

**SUB-REGIONAL WORKSHOP ON THE NORTHERN CORRIDOR GREEN FREIGHT STRATEGY 2030 ON  
25<sup>TH</sup> – 26<sup>TH</sup> MARCH, 2024 AT FOUR POINTS BY SHERATON HOTEL, KAMPALA**

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Also Representing,

1. Uganda Transporters Alliance
2. Rwanda Transporters Association
3. Burundi Transporters Association ( ATIB)
4. Federation of Congolese Business Enterprises ( FEC)
5. South Sudan Business Forum

**1. INTRODUCTION**

Kenya has committed to ambitious targets for mitigating Greenhouse Gas (GHG) emissions. The nation aims to achieve a **32% reduction in overall GHG emissions by 2030**, with a particular emphasis on curbing energy-related emissions by 10%. Among the contributing modes of transportation, roads accounted for 12.09 MtCO<sub>2e</sub>. Despite the current prevalence of registered electric vehicles (EVs) representing less than 0.1% of the total vehicle population (**4,047 out of 4.4 million as of 2023**), there is an EV progressive growth, accelerating by over 500% in the Year 2023.

**2. THE CURRENT STATE OF ELECTRIC MOBILITY IN KENYA**

As of December 2023, the electric vehicle (EV) market in Kenya is emerging with a growing presence of electric bicycles, motorbikes, tuk-tuks, passenger cars, buses, trucks and specialized equipment's such as forklifts and tractors. There is growth with the number of newly registered EVs from **65 units in 2018 to 4,047** units in 2023, making up 2.4% of all new vehicles sold in Kenya as of the end of Year 2023.

Year	2018	2019	2020	2021	2022	2023
Electric bicycles					321	1353
Electric motorbikes	44	96	28	144	366	2557
Electric tuk-tuks		4	21	35	40	39
Electric passenger cars	12	15	31	62	36	45
Electric buses					3	21
Other electric vehicles	9	14	24	43	30	35
<b>Total EVs registered</b>	<b>65</b>	<b>129</b>	<b>104</b>	<b>284</b>	<b>796</b>	<b>4047</b>

Source: NTSA

A case for Rwanda:

	Ampers and	CarCarBaba	REM	SAFI	OX	Kabisa	Volkswagen	RwandaMotors	KAS Auto	GEV	SPIRO	Akagera	Greenleaf Motors	BasiGo	VivoEnergy	TVS	TOTALS
2 Wheeler	1000		250	63		0					300						1313
3 Wheeler						0											0
Saloon Cars			6			0	50	2									58
Jeep			40			0											40
Light Duty Trucks/Vans				2		0											2
Med Duty Trucks/Vans					1	0											1
Busses						0			15								15
<b>TOTALS</b>	<b>1000</b>		<b>296</b>	<b>65</b>	<b>1</b>	<b>0</b>	<b>50</b>	<b>2</b>	<b>15</b>	<b>0</b>	<b>300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1429</b>

Source: RDA

### 3. KEY PLAYERS ON E- MOBILITY

#### A. Our Governments

The Ministries and The Regulatory agencies such as, The Ministry of Transport, Energy, Infrastructure, Housing, Urban Development, and Public Works, alongside Energy and Petroleum Regulatory Authority (EPRA) play a central role in shaping the electric mobility landscape and the electric utility, KPLC.

These institutions enact legislation, incentives, and standards that significantly influence the adoption and development of electric vehicles (EVs).

#### B. Manufacturers and distributors

While the EV market is still young, there are emerging players in the industry who assemble electric vehicles and batteries locally. Some of the largest companies in Kenya are Roam, Ampersand, ArcRide, Fika Mobility, and Spiro (motorcycles), Autopax, Knights Energy, Caetano, and (soon) BYD (passenger cars), eBee Africa and ArcRide (electric bicycles), and Roam and BasiGo (buses), among many others. Notably, many of these players extend their services beyond providing battery charging and swapping solutions. It is important to note of the rapid advancements in alternative technologies, including other fuel sources such as hydrogen, which are gaining momentum globally.

#### C. Charging Infrastructure

The charging infrastructure providers are EVChaja, Roam, BasiGo and Knights Energy, Kenya currently has at least 17 EV charging points installed across the country, with most of these still concentrated in Nairobi. These providers contribute to the development of a reliable and widespread battery charging (or in some cases swapping) network, addressing customer range anxiety and promoting the widespread use of EVs. The charging infrastructure needs of various sub sectors differ greatly, from simple **AC charging** for e-bicycles to large **DC 60-180 kW** charging bus terminuses for electric trucks/buses. There are challenges related to the capital costs of setting up **charging infrastructure (CI)** and the current low density of charging networks. Additionally, there is currently no permitting process in place for the installation of public chargers, which could be a hindrance at the county level. In terms of opportunities, players in the industry are exploring innovative solutions such as home-charging and portable swapping locations to address the challenges related to charging infrastructure.

#### D. Financing Institutions

The Most notable players in the consumer credit market for electric vehicles include banks SACCOs, microfinance institutions, and asset finance companies (such as Hakki, M-KOPA, Mogo, and Watu Credit). They offer various financial models to address the high upfront investment and cost of capital, including Pay-As-You-Go (PayGO), PayCharge, and lease rentals. While they approach the market with a wide array of models, each play a pivotal role by providing loans, and financing opportunities to facilitate the adoption of electric vehicles, many of them for consumers without significant credit histories. Designing

fiscal benefits that incentivize these financing companies to support electric mobility initiatives can catalyse significant investment into the sector, promoting growth and long-term sustainability.

#### E. Donor Agencies

Partnerships with organizations like the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), World Resources Institute (WRI Africa), and the United Nations Environment Programme (UNEP) bring resources, funding, expertise, and support to enhance electric mobility ecosystem. These collaborations require strong government support and goodwill to ensure continued investment.

#### F. Academic Institutions

Academic institutions, including TVETs, universities, and research institutions, play a pivotal role e.g. Strathmore University is offering specialized courses, conducting research, and providing expertise to advance e-mobility technologies. These institutions train a skilled workforce, conduct R&D on battery efficiency and sustainable transportation, and collaborate with industry and government to develop innovative solutions. Their contributions are crucial in driving the adoption of e-mobility.

#### G. Associations/ Advocacy groups

Industry associations and advocacy groups e.g. Kenya Transporters Association, Uganda Transport Alliance, Rwanda Transporters Association etc play a crucial role in representing the collective interests of entities operating in the electric mobility sector in Kenya. Associations work towards fostering collaboration, disseminating knowledge, and advocating for policies that support sustainable transportation. Aligning fiscal benefits with the objectives and recommendations of these groups, tailoring policies that reflects the best interests of all stakeholders. These advocacy groups are financially supported by their members and support organization programs.

## 4. PRIVATE SECTOR PLAYERS AND THEIR AREAS OF SPECIALISATION

MSU MSU

MSU MSU

No	Company	e-Bike	e-Motorbike	e-tuk tuks/3W	e-4W(car/bus)	Charging	Financing	Research/ Training
1	STIMA Mobility Ltd		⚡			⚡		
2	Ecobodaa Company		⚡				⚡	
3	eBee mobility Kenya limited	⚡						⚡
4	ARC Ride Kenya Limited	⚡	⚡	⚡		⚡		
5	Mazi Mobility		⚡			⚡		
6	Ampersand E-Mobility Ltd		⚡			⚡		
7	EVChaja Ltd					⚡	⚡	
8	M-KOPA						⚡	
9	Kiri EV Limited		⚡	⚡				
10	Roam Electric Ltd		⚡		⚡	⚡		⚡
11	BasiGo Kenya				⚡	⚡		
12	Go-Electric Limited		⚡	⚡	⚡	⚡		
13	Drive Electric				⚡	⚡		
14	Gecss Investment Ltd		⚡					
15	FIKA MOBILITY		⚡					
16	Car & General (Trading) Limited			⚡		⚡	⚡	
17	Motion Energy Group Pty Ltd							
18	eWAKA Mobility					⚡	⚡	⚡
19	Yna Kenya		⚡	⚡		⚡	⚡	
20	Exodus Mobility						⚡	
21	Transboda Ltd		⚡					
22	Sunking						⚡	
23	Rockland Energy					⚡		
24	Hyundai							
25	Advance mobility				⚡	⚡		
26	Power governors ltd.				⚡			
27	Wuxi Tech Ltd.				⚡			
28	BEV ltd.				⚡	⚡		⚡
29	Equator Mobility				⚡	⚡		

## 5. ENTRY/ ADOPTION BARRIERS

### A. Market Barriers

- Lack of Awareness:** Industry players lack information about the benefits of electric vehicles and available greener options. A targeted awareness campaign, between government agencies, manufacturers, distributors, media, academia, influencer community and advocacy groups, can dispel myths and educate the public.
- Lack of Skill Sets:** Training programs to develop the necessary skills on maintenance, repair and safety are essential. Investing in education and vocational training can ensure that mechanics, electricians, technicians and first responders are equipped, thereby increasing consumer confidence in the technology.

### B. Reliability Barriers

- Intermittent Power Supply:** Unreliable power supply in certain regions of Kenya raises doubts about the availability of electricity for charging. Implementing grid

improvements, exploring renewable energy sources for charging stations, and employing energy storage solutions can enhance the reliability of power supply for EVs.

- **Maintenance and Repairs:** Lack of specialized maintenance and repair centres for EVs in some areas is a barrier to proliferation. Investing in training programs for local technicians, encouraging partnerships with global service providers, and establishing regional service hubs can address concerns about service accessibility and reliability. **Utu Cars** for example, has launched a mechanic-training programme, that is being offered at no cost across the nation.

#### C. Infrastructure Barriers

- **Limited Charging Infrastructure:** The availability of charging stations remains limited or none, particularly in rural areas. This lack of charging infrastructure raises concerns about range anxiety and the convenience of recharging.
- **Infrastructure Adaptation:** Adapting roads and building infrastructure to accommodate EVs and charging stations is essential. Revision of policies regarding road infrastructure to address specific challenges faced by EVs, such as lower ground clearances, will be instrumental as EV adoption increases.
- **Home Charging:** Urban planners, architects, developers, policymakers, and utility companies should collaborate to integrate home charging stations into residential building designs, potentially mandating their inclusion in the National building codes on a fraction of the parking spaces provided. Doing this with the highest safety standards is of critical importance.
- **Investment in Energy Grid:** Investment in the energy grid is crucial for ensuring renewability, accessibility, and stability. Kenya Power's investment in extending and metering the grid up to charging stations is critical for supporting the infrastructure.

#### D. Economic Barriers

- **High Initial Cost:** The upfront purchase price is higher compared to traditional internal combustion engine (ICE) vehicles. This higher cost can deter price-sensitive consumers, despite the long-term cost savings associated with EVs. Fortunately, customer financing options are available, but the lower the product cost the lower the financing requirements are.
- **Import Duties and Excise Duties:** Despite recent VAT reductions, high import duty of 35% for FBU Electric vehicles and 10% excise duty influence EV prices to the end consumer, curtaining adoption. There should be more Collaboration with the government to reassess duties on aligning them with the country's sustainability goals.

#### E. Policy Barriers

- **Incentive Programs:** The absence of stable, long-term government incentives and subsidies hampers adoption. Introducing tax incentives rebates, and subsidies (beyond one-year budgetary measures) can create a more favourable environment for potential buyers.

- **Comprehensive E-Mobility Strategy:** Lack of a comprehensive e-mobility strategy and clear implementing bodies leads to fragmented efforts and short-term opportunistic policies. Establishing a unified strategy, clearly defined roles, and a collaborative approach among stakeholders can streamline efforts and promote sector growth.
  - **Regulatory Framework for Charging Infrastructure:** The absence of clear and comprehensive regulations for the establishment and operation of charging infrastructure poses a challenge. Policies should be developed to streamline the licensing, safety, and technical and real estate management standards for charging stations, promoting their widespread deployment.
  - **Regulatory Framework around Carbon Credits.** EVs can have a significant impact on CO<sub>2</sub> reduction, and monetizing carbon credits through a compliance-based marketplace can have a very material impact on unit economics that can drive down the costs of acquiring and managing EVs. A sustainable, long-term approach to taxation of carbon credits is equally important.
  - **Absence of Circular Economy Policies:** Like most industries, the electric vehicle industry generates various waste streams, including end-of-life batteries. The lack of policies and regulations promoting a circular economy, including recycling and proper disposal of EV components, poses environmental and sustainability challenges. Policies should encourage responsible end-of-life management for EV components.
  - **Financial Barriers for Consumers:** The absence of targeted financial incentives for consumers, such as subsidies or tax breaks or low-interest loans. Developing policies that provide direct financial benefits to consumers, coupled with awareness campaigns, can address economic barriers and drive consumer interest.
- F. Quality & Standards Barriers
- **Safety and Certification Requirements:** Safety and Certification Requirements: The Kenya Bureau of Standards (KEBS) has introduced 24 safety standards for electric vehicles (EVs), derived from existing ISO standards. However, there is a growing need for additional, more detailed standards to effectively operationalize EVs. These standards should focus on areas such as charging safety without overly restricting technology choices. Specific aspects that could be addressed include connector standards, communication protocols, interoperability within the industry, and other crucial operational elements.
  - **HS Code Standards:** Harmonized System (HS) codes are essential for proper classification and regulation of goods in international trade. The absence of inadequacy of HS Code standards specific to EVs and EV parts can lead to ambiguity in customs procedures, hindering importation, exportation, and local assembly and manufacturing of Electric Vehicles and related components. Incentives and exemptions should be considered on both the EVs and EV parts, consequently benefiting the EV products assembled locally.

## 6. STRATEGIES TO ENCOURAGE SHIFT FROM INTERNAL COMBUSTION ENGINE (ICE) TO ELECTRIC VEHICLES (EV)

- Incentives and subsidies:** Incentives and subsidies from governments, e.g. tax credits and rebates, help reduce the upfront cost of buying electric vehicles (EVs), making them more financially attractive than traditional internal combustion engine (ICE) vehicles.
- Charging Infrastructure:** Investing in EV charging infrastructure is crucial for widespread adoption. Governments and private sectors should collaborate to establish a comprehensive network of charging stations, including fast chargers along highways, urban areas, workplaces, and residential areas.
- Regulatory policies:** Implementing regulations and mandates can accelerate the adoption. This includes setting higher emission standards, fuel economy regulations, and safety standards. Additionally, introducing low-emission zones or congestion pricing can incentivize the use of clean vehicles.
- Education and awareness:** Increasing public awareness about the benefits of clean Vehicles, such as lower operating costs, reduced emissions, and improved air quality, is essential.
- Fleet electrification:** Encouraging the electrification of public and private vehicle fleets can drive significant EV adoption. Governments should lead by example by transitioning their own fleets to EVs.
- Financial and technical support:** Providing financial assistance and technical support to Asset owners, auto manufacturers, suppliers, and start-ups can spur innovation in EV technology and reduce costs. This can include research grants, loans, and partnerships for battery development and production.

## 7. COUNTRIES CASE STUDIES:

Rwanda Case Study:

Fiscal incentives	Non-fiscal incentives
<b>Electricity Tariffs:</b> Capped at industrial tariff levels, with reduced tariffs during off-peak times. Charge point operators will be billed at close to USD 10 cents/kWh instead of close to USD 20 cents/kWh	<b>Government Land:</b> Rent-free provision for charging stations on government land
<b>VAT:</b> Electric vehicles, their spare parts, batteries, and charging station equipment are zero-rated for VAT	<b>Dedicated Bus Lanes:</b> Access for EVs to high-occupancy vehicle lanes
<b>Excise Duty:</b> Exemption from excise duty for electric vehicles, spare parts, batteries, charging stations, and equipment	<b>Charging Station:</b> Mandatory inclusion in building code and city planning
<b>Import Duty:</b> Exemption from import duty for electric	<b>Parking Fees:</b> Preferential treatment including free



vehicles and related equipment such as spare parts and batteries	parking in congested zones
<b>Withholding Tax:</b> Exemption from withholding tax at customs for electric vehicles and related items such as spare parts and batteries	<b>Operator License:</b> Free license and authorization for commercial electric vehicles
<b>Corporate Tax:</b> A reduced rate of 15% for companies manufacturing or assembling electric vehicles in Rwanda	<b>Vehicle Categorization:</b> Plug-in hybrids and hybrids are considered as EVs

Ethiopia Case Study:

Fiscal incentives	Non-fiscal incentives
<b>VAT:</b> Electric vehicles are exempted from Value Added Tax. This reduces the overall purchase cost for consumers interested in acquiring EVs, making them more financially appealing compared to traditional vehicles.	<b>Charging Station Facilities:</b> The government is investing in the development of EV charging infrastructure across the country. This includes installing charging stations in urban centres and along highways.
<b>Excise Tax &amp; Surtax:</b> Electric vehicles are also exempt from excise tax and surtax. This waiver further contributes to the affordability of EVs by eliminating additional taxes that would otherwise increase their purchase price	<b>Incentives for Electric Public Transportation:</b> The government is incentivizing the adoption of electric public transportation vehicles. This includes subsidies and support for the electrification of public transport fleets, such as buses and taxis, to reduce emissions and improve air quality in urban areas.
<b>Customs Tax:</b> The customs tax rate has been significantly reduced to incentivize EV adoption. Fully assembled EVs now incur a customs tax of 15%, while semi-assembled vehicles face a lower rate of 5%.	<b>Public Awareness Campaigns:</b> Various initiatives and campaigns are conducted to educate consumers on the environmental, economic, and social advantages of EVs, as well as dispel myths and misconceptions.

South Africa Case Study:

Fiscal incentives	Non-fiscal incentives
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<p><b>R&amp;D Tax Incentive:</b> Deduct 150% of R&amp;D spending from taxable income.</p>	<p><b>Manufacturing Support:</b> Collaboration with government departments and authorities for targets in EV uptake in government vehicle fleets.</p>
<p><b>Import Duties:</b> Temporary reduction on import duties for batteries in vehicles.</p>	<p><b>EV Uptake and Sales Support:</b> Incentives for producers to manufacture and sell affordable EVs.</p>
<p><b>Cash Grants:</b> 20% cash grant to Original Equipment Manufacturers (OEMs); 25% to component manufacturers; 30% for qualifying investments in new energy vehicle manufacturing, based on the cash needed for the specific investment project</p>	<p><b>Workforce Upskilling:</b> Reinvestment and support for reskilling and upskilling the workforce in EV design, engineering, and manufacturing through the development of an EV certification program in collaboration with industry for skills development, which indicates a commitment to workforce development in the EV sector.</p>
<p><b>Duty Credit (Production Rebate Certificate):</b> 20% duty credit on the value of EV batteries manufactured locally and used in the assembly of electric vehicles.</p>	<p><b>EV Manufacturing Support:</b> Incentives geared to encourage existing producers to shift to EV manufacturing, which include leveraging R&amp;D tax incentives to deepen domestic value addition and considering consumer incentives for the adoption of EVs and implementation of a framework for fleets to transition to SA-produced new energy vehicles, which could indirectly incentivize producers by creating demand.</p>
<p><b>Carbon Fuel Levy:</b> A levy charged between 10-Rand cents per liter for petrol and 11 Rand cents for diesel.</p>	
<p><b>Environmental Levy:</b> On carbon dioxide emissions of motor vehicles (<b>120 Rand per g/km</b> CO<sub>2</sub> emissions exceeding 95g/km and 160 Rand per g/km CO<sub>2</sub> emissions exceeding 175g/km for commercial vehicles).</p>	

**RECOMMENDATIONS:**

The journey towards sustainable development and economic resilience is significantly advanced by the adoption of electric mobility (e-mobility), offering vast economic, environmental, and societal benefits. Highlighting the economic advantage of reducing oil imports, and generate up to USD 305 million in charging revenue for the government, displaying e-mobility as a key driver for economic growth.

The environmental benefits are notable, with a potential reduction of CO<sub>2</sub> emissions by over 600 thousand tonnes in three years, advancing the commitment to emission reduction and climate change mitigation.

With fiscal incentives in a comprehensive way, the overall benefits of an accelerated e-mobility transition far outweigh the initial revenue reductions, resulting in a net gain. We must adopt a strategic, cohesive e-mobility plan that promotes fiscal incentives and supports the local automotive industry to harness the full benefits of this transition through collaborative efforts.



The call to action is clear: We must forge ahead with a coherent, ambitious e-mobility strategy that not only leverages fiscal incentives but also fosters an enabling environment for the growth of the local automotive sector.