due to financial constraints and funding shortages following the COVID-19 pandemic.

However, ROAM (formerly Opibus) and BasiGo have been successful not only in design, assembly and production of e-buses, but also in a Pay-as-you-Drive/ride business model[9] they offer as incorporated into public transport. Such initiatives, driven by the service-oriented innovation in the digital economy have optimised the potential for the entrepreneurial growth in this sector, and may be extended for business opportunities for women. Hence, Kenya is an extremely interesting and a fast-changing, vibrant environment for e-mobility technologies and creative business models.

Table 5. Comparing aspects of E-mobility marketplaces in Global North and East Africa

Value Chain element	East Africa	Global North
Designers, manufacturers, and assemblers	Focus on income-generating use and electrifying fuel-powered vehicles	Focus on personal vehicles and production of new EVs
Energy providers	Limited grid coverage makes battery-swapping models attractive to drivers; pay-per-use models lower the costs for drivers	Widespread and reliable electrical grids support, dense charging networks
Customer service and support	Flexible payment models like group leasing and pay-as-you-go (PAYGO) are growing the customer pool for e-mobility. This is mostly driven by service-oriented innovation in the digital economy where uptake is high in East Africa	Incentives (e.g., tax credits) enable people to own EVs; companies help customers share rides, maintain their vehicles, and buy EVs on credit. However, e-car or e-bike share schemes were not successful

Source: Power Africa (2023).

Table 6 provides a list of major start-ups[10] in Kenya's e-mobility sector by type of activity/function they are involved in. Design, assembly and production are almost solely confined to 2W EVs, e-bikes and e-motorbikes, due to high demand based on their lower costs. These 2/3W EVs are livelihoods for businesses (i.e. delivery riders, passenger transport, etc.) and as their adoption rates increase, so do their design and functions. For instance, companies such as Kiri EV recently introduced 3W and e-motorbikes with extended cargo carriers (called Picktuk). Kiri EV also works on new designs of e-bodabodas specifically for women with an additional step onto the motorbike that avoid women complaining about the height of the motorbike. Ecomobilus is one company that designs lightweight and smaller e-motorbikes for women.

As EVs become more in use, this increases the need for charging facilities. The Kenyan charging infrastructure model emerged as private sector driven model whereby start-ups have seen market and technological opportunities in charging. By now, many startups which design and produce 2W EVs also provide battery swapping or charging facilities for their vehicles, e.g. eBee, ROAM, ArcRide are large companies that already have a large network of battery swapping stations in Nairobi.

[9] https://www.basi-go.com/pay-as-you-drive-, accessed on 29 January 2026.
[10] Start-ups are defined as new ventures that are below the age of 10 years.

Most recently, smaller domestic companies such as Kiri EV have also added such infrastructure into their operations with advanced capabilities such as the batteries being connected to IoT systems and tracked for their efficiency and replacement.[11] More environmentally concerned start-ups employ solar-powered charging stations. Charging infrastructure is now moving to another phase where start-ups are working on wireless charging and accompanying it with the offer of software platforms for battery charge controls, EV fleet management, etc. opening further opportunities in e-mobility jobs driven by digital technologies. Most recent advance in e-mobility in Kenya is observed in environmental concerns for old batteries which are now recycled or refurbished as part of a newly emerging battery circular economy. Responding to these concerns and advances, companies position themselves in the e-mobility value chain and ecosystem as shown in Table 6.

Table 6. Major EV companies and start-ups in e-mobility in Kenya as of 2026.

Company	Established in	E-mobility sub-sector	Function
eBee Africa	2020	EV production, charging, fleet management	e-bike design, production, assembly, charging and swapping stations, fleet lease and management
Powward	2021	EV production, charging	e-bike design, assembly, solar-powered charging stations
eWAKA Mobility Ltd.	2021	EV lease, fleet management	e-bike, e-scooter and e-motorbike sales, lease, fleet lease and management, lease-to-own scheme
ROAM (formerly Opibus)	2017	EV production, charging, fleet management	e-motorbike and e-bus design, production, battery charging and swapping, software platform for fleet managers, businesses, financiers, and logistics operators.
Arc Ride	2019	EV production, charging	e-motorbike design, production, and Battery-as-a-service (BaaS) battery swapping stations (144 swapping cabinets throughout Nairobi)

[11] Based on interview with Kiri EV lead engineer Arnold Omolo in Nairobi during a day training visit to Kiri EV on 14 July 2026.

Enzi Mobility	2021	EV production, charging	e-motorbike design, production, battery charging and swapping stations
Kiri EV	2020	EV production, charging	e-motorbike, e-motorbike with extended cargo space (Picktuk), 3W e-tuktuk design and production, battery swap stations
Ecobodaa	2020	EV lease, charging	e-motorbike lease-to-own, battery-swapping stations
Spiro	2023	EV charging	e-motorbike and battery fast charger design, production, lease-to-own, battery-swapping stations
Ampersand	2022 (2016 in Rwanda)	EV lease, charging	e-motorbike lease-to-own, smart battery-swapping stations with digital platform and AI support
Green Wheels (in partnership with Uber)	2023	EV lease, fleet management	e-motorbike lease-to-own for drivers, fleet management for businesses. E-motorbikes are purchased from Arc Ride, Roam, and One Electric, internet-based fleet management systems
BasiGo	2021	EV production, charging	e-bus design, production, charging infrastructure and Pay-as-you-Drive scheme. Focus on electrifying public transport by providing electric buses and charging infrastructure.
Fika Clean Mobility	2019	e-motorbike sale, battery swapping	e-motorbike smart battery solutions through swap stations and software management support through dedicated app

EVChaja	2020	EV charging	Advanced charging infrastructure solutions for 4W EVs.
Chaji	2021	EV charging, IT, Software and Services	Advanced EV charging solutions, hardware eSOKK IoT Smart Charging Socket with wireless charging capabilities and advanced connectivity options with intelligent cloud-based software and management platform
STIMA	2020	EV charging, fleet management	Battery charging and swapping infrastructure, battery efficiency software management for riders and EV fleets with Rider app.
E-Safiri	2020	EV charging	Solar-powered battery charging, swapping
Associated Battery Manufacturers	1963	Battery manufacture	Kenya's one and only battery manufacturer
Qtron Industries	2016	Battery recycling and refurbishment	Repairing and recycling batteries for 2W and 4W EVs, electric vehicle conversion, maintenance
ACE Green Recycling - Spiro recycling partnership	2025	Battery recycling	Repairing and recycling EV batteries for 2Ws in collaboration with Spiro (in Spiro's collection hubs)

Table 5 guides on the activities that companies, and new ventures embark on in Kenya informing on the emerging opportunities and innovative and fast progressing business models providing ample opportunities in e-mobility. We discuss existing and newly emerging business models and opportunities in e-mobility in the subsequent sections.

4.1. Design, Assembly, Production and Lease of 2/3W EVs and 4W EV prospects

The Kenyan government encourages the local assembly of EVs and their components, including battery technology. 2/3W EV production is quite mature activity in the sector with many start-ups entering the market. Most of them also are engaged in fleet management by lease, battery swapping and charging providing full package to consumers. Local production of 2/3W EV at affordable prices provide ample opportunities for entrepreneurs. However, e-motorbikes are still $1200 costlier than their ICE counterparts with batteries the costliest part. To bring these vehicles to market, production companies use innovative business models to shift cost distribution from upfront prices to operational costs, i.e. lease and franchise business models offered by producer companies engaged in fleet management that help entrepreneurs own the vehicle over time. Ampersand, Ecobodaa, eBee, Arc Ride, Spiro are few of the major companies in this area with design, production and fleet management. Since August 2023, sole fleet management companies such as Green Wheels emerged, based on increasing domestic supply of e-motorbikes in Kenya, that purchases vehicles from producers Spiro, Arc Ride, ROAM and offer lease options to delivery riders.

A recent trend in e-motorbike design comes with solar canopy attached to the EV. Different designs are emerging. Although no Kenyan company has yet been working on the concept, Chinese Motosola[12] and Italian Mask Architects[13] already have products on the market. The former is a lightweight e-motorbike with the solar panels at the top and the latter targets luxury markets. Adopting solar-powered e-motorbikes in Kenya and their assembly is very feasible with these EVs paving the way for grid and battery swapping independence. E-motorbikes can be charged all day and ideal to use in short distances in the city or rural areas.

Recent advances during the last 5-10 years suggest emergence of several types of business models in 2/3W EVs:

i)Design, assembly and production of 2/3W EVs (with solar canopies)
ii)E-bike and e-motorbike lease and franchise schemes which in time allows for ownership of EVs
iii)Design, assembly and production of 2/3W EVs with fleet management (and battery swap/(home) charging stations)
iv)Fleet management of 2W EVs based on increasing supply of 2W EVs (battery swap service received from EV producer)

4W EV design, assembly and production are very limited, except for two e-bus companies ROAM and BasiGo. E-bus and e-minibus (matatu) are at their very initial phases, i.e. only 54 registrations since 2022, albeit increasing but the fewest category among all e-vehicles (EMAK, 2025). ROAM produces brand new e-buses. BasiGo, however, has partnered with Kenya Vehicle Manufacturers (KVM) to assemble e-buses in the country and using knocked down e-buses from Chinese supplier CHTC Motor, KVM's new assembly plant plans to be able to deliver 1,000 e-buses over the next three years until 2028, creating 300 jobs in the process (AfEMA and UNEP, 2024: 33).

[12] See https://motosola.com/
[13] See https://maskarchitects.com/portfolio/solaris-worlds-first-self-charging-solar-motorcycle/

Ultimately, coupled with the Kenyan government's recent announcement on mass installation of charging stations (see the next sub-section) these are significant initiatives which has the potential to re-design the public transport at least in major urban areas in Kenya. Currently, the major public transport vehicle is the 'matatu' that are privately-owned minibuses used as share taxis. They form 70-90% of public transport in Kenya since the 1930s but mostly embedded in informal economy (Arroyo-Arroyo et al., 2025). Matatus are the most preferred transport vehicle after walking in Kenya (AfEMA and UNEP, 2024: 13). Therefore, the recent initiatives in incorporating e-buses into the transport system highlights a major shift in transport policy of Kenya and should not ignore women's participation in this shift by securing sufficient number of jobs for them.

The private uptake of e-buses is very low given the absence of policies such as public procurement. Whereas public procurement of e-buses will probably be on the agenda once sufficient number of charging stations are in place, currently e-bus producers have introduced innovative business models to engage entrepreneurs into driving and subsequently owning their own e-bus for a minimal upfront cost.

Owners then pay an affordable Pay-As-You-Drive fee which includes all charging and maintenance services provided by BasiGo and payment per km driven. [14] While this model shows promise to expand availability and bring down upfront costs for customers/entrepreneurs, it requires high capital investment by the EV company (AfEMA and UNEP, 2024). Simultaneously, initiatives in e-car and e-taxi are emerging based on Chinese e-cars entering Kenyan market. Domestic production of e-cars does not yet occur in Kenya. However, private car dealers such as Moja EV and enter partnership with Chinese NETA to provide lease options to taxi drivers similar to 2W EV lease schemes that cover charging and service at $25-30 per day. Given the unsuccessful exit of NopeaRide in e-taxi business in 2019, success of these recent initiatives remains to be seen. Additionally, based on the plans to instal charging stations Chinese owned e-car companies, e.g. Rideence Africa, are making an early entry and setting up local e-car assembly lines (Business Daily, 2026).[15] These suggest that new business opportunities in e-bus and e-taxi areas will soon be available to entrepreneurs in Kenya:

i)Design, assembly and production of e-buses (likely to be accelerated if public procurement policies are implemented)
ii)E-bus and e-taxi lease and pay-as-you-drive schemes which in time allow for ownership of e-bus and e-taxi
iii)Assembly of Chinese e-cars
iv)E-bus and e-taxi fleet management

[14] https://www.basi-go.com/pay-as-you-drive-, accessed on 5 February 2026.
[15] The quiet rise of Chinese electric car assembly in Kenya - Business Daily, 5 February 2026.

4.2. Battery Swapping

Battery swap stations in Kenya and East Africa, built on Battery as a Service (BaaS) business model, is a unique phenomenon which is not observed in the Global North. It is quite an important part of e-mobility infrastructure in Kenya solely supported by private businesses. This currently dominant business model emerged preceding the transition to very costly battery charging stations installation. A battery swap station allows 2/3W EV users to swap depleted batteries for charged ones in a quick fashion and very much in demand by delivery riders and passenger carriers. Most of the 2/3W EV producers such as Ecobodaa, Arc Ride, Enzi, Spiro have their own network of battery swapping stations. Indeed, the battery swap model has been adopted by almost all e-motorcycle producer and sales companies. However, the battery swap operators currently all operate exclusive networks, meaning that 2W EV riders are only able to swap at swap stations of the same brand, creating inefficiencies and exacerbating range anxiety (AfEMA and UNDP, 2024: 32-35). This is mostly because riders are locked into these charging services upon purchase of the vehicle and to support ownership the BaaS model aims to solve the costly issues of upfront cost by keeping batteries under ownership of the EV producer. By this way the battery swap company removes the costly battery from the cost of the motorcycle.

Delivery companies such as Greenwheels/Uber also have such swapping stations, since their EVs are attached to the lease/franchise options they offer. In the foreseeable future there are two ways the BaaS model can evolve into as business models:

i)BaaS model is highly likely to stay for 2/3W EVs even when a fully efficient charging infrastructure is in place in Nairobi. It can efficiently be reproduced in rural areas where it has great potential in providing opportunities for entrepreneurship and job creation in its successive phase in rural areas.
ii)There are early signs of 2/3W EV users preferring to be able to swap their batteries at stations irrespective of the EV brand lock-in, hence bringing in interoperability of batteries. Although technical and legislative issues remain to be resolved for general exchange of batteries, the problem is already spotted by women entrepreneurs who currently on the task of developing start-ups to respond to this need. See section 4.3 for a recent development for interoperability in Rwanda.

4.3. Battery charging installations

Battery charging station is a specialized infrastructure component that delivers electrical power from the grid to recharge on-board batteries in EVs. They can be used in residential, public, and commercial locations, at varying charging speeds (AC slow/fast or DC rapid) and cost of electricity depends on the charging speed. This infrastructure is costly to establish. In the West, they are usually funded and installed by city/town councils. Despite very high capital costs and advanced technical know-how, several private companies such as BasiGo, EVChaja, Chaji have embarked on the task since early 2020s albeit their activities being confined to Nairobi. More environmentally concerned start-ups have introduced solar power into their charging facilities. Similar to battery swapping infrastructure, a battery charging station established by a private company lock in its customer/user to their own charging service upon purchase of the EV (AfEMA and UNDP, 2024: 35).

The Kenyan government is very supportive to improve the charging infrastructure not only as part of enhancing e-mobility sector but also for zero-emission targets and supports installations through public-private partnerships (PPPs). In October 2025, the government announced that they plan to install 10,000 stations by 2030 throughout Kenya, in three phases in partnership with Kenya Power (major electricity provider and publicly listed company, 50.1% owned by Kenyan government and 49.9% by private investors) and private firms such as Moja EV that focus on 4W EVs in partnership with Chinese NETA AUTO and Skyworth Auto, and Bboxx that specialises in provision of digital technologies and financing for clean technologies. To this effect, the first phase aims at building 700 charging stations in 17 cities on Mombasa-Busia route, then extend to 23 more cities by installing 300 stations every 25 km along the main motorways.[16] Although this project aims at charging 4W EVs which are currently in its infancy

in Kenya, it has potential for advancing public transport with e-buses and also may increase uptake of private e-cars if cheaper e-cars are available from China.
If successful, the charging stations installations have the potential to predominantly alter or even replace the dominant public transport system matatu in Kenya which provide livelihoods of low-income households Arroyo-Arroyo et al. (2025). The adoption of electric matatus is part of a broader push to reduce carbon emissions in Kenya's public transport sector, with the vehicles being powered by the country's largely renewable energy grid. However, electrification of matatu is not trivial issue, since owners do not readily have the means for such conversion. Recent Kenyan government initiative on the modernisation and electrification of public transport prioritises e-buses in large cities like Nairobi along with inter-city buses complemented with the installation of relevant charging infrastructure.[17]

Although such change may adversely affect current business owners in the informal economy, a transitional switch to well-regulated e-buses with safer and secure environments as part of formal economy is likely to generate favourable job roles for women in e-mobility.

The Kenya Bureau of Standards (KEBS) has also established standards as early as 2018 on batteries, EVs, and imported used EVs. Standards for EV charging infrastructure, however, have not yet been fully established (AfEMA and UNEP, 2024:24), although charging standards and standardised charging systems are clear policy targets in the National Electric Mobility Policy document[18] published in early February 2026.

[16] https://www.electrive.com/2025/10/06/kenya-to-install-10000-public-charging-stations-by-2030/, accessed on 30 January 2026.
[17] https://www.electrive.com/2025/10/06/kenya-to-install-10000-public-charging-stations-by-2030/, accessed on 30 January 2026.
[18] Ministry of Roads and Transport Kenya (2026) National Electric Mobility Policy to Promote Development and Enhance Adoption of Electric Mobility in Kenya, available at https://www.transport.go.ke/sites/default/files/Emobility%20Policy%20Final.pdf , accessed on 10 February 2026.

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[16] https://www.electrive.com/2025/10/06/kenya-to-install-10000-public-charging-stations-by-2030/, accessed on 30 January 2026.
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[18] Ministry of Roads and Transport Kenya (2026) National Electric Mobility Policy to Promote Development and Enhance Adoption of Electric Mobility in Kenya, available at https://www.transport.go.ke/sites/default/files/Emobility%20Policy%20Final.pdf , accessed on 10 February 2026.

4.4. Fleet management, Digitalised battery swap/charging infrastructure

Battery swapping and charging infrastructure has been moving to another phase where start-ups are working on wireless charging and accompanying it with the offer of software platforms for battery charge controls, EV fleet management, etc. opening further opportunities in e-mobility jobs driven by digital technologies. Recent work by companies in embedding digital technologies into battery charging/swapping allows for data sharing on usage patterns, charging behaviour, and so on to inform strategic planning and infrastructure needs which can then generate business opportunities in fleet management. This is one opportunity providing area for women to get fully engaged in the e-mobility sector given that they are sufficiently trained in digital areas.

In Nairobi, there are early signs of 2/3W EV users preferring to be able to charge/swap their batteries at stations irrespective of the EV brand lock-in. Although technical and legislative issues remain to be resolved for general exchange of batteries, the problem and the opportunity is already spotted by women entrepreneurs who currently develop start-up ideas and establish start-ups to respond to this need. Strong digital infrastructure in Kenya coupling with e-mobility technology paves the way for realisation and commercialisation of entrepreneurial ideas in this area, hinting at the next stage in near future for an interoperable BaaS system. However, opinions on the efficiency of interoperability are divided.

Most recently in July 2026, Rwanda made a bold move as the first country to mandate interoperability via setting strict regulations on EV charging infrastructure (RURA, 2026). The Article 22 of the regulation states:

> ‘Manufacturers, assemblers, distributors, authorized dealers, and other authorized representatives engaged in the production, importation, or sale of electric motorcycles shall ensure that motorcycles are designed, produced, and supplied in a manner that is technically compatible and interoperable with approved battery swapping systems available on the market. Such interoperability shall enable riders to access and transition between licensed battery swapping operators where an operator ceases operations, fails to meet prescribed service standards, or where the rider elects to switch operators, subject to applicable contractual obligations.’ (RURA, 2026: 13).

National Bank of Rwanda also signed financial and payment agreement with Central Bank of Kenya in March 2026 to enhance cross-border payment system interoperability between the two nations.[19] It remains to be seen whether this action can be implemented in Kenya where governance system is different to that of Rwanda and the system is built on private initiatives. Counter-arguments to Rwanda’s action also highlight ambiguity and technical difficulties to implement such initiative.[20] Yet, these recent developments call for public-private partnerships in the field where both users and producers of 2W EVs can benefit.

[19] https://afi-global.org/news/kenya-rwanda-interoperability/ , accessed on 7 July 2026.

[20] “In the first scenario of full standardization to the degree that RURA seems to be proscribing, only one battery type (at least, in terms of certain specs like connector, form factor, communication protocol) can be deployed.

This would mean running parallel swap networks (one exclusive to serve old riders, one interoperable) to avoid having thousands of motorcycles retrofitted and tens of thousands of batteries being rebuilt (in the best case) or sent on to second life prematurely (in the more likely case). That is an awkward solution to avoid potentially tens of millions of dollars in lost assets in an equity-starved market.

In scenario two, there is a world in which RURA declares both systems are approved battery swapping systems, and now, as part of their contract with drivers, companies make clear that if the driver would like to switch operators (as it seems RURA is requiring that a motorcycle can switch over, not that they can actively, daily, use multiple systems), that the rider must pay for the cost of retrofitting their motorcycle to use the competitors swap network. This would deliver some benefits to drivers (allowing them to escape lower quality services without having to buy a new motorcycle altogether), but it would not really be standardization or interoperability in any meaningful way.” Tom Cartwright E-Mobility Researcher and Consultant, https://www.linkedin.com/posts/tom-courtright-16a81879_rwanda-has-just-become-the-first-country-activity, accessed on 7 July 2026.

4.5. Battery recycling and refurbishment and second-life applications

Battery production, on the other hand, is confined to one single domestic firm established in 1963 in Kenya. Battery is the most expensive part of an EV accounting for over 50% of EV cost and lifetime of a battery is not long. As the EV uptake increases, new market opportunities regarding battery production, refurbishment and recycling emerge. The industry is seeing increased investment from international players like Marula Mining and Ace Green Recycling, focusing on establishing a circular economy for batteries in East Africa, primarily in Kenya.

A pioneer in battery recycling is Spiro, an e-motorbike and charger designer, who teamed up with the US company ACE Green Recycling within a strategic partnership agreement to recycle used EV batteries. The partnership will see Ace Green Recycling process end-of-life lithium-ion batteries, including LFP batteries, as well as waste from Spiro's battery manufacturing facilities and used battery collection from Spiro's charging hubs.[21] The pioneer in battery refurbishment is Qtron Industries, one start-up also working on the conversion of traditional combustion engine vehicles to electric. Equipped with diagnostic equipment to understand the faults in batteries, Qtron fixes and refurbishes old and faulty batteries instead of ending up in Kenya's landfills.[22] This allows for re-use as well as offering great potential for solar and wind stationary energy storage. This newly emerging market and technological opportunity is likely to generate new entrepreneurs with technical background in e-mobility, i.e. technicians and engineers. However, this needs planning for workforce training and especially involving women in such training.

Current situation and advances suggest emergence of an effective e-mobility value chain and entrepreneurial ecosystem in Kenya driven by market demand and available technological opportunities. The Kenyan government provides full support to the sector by certain policy implementations and planning of charging installations. Given the two-tier EV uptake in Kenya, currently 2/3W but 4W EVs to be encouraged in the future, battery swap system for 2/3W EVs need to be extended for its environmental damage concerns and technicians and engineers need to be raised or trained to locally produce batteries, refurbish and recycle batteries. There is role for women as technicians and engineers in these areas. The ambitious national charging infrastructure project also requires planning of workforce for technicians and engineers and women certainly have a role to play in this area.

5.Business opportunities for women in E-mobility in Kenya

Official statistics does not exist in Kenya regarding the involvement of women labour force in the e-mobility sector. This research roughly estimated, using ILO (February 2024) database, that only 1 in 25 employees in e-mobility in Kenya are women and this figure involves all job roles whilst excluding the informal economy. Efforts have been made to shed some light on e-mobility statistics; however, they remain to be estimates only (for instance, see AfEMA and UNEP, 2024 and AfEMA database[23]). Reasonably, one area that the Kenyan government must pay attention to is gathering detailed official longitudinal statistics about women's involvement in e-mobility, so numbers can be monitored for assessing the effects of gendered e-mobility practice and policy in action.

[21] https://recyclinginternational.com/business/innovation/us-battery-leader-pushes-african-e-mobility-recycling/60980/ , accessed on 29 January 2026.

[22] Feature: Kenyan recycling firm revives EV batteries, drives green transition-Xinhua, accessed on 29 January 2026.

[23] https://data.africaema.org/ , accessed 5 February 2026. The publicly available data are very limited, but we understand that internal database might be richer.

The most recent estimate regarding the numbers of women in e-mobility in Kenya by AfEMA and UNEP (2024) states that scarcely available gender-disaggregated data could only be gathered through manually conducted interviews with companies willing to share information. By their account, among the companies that shared this information 'women make up between 33- 38% of their staff and less than 5% of drivers. Women are similarly missing in leadership, with only two of forty-four identified EV companies in Kenya having any women founders' (p.3). Based on such scarce data, we know that while women remain under-represented in the industry, discussions with industry leaders highlight opportunities for women in both new and traditional roles. To this respect, women have seen their opportunities expand most notably in the engineering and maintenance departments, where women with mechanical and electrical engineering backgrounds have been hired. Women in e-mobility have also taken up more traditional roles, such as in marketing and sales, that are similarly reflected in the ICE sector (AfEMA and UNEP (2024:31).

Based on the business models that emerged and newly emerging in e-mobility Kenya (see section 4), opportunities for women exist both in skilled and unskilled job roles. It is crucial that women have a place in the nascent e-mobility sector in different job roles before it matures as a male-dominated sector as in traditional transport. In the subsequent sections we explore potential business opportunities for women in the e-mobility sector.

5.1. Design, Assembly, Production and Lease of 2/3W EVs and 4W EV prospects.

In 2/3W EV business models context (see section 3.3), new opportunities keep arising for women in both skilled and unskilled job roles such as mechanics, technicians, engineers, managers and delivery riders. The increasing numbers of 2/3W EVs on Kenya's roads and the recent progress in 4W EVs (e-bus, e-car and e-taxi) open opportunities for women to seize roles as mechanics, technicians and engineers not only in already established companies but also set up their own EV maintenance businesses as entrepreneurs (see Box 1).

The 2W EVs serve as capital for delivery riders, passenger transport operators, and entrepreneurs who engage in EV fleets and management. For instance, eBee specialises in e-bikes in Nairobi with a fleet of over 300 riders. In 2024, the rider fleet was 9% women, with a near-term goal of reaching 25% women. The company aims for a gender-balanced workforce, with a focus on achieving a 50/50 gender ratio in overall employees. It aims to have one million e-bikes on the road by 2030 which should create opportunities for women riders (AfEMA and UNEP, 2024: 16). At Green Wheels, as of August 2024, 23% of the administrative staff and 25% of management was female, while only 0.5% of their riders are women (AfEMA and UNEP, 2024: 30). Although rider job role seems lower skilled; it, however, paves the way for women to own their 2W EVs in lease and franchise schemes and over time become owners/entrepreneurs of their own businesses with potential to upgrade to 4W EVs as drivers and move onto fleet management.[24]

[24] Based on focus group interviews with rider and driver women in Nairobi on 24 February 2025 during the launch workshop of this project. Several 2W EV riders aspired to upgrading their vehicles to 4W EVs and 4W EV drivers aspired to owning and running a small fleet where they would exclusively recruit women drivers.

With the upcoming of solar-powered e-motorbikes onto the market, women entrepreneurs have opportunity to engage in fleet management for service delivery. Solar-powered e-motorbikes, not necessitating battery swap stations and being completely independent of charging grid, provide ample opportunity for women to enter fleet management with minimum capital investment. As this technology and design develops further and gains a sizeable market size it will also generate jobs in the technician domain, where women can take part based on their training in solar panel and battery maintenance and repair.

Although 4W EVs are capital-intensive operations, given several companies already operating in design, assembly and production of e-buses, these open up opportunities for skilled women with technical and management skills in e-mobility. ROAM reports that as of 2025 34% of their workforce is women, in Basigo this rate is 37.5%. These rates, however, include all employees in the company regardless of specific e-mobility job roles. Regarding such specific roles in BasiGo, only 2 of 35 (6%) e-bus drivers are women, but 26 are being trained (AfEMA and UNEP, 2024: 29). With BasiGo planning 1,000 e-buses over the next three years until 2028 creating 300 jobs in the process, more women need to be trained as e-bus drivers for equal opportunities with their male counterparts to increase share of women e-bus drivers from 6% to respectable proportions. Basigo also trains women as e-bus conductors albeit a less skilled job role of collecting fares from passengers and aides in bus operations. 26% of Basigo's 46 conductors are women (AfEMA and UNEP, 2024: 29). Progress in 4W EVs is likely to be extended to safari vehicles where women work as drivers in week-long safari tours.[25]

5.2. Battery Swapping

BaaS model is quite established and likely to stay for the foreseeable future for 2/3W EVs even when a fully efficient charging infrastructure is operational in Nairobi and throughout Kenya. A battery swapping stations respond to range anxiety, deliver instant service to swap and keep moving, comparable to a refuelling experience, hence attracting customers. They are manned which generate job opportunities at the station in roles such as swappers, customer service agents, cashiers; some stations provide battery maintenance services by technicians. Women can work in these job roles at swap stations.

In Nairobi, the current trend is moving towards automation of swapping stations, which will substantially decrease unskilled job opportunities, but will likely increase demand in technician roles. Spiro and Arc Ride take the lead in automation of swapping stations. These progressive shifts necessitate women getting trained for specific technician/engineer roles in the sector.

Battery swapping market, however, offers great entrepreneurial opportunities for women as it moves beyond simple battery swapping process. Currently, the simple business model is expanding beyond Nairobi to rural areas as well as digitalisation opening new technological and market opportunities for women. Cases of women entrepreneurs exploiting such opportunities are introduced in the next sections.

[25] Based on focus group interviews with safari driver women in Nairobi on 24 February 2025 during the launch workshop of this project.

5.3. Battery charging installations

According to AfEMA and UNEP (2024: 35) outside manufacturing EV chargers itself, which is currently not happening in Kenya, there is very little labour involved in the EV charging subsector. Chargers can be installed within half a day, with no permanent on-site labour and only very occasional maintenance. There are thus likely few opportunities for women directly within the EV charging sector beyond the production of such chargers. However, women can participate in skilled technical roles in production of chargers which will follow suit once Kenyan Government's plans for installation of chargers in their thousands is implemented. Therefore, women technicians in this area need to be trained as a matter of priority.

5.4. Battery recycling and refurbishment & second-life applications

Similar to charging stations, the area of battery recycling and refurbishment is in its infancy, however this area provides more job opportunities for women in skilled technical areas as technicians. This job role will become more important as used batteries flood Kenya based on increasing uptake of EVs. More importantly, at the research end of the value chain, the country needs researchers to conduct research into battery life, safe disposition, etc. Research is also needed to enable new advances in this area to be transferred to businesses. Women e-mobility researchers need to be included in these efforts. National Electric Mobility Policy (2026) recognizes the role of e-mobility research and development activities to be supported especially in battery area, but does not prioritize women in training, skills and capacity enhancement in e-mobility technology area. A new upskilling report by GIZ (2025) recommends introduction of e-mobility skills raising and training into the education curricula at all levels of education in Kenya.

6. Challenges for women in E-mobility in Kenya

The challenges that are faced by women and their respective needs in e-mobility sector in Kenya are largely unknown and hardly documented. Indeed, Kenya National E-Mobility Policy (MoRT, 2026) acknowledges this fact and states 'the identification of barriers and opportunities for women' in the sector as one of its major aims setting a deadline of December 2026 for this task action (see Table 3). Identifying any challenges and needs of women is of paramount importance since only then favourable conditions can be created and appropriate support can be provided to women to take part in this fast-growing sector.

Aligning well with the above, the main objective of our project has been to identify these challenges women face, map their needs and suggest recommendations for action. To this aim, Report 2 and Report 3 of our project informs on these challenges in detail. Report 2, having surveyed 288 entrepreneurs and employees in the sector, quantitatively identifies challenges women face and compares to those of men, whilst Report 3 provides rich qualitative evidence for the reasons of these challenges based on in-depth interviews with women in e-mobility in Kenya. From these unique data, major challenges for women in e-mobility are identified. We briefly summarise them below by stressing the differences between individual level challenges and needs, and those that stem from the contexts surrounding women.[26]

[26] Interested readers are recommended to read Report 2 and Report 3 available at https://acts-net.org/publications-and-resources/ for detailed analysis of barriers and opportunities for women in e-mobility in Kenya.

6.1. Individual challenges: Entrepreneurial confidence exist in women, but hindered by lack of skills

The large-scale survey data collected in this project compared the employees and entrepreneurs in e-mobility by gender. A comparative approach highlighted the challenges women face as compared to men. Results from these quantitative analyses has shown that the e-mobility ecosystem in Kenya can be characterised by a high level of agency as reflected in the self-assessment of all participants for their entrepreneurial orientation, and motivation for operating in the e-mobility sector. Most strikingly, we observed no major differences between men and women regarding entrepreneurial orientation. Both genders, irrespective of their job roles as employees in a company or as entrepreneurs running a company, have been highly entrepreneurially oriented in terms of autonomy in decision-making, competitiveness, proactiveness, innovativeness and risk-taking (fundamental traits of an entrepreneur), scoring on average 7 out of a scale of 0 to 10.

In terms of motivations, women have been found to be more market opportunity and impact oriented (i.e. social and environmental impacts) than men who are more technological opportunity oriented. These results suggest there is an entrepreneurially ready and goal-oriented workforce in Kenya's e-mobility sector to tap into and contribute to socio-economic growth in the country.

Both women and men, however, self-assessed their skill levels (i.e. technical, digital, financial, marketing, networking) in the medium ranges (4-5 out of a scale of 10), with women assessing themselves considerably lower than men. The quantitative data and analysis confirmed most challenges occurring in the skills related areas. Data gathered through in-depth interviews corroborated the findings from large survey data.

Through candid narratives, women interviewed expressed their concerns and major challenges for them in e-mobility are mostly about limited technical, financial and market knowledge and skills.

Uneven allocation of job roles emerged as one challenge for women not only in the survey of 280 participants but also in the interviews with e-mobility experts and entrepreneurs. Although, women in the sector have higher formal education levels than men, especially at university and postgraduate levels - whereas 45% of men have college and secondary school degrees – women seem to be confined to office with administration staff, sales representatives and mid-manager roles. Men dominate riding, driving, technical and decision-making leadership roles. Due to a lack of upskilling in technical areas women feel unconfident and miss on technical roles.

Data from extensive interviews uncovered that technologically, the sector provides many opportunities for expansion, currently male-dominated, but women can exploit confidently if they receive relevant technical training. However, experts in the area state that women have not yet been included in technical training programs which plays major role in them feeling a lack of confidence in engagement with the e-mobility sector.

A lack of education in technical education is frequently mentioned for women and that they need better and systematic education programmes if more women are to be working in this sector. A World Bank study (2023) on women entrepreneurship in Sub-Saharan Africa found that only 25% of women entrepreneurs in male-dominated sectors received technical training and mentorship, compared to 45% of men in the same sectors. Training of women in skilled technical roles is an ongoing and intensifying process in Kenya, but progress must be faster to catch up with demand in job roles. NGOs such as GIZ and UNDP run projects to train and encourage women to engage in e-mobility sector and create an inclusive e-mobility ecosystem (GIZ, 2025; WeTu, 2026). National E-Mobility Policy also devotes considerable attention to how wider education and training/upskilling of women should take place, i.e. whether through a dedicated e-mobility curriculum applied in technical/vocational schools and universities or embedded as a sub-set of automotive engineering (GIZ, 2025; MoRT, 2026).

Within the interviews, women also elaborated on physiological challenges that their gender imposed on them. Physiological factors such as child-bearing and rearing responsibilities increase women's disadvantages in the sector as it may be harder to enter and remain in the industry. Riding 2W EVs as delivery riders and driving e-buses are areas adversely affected by physiological challenges. There are also stigmas attached to women in technician roles due their physiological differences from men. Resonating with the physiological challenges expressed in interviews, the survey results showed that reforms in legislations would be welcomed to generate more opportunities for women in e-mobility where their needs as mothers and wives are cared for, i.e. childcare facilities, better working hours, family tax incentives, etc.

Physiological challenges played important role in the long-discussed 2W EV design issue regarding women riders and users of 2W EVs extensively. There is an ongoing debate about the suitability of e-bikes and especially e-motorbikes for women riders. A report by Hassan et al (2023) emphasizes EV design issues as one crucial factor that hinders uptake of 2W EVs uptake in women using the vehicles. The heavy weight and unergonomic designs of 2W EVs for women come up as one major hindering effect. A lack of female-friendly bikes is associated with low uptake of e-bicycles among women (Mwaura, 2023). Women indicated that they prefer bicycles with a step-through frame. Such bicycles are easier to mount and dismount, and also have wide cushioning saddles, which are preferred by women and girls. However, few cycle shops stock them. In addition, many women feel they lack the strength to become operators of heavy 2W EVs and that they would be at risk of accidents. Most importantly, if they were ever required to carry a load or additional cargo this could pose additional safety risks (Jenkins et al, 2020) and this is most often the case for women these vehicles since they have their children to transport or they do deliveries in these vehicles. Some argue that this is simply a perception issue, and that women are more than capable of riding bikes. However, it is important to consider how the perception alone may also dissuade some women from adopting 2/3W EVs and to consider the role that marketing can play in addressing these misconceptions. Currently, many companies consider and work on developing 2W EV designs that respond to women's physiological needs.

6.2. Systemic/External challenges: A favourable socio-cultural environment but lack of infrastructure and business support

The general external environment that creates the favourable habitat for an inclusive e-mobility ecosystem was assessed for its support mechanisms at the meso level, and the institutions, culture and infrastructure related to macro level. In the survey data participants rated these aspects of the ecosystem within the medium range on a scale of 0 to 10, but interviewees candidly shared details about why the external environment needs to change for women to effectively engage in e-mobility activities.

Firstly, and very pleasingly, from a social and cultural perspective women participants in the survey stated that the Kenyan culture is welcoming enough for women in e-mobility that they do not feel discriminated, harassed or their job role in the e-mobility sector is not undermined by any means by the society and community. Although women collectively largely agreed upon the non-existence of any negative stigma for their roles in e-mobility, the interviews were instrumental in uncovering some perhaps not straightforwardly shared issues in the socio-cultural domain. Interviews shed the light on such issues that prevent greater participation of women in the sector today may indeed stem from the legacy of the transport sector, where vehicles are powered by ICE technology and men occupied most of the jobs. The transport sector has historically been male-dominated, particularly where vehicles are manufactured using fossil-fuel-based technologies, such as ICEs that resonated more with male involvement. Therefore, the mindset of all stakeholders may still be shaped by those legacy considerations which today may hinder women taking the steps to engage with the sector in the best way. The National E-Mobility Policy (MoRT, 2026) addresses socio-cultural barriers by including women in e-mobility planning as early as possible, so women do not face the challenges inflicted upon them in ICE sector.

Most importantly, the quantitative study observed that entrepreneurship and especially women entrepreneurs in e-mobility are not stigmatised or harassed in Kenya. On the contrary, women report they are well supported for their entrepreneur roles in e-mobility and not judged. Entrepreneur women are also very well aware of the opportunities brought forward by the fast-transforming e-mobility technology in the country. However, at the macro level of institutions (legislations), infrastructure, culture and markets, this study observed and evidenced that there is need to improve institutional, and physical and digital infrastructure in Kenya to help women entrepreneurs set up and grow their companies in e-mobility.

Lack of financial and other resources are cited as major barriers in the sector that prevent women especially from taking part in entrepreneurship activities. The high capital costs of 2/3W EVs is a deterrent, whereas low electricity and maintenance costs are an advantage. Yet, the initial cost of possessing an EV remains major issue for many women, particularly the youth. The Kenya National Bureau of Statistics (2019) also reports that women-owned businesses are 23% less likely to access formal financing compared to male-owned businesses, and these rates are higher in particularly in male-dominated sectors like e-mobility.

In relation to the above, both in the survey and in in-depth interviews, networking and lack of mentoring have been singled out as major challenges for women in e-mobility in taking their business ideas further. Women, somehow, are less connected in the wider e-mobility community than men. Research by AfEMA and UNEP (2024) observes that 60% of women entrepreneurs feel excluded from key business networks, which limits their ability to form partnerships, access markets, and scale their businesses. Reforms in legislations would be welcomed to support women in e-mobility where their needs as mothers and wives are cared for, i.e. childcare facilities, better working hours, family tax incentives, etc. so that they can allocate time for networking activities.

Additionally, as a very positive observation, women do not feel at all unsafe, discriminated or harassed in their job roles in e-mobility in Kenya, but they clearly call for formal legislations and policies to be developed and implemented to set the rules. Such written policies will then have positive effect on promotion processes for women and for them getting to decision-making positions in the sector either in large companies or in their own companies.

6.3. Recommendations for responding to women's needs in the short- and medium-term

Kenya has made big progressive steps in renewable energy and its related infrastructure as well as adoption of digital technologies and its related infrastructure over the last decade addressing the macro level of an e-mobility ecosystem to ensure it functions well. Based on the observations from both quantitative and qualitative data, Kenya, now needs to incorporate policy tools to fine tune the meso level support functions in the e-mobility ecosystem whilst keeping strengthening the macro level functions in the ecosystem.

Currently, NGOs such as GIZ, UN and domestic organisations such as EMAK are working hard on the ground to provide e-mobility training through dedicated e-mobility programmes and apprenticeships so as to sustain the workforce the sector needs in near future. There are wider calls to embed e-mobility into engineering curriculum at the universities and technical colleges. The National E-Mobility Policy (MoRT, 2026) stresses the need for upskilling of the e-mobility workforce. These are very important efforts, yet a structured, focused and multilevel e-mobility training programme has to be designed and implemented. A technical e-mobility education at colleges and universities needs to be complemented by training of large and domestic e-mobility company employees and extend particularly to creation of e-mobility entrepreneurs who need different kinds of complementary skills, i.e. running a business. For instance, when these e-mobility education efforts in technical colleges and universities can be combined with in-resident pre-incubators in universities, then students as nascent entrepreneurs can be attracted as early as possible and upskilled in a timely manner to generate further socio-economic growth in the sector.

From this perspective, for the meso level, our recommendation focuses on one overlooked policy tool in Kenya's e-mobility ecosystem that can help raise skills not only of women entrepreneurs but also of men entrepreneurs. For that, there is:

(1) a need to acknowledge the role of entrepreneurs in the e-mobility ecosystem, a point which is missed opportunity in the National E-Mobility Policy that focuses exclusively on raising skilled labour for the established companies in the e-mobility sector.

(2) there is need for incorporation of support for e-mobility entrepreneurs and how they will be upskilled and supported for growth. The most effective policy tool for meso level support are pre-incubators, incubators and accelerators via public-private partnerships that support entrepreneurs at the idea phase and then support startups at establishment and growth phase.

An entrepreneurship policy is crucial since given the large population of youth in Kenya; entrepreneurship emerges as an attractive opportunity in e-mobility to provide jobs for youth. Yet, a specific entrepreneurship policy is missing in e-mobility sector. The next edition of National E-Mobility Policy can consider inclusion of this missing point on entrepreneurship policy design in e-mobility.

The current implementations of support to entrepreneurship activities in the African context is confined to the concept of 'Innovation Hub' – private organisations that provide support for general innovative idea generation and innovation management to young nascent entrepreneurs – where the context is characterised by institutional voids (Züfle and Von Carlowitz, 2026). Even though institutional voids exist, Kenya has taken major steps in policy formulation for her strategic sectors such as e-mobility as discussed in the previous sections of this report. The next steps require implementation of the formulated policy whilst also fixing and fine tuning the policy through learning-by-doing. Therefore, as an instrumental policy tool, it is very timely that incubation process is considered and this should go beyond the concept of 'Innovation Hubs' where potential entrepreneurs can learn about entrepreneurship skills as well as technical e-mobility knowledge in cooperation with large foreign and domestic e-mobility companies, collaborate with them for any activity in the e-mobility value chain to generate new ideas and value. A specific entrepreneurship policy should start with creation and inclusion of pre-startup and early startup incubators and scaling up accelerators into the ecosystem to specifically support nascent entrepreneurs in e-mobility and help grow successful entrepreneurs. These efforts should give priority and where necessary implement quotas for women entrepreneurs.

Currently, there are few examples of such incubators in Kenya as discussed in section 3.2.2., namely Kenya Climate Innovation Centre (KCIC), Konza Technopolis as role models to be built on, but more emphasis and structured policies are needed for establishment of more incubators. Through knowledge exchange with best practice examples from advanced countries that implement incubator support tool effectively, Kenyan incubators can develop state-of-the-art entrepreneurship training programmes.

In a pilot study over 6 months, this project developed an E-mobility Entrepreneurship Programme and trained 6 pre-startup and 11 early start-up women entrepreneurs in a joint effort by Kenya Climate Innovation Centre (KCIC) as led by Ernest Chitechi and James Gatimu and Coventry University Social Enterprise (CUSE) as led by Dr Eleanor Browne.[27] The below section provides three selected case studies of women entrepreneurs operation in the field of e-mobility in Kenya. [28]

[27] A full report of the training and its short-term impact assessment can be found at https://acts-net.org/publications-and-resources/

[28] Consent is received from women entrepreneurs to include their cases in this report.

7.E-mobility entrepreneurship opportunities for women: Case studies

Advances in renewable technologies and digitalisation provide ample opportunities in technical maintenance, fleet management and battery swapping domains for women to do business as entrepreneurs owning businesses and generating jobs for others. However, women entrepreneurship is not yet in the domain of e-mobility policy in Kenya. Although the numbers are quite few, there are women who already embarked on this task.

As part of the British Council Project, the practitioner partners Coventry University Social Enterprise led by Dr Eleanor Browne and Kenya Climate Innovation Centre (KCIC) led by James Gatimu designed and implemented an e-mobility focused entrepreneurship training programme for women in e-mobility in Kenya. Following a wide-ranging advertisement of the training 6 pre-startup and 11 early startup companies led by women entrepreneurs have been selected. This section presents case studies of women entrepreneurs and their e-mobility business ideas. Three women entrepreneurs have given consent for disclosure of their names and business ideas and models. The below sections showcase these unique and exemplar cases for women entrepreneurship in e-mobility in Kenya.

7.1. Solar-powered e-motorbikes supported with digital platform replacing battery swapping in Nairobi and providing e-commerce opportunities to small businesses

Designed according to women riders' needs, purely solar powered motorbikes, i.e. motorbikes with solar panel canopies, exhibit the potential to bring an environmental dimension to local deliveries. Solar technology can replace batteries preventing battery pollution in the long run. For women entrepreneurs the prevention of environmental pollution and environmental impact generation is one very important issue.[29] Diana Irungu, founder and CEO of We Deliver, has been working on market testing of her idea for using a fleet of e-motorbikes with solar panels connected through an app, a business model that not only responds to environmental challenges but also frees riders from being bound to a fixed battery swapping station. The project also helps small businesses grow via increasing their market share through e-commerce contributing to the wider economy.

[29] See section 4.2 of Report 2 for evidence and elaborations on this based on survey data gathered in this project. Report 2 is available at https://acts-net.org/publications-and-resources/

Case 1 Diana Irungu – We Deliver: Combining solar canopy bikes and digitalisation for e-commerce to support small businesses in Nairobi

CASE 1

Diana Irungu — WeDeliver: Combining solar canopy bikes and digitalisation for e-commerce to support small businesses in Nairobi

We Deliver – Diana Irungu, Nairobi, Kenya
Sector: Green Logistics / Last-Mile Delivery

The Founder

Diana Irungu is the founder and CEO of We Deliver in Nairobi. She brings over 14 years of experience driving commercial strategy and revenue growth across Africa for Johnson & Johnson, Bayer, and Tata Chemicals. Her track record includes scaling health innovations, managing $15 million P&Ls with 48% growth, and designing last-mile distribution frameworks in collaboration with the World Health Organisation and United Nations.

The Problem We Deliver Solves

We Deliver is a B2B delivery service serving pharmacies, supermarkets, and other small businesses that subscribe to the platform. Diana is deeply motivated to empower the 6.5 million SMEs that form the backbone of Kenya's economy.
Through We Deliver, she aims to solve two interconnected crises:

1.Unaffordable last-mile delivery – For 98% of Kenya's SMEs, the high cost of petrol-based delivery ($2.30 per trip) acts as a 30% profit tax, locking them out of e-commerce growth.

2.Carbon-intensive urban logistics – The logistics sector relies heavily on polluting vehicles, contributing to Kenya's low EV adoption rate of just 0.4%.

The Solution

We Deliver offers a unique, hyper-localized approach: an asset-light digital platform that connects SMEs to a decentralized network of rider-owned, solar-powered e-motorbikes.
Technology Platform

Our proprietary app integrates WhatsApp for Swahili onboarding and GPS photo proof of delivery. This combats the 1-in-5 delivery failure rate caused by theft and lack of transparency, building essential trust between SMEs, riders, and customers.

Asset-Light & Empowered Fleet

We Deliver own zero bikes. Instead, riders earn their solar-powered e-motorbikes through a lease-to-own model for over one year. This turns massive capital expenditure into performance-based operational expenses. The model prioritizes recruiting women riders, creating direct economic empowerment for women.

Affordability for SMEs

By eliminating fuel costs entirely, We Deliver cuts delivery costs by 66% to just KES 100 per trip. This makes delivery affordable for the first time, allowing SMEs to expand their customer range through e-commerce and grow their businesses.

Validated Demand

We Deliver already has a waitlist of over 1,000 SMEs across five or more towns, with 81 SMEs in our initial pilot town fully mapped and ready for onboarding.

Diana's Entrepreneurial Journey[30]

The Aha Moment

“My aha moment happened when I was chasing an order I had already paid for — including a KES 300 delivery fee. The endless back-and-forth with the business owner and the rider, combined with the high cost, made it cheaper to drive my own petrol car and pick up the order myself.
My background is strategy and problem-solving, so I started looking into how to make delivery affordable and less inconvenient for small businesses in my neighborhood. I already owned an EV bike and knew how inexpensive it was to operate in Nairobi traffic. That is when it clicked: maybe there should be more EV bikes delivering.”

Challenge 1: The Rider Debt Trap

“When I spoke to the riders, they pushed back. They said: "Yes, EV bikes cost half as much to operate. But we cannot afford to buy a bike outright. We have to take out loans. We are trapped." I realized the problem was not just about delivery pricing. It was also about the rider's economic viability.

Traditional EV loan programs require riders to make daily payments of KES 325 to KES 575, regardless of whether they complete deliveries. These rigid repayment schedules leave riders vulnerable to income shocks. Even major lenders have reported rising defaults, as informal sector incomes remain under pressure.

I kept looking for ways to reduce operational costs. That is how I ended up in green energy — because the cost of petrol and even conventional EVs became too expensive. The solar bike became a viable alternative. It costs zero to operate. When I did the math, I knew I had a solution.

That solution became our lease-to-own model. Riders pay nothing upfront. They earn their solar-powered motorbike by completing 3,650 deliveries over approximately one year.

[30] Interview with Diana Irungu, 27 February 2026.

minimum of 10 deliveries per day, a rider earns at least KES 500 daily — approximately $3.85 — and can earn up to KES 750 or more. After one year, the bike transfers to the rider at no additional cost. They own a productive asset valued at over KES 140,000 (approximately $1,094), completely debt-free, while earning a sustainable living along the way."

Challenge 2: Sourcing the Solar Bike

"Where could I source a solar e-bike with a canopy? That became a nightmare. There were none available in Nairobi. I went to the coast. A company there had one, but the bike was impractical — too big, designed for men, not meant for Nairobi roads. A woman could not ride it.

I came back. A few months of sourcing led me to a supplier in China. I went to China, but their minimum order quantity was too high. I took a sample and returned it. Then the supplier announced he was moving back to Australia. I lost him.

I started again. Finally, I found a reliable supplier in China. I have not met them in person, but the bike works. I gave it to a rider to test. It is still running around, cost-free. Solar bikes work."

Challenge 3: Building the App and Finding Support

"Now the app. The app is the business. Finding a technical partner to help with coding was challenging because I am not a developer, but I know exactly what I want the final product to do. We now have the code. We know where we are deploying. We have integrated the payment API. And we are at the point where we need to talk to people smarter than us about the next steps. Thank God for incubators like KCIC. Finally, there was a solution to help me navigate this journey. I was stuck between outsourcing, taking a loan, or looking for grants. I also foresee future challenges — maintaining bikes, scaling operations, and finding partners on the ground. I need networks. I need mentorship. And that is exactly where we are now."

7.2. Solar-charged e-bikes revolutionising farming for women in rural Kenya

Solar technology uptake in charging e-bikes and e-motorbikes is steadily increasing outside Nairobi. The idea is currently more in the form of solar charging stations as is prevalent in Nairobi. Maureen Mwanu is taking the lead in introducing this model to rural Kenya for baobab farmers. Case 2 tells her project.

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Case 2 Maureen Mwanu – Shamba Ride: Empowering Rural Women Farmers with Solar-powered Electric Mobility in Kinondo

Maureen Mwanu is the founder of Shamba Ride in Kinondo in Kwale province of Kenya, about 500 km southeast of Nairobi. Shamba Ride provides rural farming support to baobab farmers with solar-powered e-bikes prioritising women farmers. Rural baobab farmers in Kenya face limited access to markets due to poor transport infrastructure, long distances, and high costs of fossil fuel mobility. These challenges lead to post harvest losses, low incomes, and reduced participation of women and youth in the baobab value chain. E-bikes provide an affordable, low carbon transport solution that improves rural mobility while supporting climate resilient livelihoods linked to indigenous baobab trees.

Maureen's business model is built on load carrying rugged e-bicycles suitable for rural terrain, solar-powered charging hubs, and a community-based ownership and maintenance model. By combining clean mobility with agricultural value-chain needs, the solution reduces emissions while improving access to markets, aggregation centres, and extension services. This approach directly supports nature-based livelihoods by enhancing the economic value of baobab harvesting without encouraging land expansion. E-bikes are designed with female users in mind with lighter frames, adjustable seating, and load options that reduce physical strain during harvesting and transport. Women baobab farmers are prioritized as users and co-owners through cooperative and lease-to-own models, ensuring access without high upfront costs. The project has the potential to further create employment for women as fleet managers, cooperative coordinators, and charging hub operators, while also training young women as e-bike technicians. Overall, Shamba Ride business model cares for environment, community and women.

Maureen's entrepreneurship journey[31]

My motivation for e-mobility entrepreneurship:

"I got into the e-mobility, because of a lack of transportation in my rural region in Kenya. Kwale, which is the southernmost part of the country, and mobile penetration and transportation is mainly focussed on men. The men run the society and how food is placed on the table. However, this also is a disconnect, since the women are the ones who do the farming. They are the ones who are in the Shamba every day, and they need transportation. And when it comes to that, that's where the men come in, and they control the finances. And with that also comes a lot of loss in terms of the goods from the Shamba. That being as it is, there was a need for transportation. We started with using the bikes, which is petrol. But the challenge was still the penetration of women.

[31] Interview with Maureen Mwanu, 27 February 2026.

We were all depending on men because the women didn't have the license to do the petrol bikes, and if the men decide we can't come today, then it means the women go on a loss. So, to ensure that women farmers secure their own money, we tried tuk tuk that can be driven by women yet still found a challenge of penetration. There are no women doing any transportation logistics at the southern coast. So, part of the questions that we asked the women, because I was working in a factory, was how can we find a solution? Like, if we could get bikes, it would be great."

How did I do it?
First, it was all about acquiring bikes for women farmers. But how to secure initial finance and operational costs for bikes?

"However, they needed a system that they can pay slowly by slowly, which is in form of loan payment because their men are not willing to buy them the bikes. That is the only way we can get these bikes and if you give us time and monitor even our harvest so that we can use that to leverage the bikes. Then came the next question, where are we going to get the petrol?"

Then, we realised that we have the sun power and solar-powered e-bikes can be the solution:
The cost is the funniest location in the country, almost 365 days of sunshine. But there's no power. Many places don't have power, and they don't have internet. So, the solution for them, they told us was if you can use solar panels, because we know we use solar panels for lights in the house. So, the bikes at the cost, either petrol or they use batteries. Those that use batteries are mainly focussed for tourists, where you can get around the beach or the area. And I went to do my research with them to try and see what kind of bikes they have, but they're purely meant for... pleasure, yeah, and only carrying tourists to just see places that here. They can't carry luggage, that these farmer women need. Actually, at the moment, I don't see any charging ports for the bikes or where women can exchange batteries. But at the same time, they do not have Android phones. Because I'm conversant with Nairobi, I came to Nairobi and I have a friend who builds bikes and he informed me bike that can be used by both women and men who do transportation. So, with that, I started doing my research and yes, I'm still getting a lot of challenges."

What the incubator support provided me with? Networks that I can acquire really useful information:
"Here, I met woman entrepreneurs who already have suppliers for solar-powered e-bikes specially designed for women. She can give me her contact. For the e-bike. She's, gotten a sample on. So, I can't build on that."

7.3. Technical maintenance and battery swapping expanding to rural Kenya empowering women and youth

Traditional BaaS model is being transferred into rural areas in Kenya. Women take on entrepreneur roles setting up their own companies which deliver battery swap and 2W EV maintenance service in rural areas. Traditional BaaS model in rural areas is more decentralised, i.e. customers are not restricted to the 2WEV company's swapping stations as is the case in Nairobi. Women with technical degrees have spotted this opportunity in rural areas. Joan Amondi is one of these entrepreneurs. We present her story in Case 3.

Case 3 Joan Amondi – JAS E-Mobility: Powering Rural Women and Youth through Affordable Electric Mobility in Homa Bay

Entrepreneur	Joan Amondi
Business	JAS E-Mobility (Joan's Battery Swapping Station)
Location	Homa Bay Town, Homa Bay County, Kenya
Sector	Electric mobility – battery swapping, rider training & community awareness
Background	Medical Engineer; trained in electric mobility (UNIP programme)
Focus	Women and youth empowerment through affordable, clean transport

Joan at her company and when she is being trained at UNIP E-mobility programme.

Overview

Joan Amondi is the founder of JAS E-Mobility (Joan's Battery Swapping Station), based in Homa Bay Town — a rural community in Homa Bay County, approximately 350 km northwest of Nairobi. Inspired by the success of battery swapping models in the capital, Joan recognised an urgent opportunity to adapt the concept for rural Kenya, where riders face the compounding challenges of high fuel costs, frequent motorcycle breakdowns, air pollution, and severely limited access to clean, affordable transport options.

Women and youth are disproportionately affected by these barriers, with restricted access to training, finance, and entrepreneurship pathways in the e-mobility sector. Joan's venture responds directly to this gap. Rather than simply selling electric motorcycles or offering battery swapping services, JAS E-Mobility takes a holistic, community-centred approach — combining rider education, basic maintenance training, and sensitisation workshops on the benefits of electric mobility, all designed around the realities of rural Kenyan communities.

A particular emphasis of the business is building the confidence and capability of women and youth riders. This includes hands-on training in safe motorcycle operation and basic maintenance, as well as promoting motorcycle designs that address women's practical needs — such as comfortable seating, manageable seat heights, and ease of handling.

Business Model

Joan brings a rare combination of technical expertise, lived experience, and entrepreneurial vision to her business. With an engineering degree, hands-on experience assembling and testing electric motorcycles, and formal training through the UNIP e-mobility programme, she is uniquely positioned to offer solutions that are practical, user-informed, and suited to the Kenyan context. The JAS E-Mobility business model encompasses:

- Electric motorcycle adoption and test ride opportunities for first-time users
- Fast, reliable, and affordable battery swapping services for electric boda boda riders
- Technical support and motorcycle maintenance services
- Structured rider training programmes targeting women and youth
- Community awareness and sensitisation workshops on e-mobility benefits

Located at the heart of Homa Bay Town, JAS E-Mobility is positioned to become a local e-mobility knowledge and support hub — a trusted resource for riders, aspiring entrepreneurs, and the wider community. By leading as a woman rider, technician, trainer, and business owner, Joan serves as a compelling role model, demonstrating that women can thrive and lead in Kenya's growing e-mobility sector.

Joan's Entrepreneurship Journey[32]

Joan shares her path into e-mobility entrepreneurship in her own words, reflecting on the training, insights, and personal determination that shaped her decision to bring electric mobility to Homa Bay:

On her motivation:

"I am trained as a medical engineer, but it was the UNIP training that completely transformed my perspective on electric mobility. The programme equipped me with practical skills — I learned to ride, assemble, and disassemble electric motorcycles, and developed entrepreneurial skills specific to the EV sector. I excelled in assembly and subsequently gained employment in the e-mobility industry.

Seeing the potential, I began asking myself: what if I could start a business in e-mobility in my home area of Homa Bay, where most people have never heard of electric mobility? I knew I would need to educate the community and demonstrate its advantages first. That is when the idea of a battery swapping station took shape. Once riders have electric bikes, swapping a battery takes just one minute — far quicker and cheaper than queuing to refuel petrol motorcycles."

On her vision and mission:

"My vision is to provide a fast, reliable, and affordable battery swapping solution for electric boda boda riders in Homa Bay and beyond. I especially want to encourage more women to enter this space — I am already riding long distances confidently on an electric motorcycle, and I want other women to see that this is possible for them too.

My mission is to reduce downtime for electric motorcycle riders, promote clean transport in Kenya, empower women and youth in the e-mobility sector, and build greater self-reliance and accessibility within our communities."

[32] Interview with Joan Amondi, 27 February 2026.

7.4. EV charging infrastructure and the role of digitalisation and apps in battery charging: SaaS on long distance roads throughout Kenya

Digitalisation in the context of EV charging/swap stations opens further business opportunities. Responding to the demand from 2W EV users, there are already women entrepreneurs in Nairobi who are working on developing and launching apps and web platforms to decentralise charging/swap infrastructure and responding to multiple app problem despite governance and technical barriers (see section 4.4). An interoperable battery charging/swapping system enabled by digital technologies will benefit users immensely. Hence, startup companies are trying to develop solutions for these responding to a market opportunity.

Responding to company lock-in disadvantage in battery charging during long distance driving, an anonymous woman entrepreneur has been working on market testing of her idea for collaborating small businesses on the roads and integrating multiple apps into her product so that riders can use any charging/swapping station. We present her case below.

Case 4. Entrepreneur X, Nairobi, Idea generation and commercialisation phase for interoperability of battery charging/swapping

Entrepreneur X has considerable experience working in project coordination and consulting with one of Kenya's largest EV charging infrastructure companies, she observed that most charging deployments are slow to implement and heavily focused on large corporates and multinationals - these have longer approval procedures. The charging infrastructure would be concentrated in a few urban locations, while long-distance routes and secondary towns remain underserved. The biggest challenge with long-distance routes is reliable access to charging points along the route.

Entrepreneur X's approach to the problem focuses on route-based charging deployment by partnering with smaller petrol stations, rest stops, and accessible roadside locations that have faster approval processes and lower barriers to entry. These sites are easier for drivers to access without extra parking or entry fees. By prioritizing practical, high-traffic locations along travel corridors rather than only flagship sites, the model enables faster rollout, better coverage, and improved usability for everyday EV drivers.

The project uses digital platforms, i.e. Software-as-a-service (SaaS) solutions for charger monitoring, usage analytics, and billing. Once growth is secured, Entrepreneur X plans to widen the project to additional revenue streams including training and skills development, delivered in partnership with TVET institutions, as well as operation, repair, and maintenance services for charging infrastructure deployed by Entrepreneur X and her collaborators.

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