MAKING
UGANDA
THE BEST

UGANDA E-MOBILITY OUTLOOK REPORT 2024

UGANDA AS A NET SOURCE OF E-MOBILITY SOLUTIONS

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Uganda as a Net Source of E-Mobility Solutions

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MAKING UGANDA THE BEST

Foreword

The transition to electric mobility represents a pivotal shift in Uganda's transportation sector—aligning with our national development goals, environmental commitments, and aspirations for a more sustainable future. The E-Mobility Outlook Report 2024 provides a comprehensive assessment of Uganda's progress in implementing the National E-Mobility Strategy, outlining the opportunities, challenges, and strategic interventions necessary to accelerate this transition.

As we stand at the cusp of a global shift towards cleaner and more efficient transport solutions, Uganda is taking decisive steps to integrate e-mobility into its transportation ecosystem. The government, through the National E-Mobility Strategy, has demonstrated a strong commitment to fostering an enabling environment for Electric Vehicle (EV) adoption.

With our intentional fiscal and non-fiscal interventions, we have attracted investment of over USD 160 Million and built the nation's capacity to produce up to 10,000 Electric Vehicles annually with up to 40% local content. We are building a robust EV Charging Network, currently comprising over 30 DC Fast Chargers and over 130 Swapping Stations across the country.

Beyond the environmental benefits, the adoption of electric mobility presents a significant opportunity for economic growth, job creation, and energy security. With Uganda's growing energy generation capacity, particularly from renewable sources, electric mobility offers a sustainable means of reducing dependence on imported fossil fuels while fostering local industries in battery manufacturing, vehicle assembly, and related services. This transformation, however, requires collaboration across public and private sectors, academia, and civil society to address challenges such as high initial costs, infrastructure gaps, and consumer awareness. As we work towards a cleaner, more efficient transport sector, it is imperative that we continue to build strong partnerships, foster innovation, and implement policies that support a seamless transition to E-Mobility.

I extend my appreciation to all contributors, researchers, and stakeholders who have played a role in the development of this report. Together, we are shaping the future of Uganda's mobility landscape—one that is sustainable, inclusive, and resilient.

Hon. Dr. Monica Musenero Masanza

Minister for Science, Technology and Innovation
Office of the President

Abstract

The Uganda E-Mobility Outlook Report is an annual publication that reports on recent developments in E-Mobility in Uganda. It is developed with the support of members of the Inter-Ministerial Technical Taskforce on E-Mobility and Uganda's E-Mobility Ecosystem. The report draws on the latest data to assess the progress in the implementation of the National E-Mobility Strategy along the priority areas. It considers recent policy developments and industry strategies shaping the outlook for Electric Vehicles in Uganda.

The Uganda E-Mobility Outlook Report 2024 is the first edition and features analysis of the E-Mobility Ecosystem in Uganda, Electric Vehicle manufacturing, battery development and manufacturing, public transport electrification, the sale and uptake of Electric Vehicles and distribution of charging infrastructure.

Acknowledgments

The **E-Mobility Outlook Report 2024** was prepared by the Mobility Bureau at the Science, Technology and Innovation Secretariat – Office of the President (STI-OP) through the collaboration and contributions of the E-Mobility Ecosystem players in Uganda. The Mobility Bureau is mandated with the coordination of the transition to E-Mobility in Uganda.

The Principal Authors were (in alphabetical order): Allan Muhumuza, Benjamin Ndawula and Thatcher M. Nakimuli, the members of the Mobility Bureau at the Science, Technology and Innovation Secretariat, Office of the President. The authors used valuable data, feedback and insights from industry, relevant government ministries and departments, and the E-Mobility ecosystem.

Sincere gratitude is extended to the Ministry of Energy and Mineral Development and Ministry of Works and Transport for their leadership and policy stewardship within their respective mandates in promoting E-Mobility in Uganda. Our appreciation also goes to the Uganda Revenue Authority for providing essential data and insights that shaped this report.

Special recognition goes to the private sector in the E-Mobility Value Chain whose innovative efforts are enabling us to get closer to our goal of positioning Uganda as a net source of E-Mobility solutions in the region. Specific appreciation goes to the following players for their critical data contributions: Kiira Motors Corporation, Gogo Electric, Zembo, Spiro, Redvers, Karaa, KaCyber Security Technologies, GreenHub, eBee, E-Bus Xpress, SafeBoda and Motorcare.

The Mobility Bureau and STI-OP is grateful to all individuals and institutions that participated in consultations and contributed technical expertise to this report. Their collective efforts have made this publication an indispensable resource for policymakers, investors, and industry leaders working to advance Uganda's E-Mobility agenda.

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DC	Direct Current
E-Mobility	Electric Mobility
EV	Electric Vehicle
FEV	Fully Electric Vehicle
GWh	Gigawatt Hours
HEV	Hybrid Electric Vehicle
IEA	International Energy Agency
KMC	Kiira Motors Corporation
MWh	Megawatt Hours
PHEV	Plug-in Hybrid Electric Vehicle
R&D	Research and Development
SUV	Sports Utility Vehicle
UEMA	Uganda E-Mobility Association
USD	United States Dollar
WMI	World Manufacturer Identifier

1

Introduction

1.1 Background

The global transition to Electric Mobility (E-Mobility) is accelerating, driven by technological advancements, policy support, and environmental imperatives. According to BloombergNEF's Electric Vehicle Outlook 2024, Electric Vehicle (EV) sales were projected to grow from 14 million units in 2023 to 16.7 million units in 2024, reflecting a robust growth trajectory. Electric Commercial Vehicles continue to register the highest growth rates with buses and two- and three-wheelers accounting for 26% and 47% of EV sales respectively. This surge is underpinned by rapidly falling battery prices, advancements in next-generation battery technology, government policy and the improving economics of EVs compared to internal combustion engine vehicles.

According to the International Energy Agency (IEA), EV sales accounted for 14% of global vehicle sales in 2023, with projections indicating that by 2040, over 60% of new car sales will be electric. The manufacturing sector is at the heart of this transformation, with global investments in EV production, battery gigafactories, and charging infrastructure surpassing $500 billion in the past decade.

Africa stands at a critical juncture in this shift, presenting both opportunities and challenges. The continent accounts for less than 1% of total EV sales, but the demand for clean transport solutions is rising. The need to reduce dependence on fuel imports, growing vehicle market, and abundant renewable energy potential, positions Africa as a strategic player in the E-Mobility revolution.

Uganda was a pioneer in E-Mobility on the African continent, taking a unique approach that prioritizes local manufacturing alongside EV adoption, with its journey starting as far back as 2009 with the development of the Kiira EV–Africa's first fully Electric Vehicle. Government of Uganda and the Private Sector have invested in domestic production, with local companies leading the development of electric buses, electric motorcycles, electric bicycles and battery pack technology. The country's commitment to industrialization ensures that E-Mobility is not just about replacing fuel-powered vehicles but also about creating jobs, building technical expertise, leveraging natural resources through value addition, and reducing the trade deficit through local manufacturing.

This E-Mobility Outlook Report provides a review of Uganda's progress, as of December 2024, in building a globally competitive and sustainable E-Mobility ecosystem. It tracks key milestones in line with the National E-Mobility Strategy priorities and targets. By offering insights into these developments, this report aims to guide policymakers, investors, and industry stakeholders in positioning their efforts towards Uganda's ambition to become a net source of E-Mobility tools and solutions in the region.

1.2 Uganda E-Mobility Ecosystem

The E-Mobility Ecosystem in Uganda is a comprehensive and strategically coordinated initiative under the auspices of the Mobility Bureau at the Science, Technology and Innovation Secretariat. This ecosystem, organized through the E-Mobility Consortium, includes over eighty diverse value chain actors dedicated to sustainably delivering E-Mobility solutions across the nation. The ecosystem has been structured into six essential clusters of: R&D, Engineering, and Manufacturing; Energy; Transport Planning and Operations; Digital Infrastructure; Policy; and Value Chain Financing.

Figure 1: E-Mobility Ecosystem in Uganda

The Uganda E-Mobility Association (UEMA) was established in April 2024 as a non-profit association dedicated to promoting and advancing electric mobility in Uganda. UEMA's mission is to drive the adoption of Electric Vehicles and support the development of charging infrastructure in Uganda, fostering a sustainable, clean, and efficient transportation system. The association as of December 2024 had 23 Members.

1.3 National E-Mobility Strategy

Uganda's National E-Mobility Strategy, published on 31st October 2023, represents a convergence of minds, expertise and unwavering commitment by government and private sector players to advance Uganda's transition to E-Mobility. The strategy targets to position Uganda as a net source of E-Mobility tools and solutions in the region to reduce dependence on imports and improve the wellbeing of Ugandans. The Strategy's vision is Uganda's full transition to E-Mobility in public transport and motorcycles by 2030 and passenger vehicle sales by 2040. *Figure 2* highlights the seven (7) priority areas of the National E-Mobility Strategy.

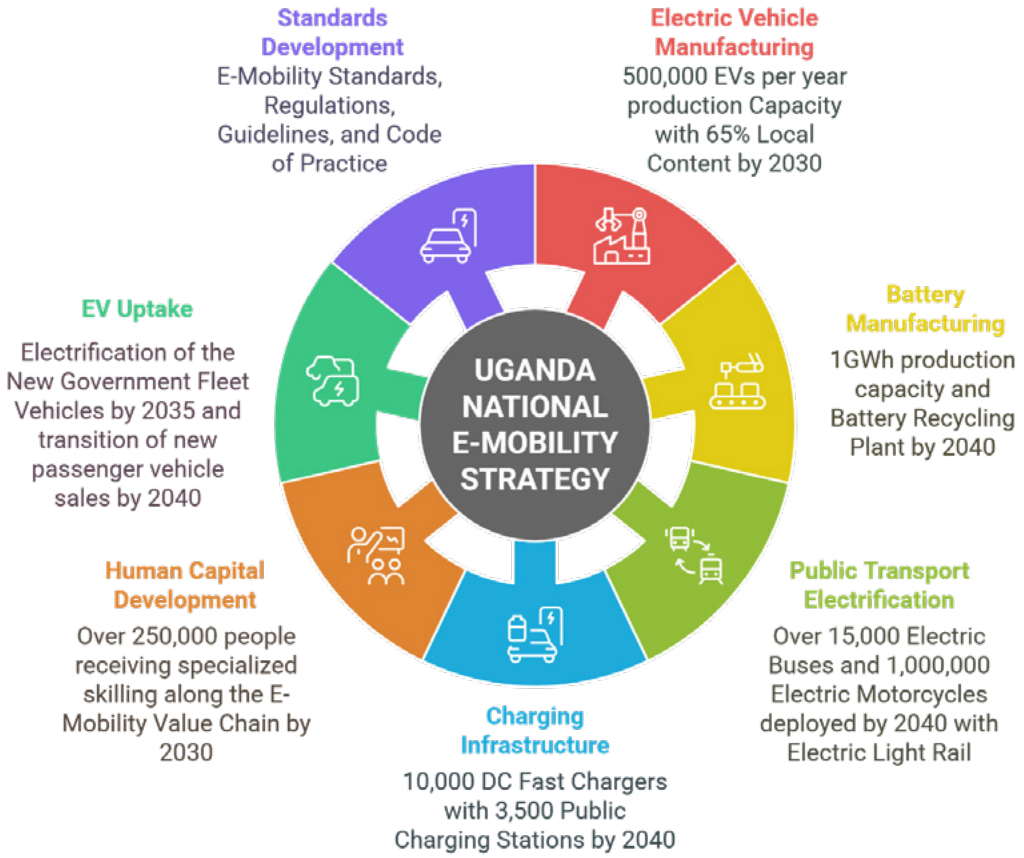


Figure 2: National E-Mobility Strategy Priority Areas

This E-Mobility Outlook Report has been structured to provide a status update on these key priorities in relation to the set targets.

The Kayoola EVS at the Kiira Vehicle Plant Production Line

2

Electric Vehicle Manufacturing

Uganda aims at building the capacity of local manufacturing of Electric Vehicles with associated Parts, Components and Systems to at least 500,000 Electric Vehicles per year with 65% local content by 2030. Uganda's combined production capacity of Electric Vehicles (Electric Buses and Electric Motorcycles) grew from approximately 2,000 Electric Vehicle per year in 2021 to over 10,000 Electric Vehicles per year in 2024.

Uganda was assigned the World Manufacturer Identifier (WMI) by the International Society of Automotive Engineers, recognizing it as a vehicle manufacturing Country. Kiira Motors Corporation, a State Enterprise, was the first manufacturer accredited in Uganda to issue Vehicle Identification Numbers (VIN) against the country's WMI.

2.1 Electric Buses

The cumulative number of Electric Buses produced in Uganda in 2024 was twenty-seven (27) since production commenced in 2020, with twenty-three (23) of these units produced in 2024. These were all Kayoola Electric Buses by Kiira Motors Corporation (KMC) produced in partnership with Luwero Industries Ltd, Nakasongola. KMC established the Kiira Vehicle Plant in Jinja with a production capacity of 2,500 vehicles per year and was scheduled to commence mass production in March 2025. The Kiira Vehicle Plant is the biggest, most competent and most capable bus manufacturing facility on the African continent.

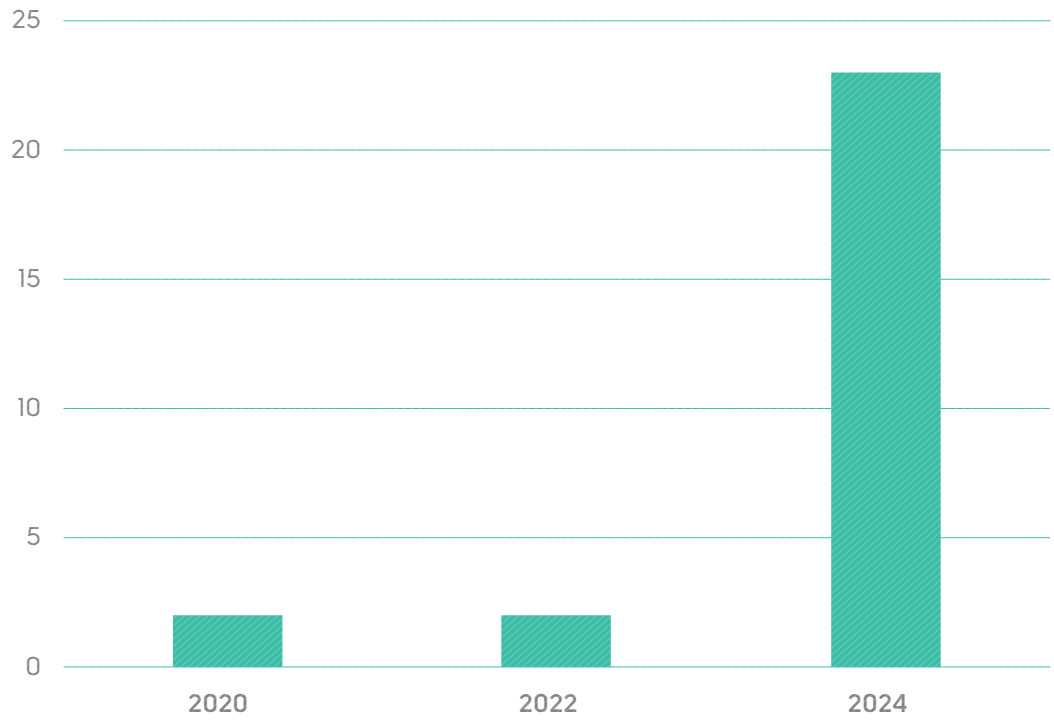


Figure 3: Annual Production Volume of Electric Buses

The Kiira Vehicle Plant, Jinja

Production of the Zembo Electric Motorcycle

2.2 Electric Motorcycles

The number of Electric Motorcycles produced in Uganda per year grew from thirteen (13) in 2019 when production commenced to 2,795 in 2024, specifically growing by 139% between 2023 and 2024. The cumulative Electric Motorcycles that have been produced since 2019 are 4,254 from key players that include Gogo Electric, Zembo, Spiro and Redvers.

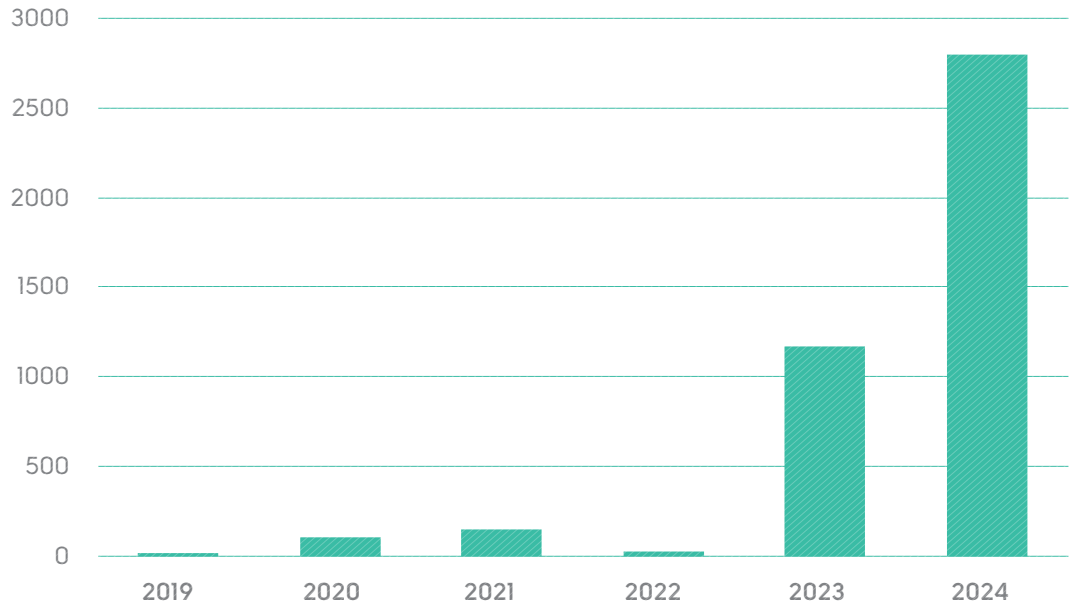


Figure 4: Annual Production Volume of Electric Motorcycles

2.3 Electric Bicycles

Electric Bicycle production in Uganda started in 2023 with 25 units by Karaa growing over 17-fold to 440 units produced in 2024 by Karaa, eBee and Harakka.

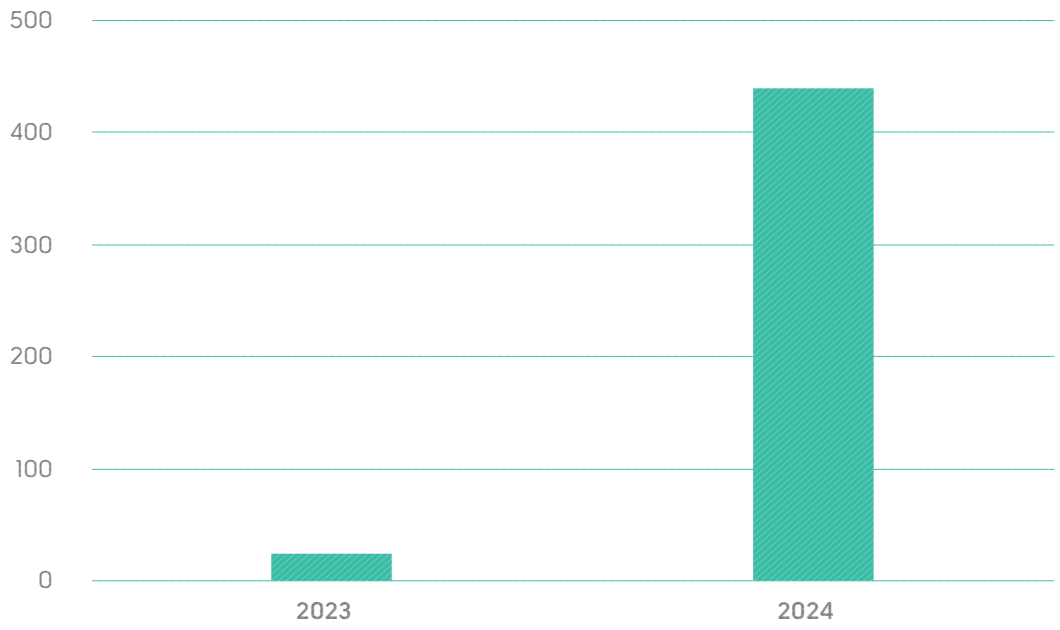


Figure 5: Annual Production Volume of Electric Bicycles

2.4 Local Content

The Local Content for locally produced Electric Vehicles stood at 21% for Electric Buses and up to 40% for Electric Motorcycles in 2024. The country had built capacity to produce Lithium-Ion Battery Packs, Auxiliary Batteries, Tyres & Tubes, Oil & Fuel Filters, Air Cleaners, Fasteners, Wipers, Side Mirrors, Electronics, Wiring Harnesses, Lubricants and Automotive Paints with these mainly serving the after-market.

Production of the Battery Pack for the Zembo Motorcycle

3

Battery Manufacturing

The localization of the EV Battery and Battery Energy Storage Systems presents an opportunity for significant value addition in the E-Mobility Value Chain. The National E-Mobility Strategy targets a fully integrated domestic battery manufacturing and recycling value chain producing over 1GWh of batteries annually by 2040.

Uganda had a combined installed production capacity of 0.12GWh of Lithium-Ion Battery Packs in 2024 by key players including Gogo Electric, Soleil Power and Zembo, mostly serving the Electric Motorcycle segment and other Battery Energy Storage Systems. Annual production of battery packs for E-Mobility grew from 0.14MWh in 2019 to over 25.89MWh in 2024, with a 167% growth from 2023 to 2024.

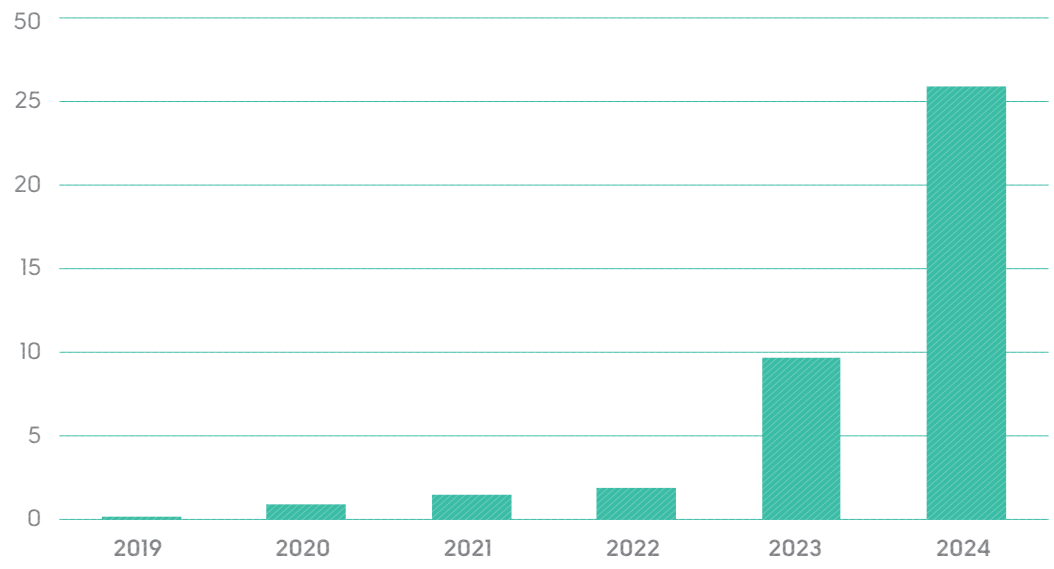


Figure 6: Annual Production of Battery Packs for E-Mobility (MWh)

The Kayoola EVS deployed by E-Bus Xpress

4

Public Transport Electrification

The National E-Mobility Strategy highlights that the adoption of an Electric Public Transport System utilizing high-capacity Electric Buses and Electric Trains complemented by Electric Motorcycles for first and last mile transit will go a long way in addressing the challenges of congestion and poor air quality in urban centers in the country. It targets deployment of at least 15,000 electric buses for mass transit and full electrification of motorcycles in Uganda supported by Electric LIght Rail by 2040.

4.1 Electric Bus Mass Transit System

E-Bus Xpress, Uganda's first Electric Bus Mass Transit service provider, launched in November 2024 operating seven Kayoola EVS Electric Buses from Kiira Motors Corporation on three routes: Jinja-Iganga, Jinja-Mutai and Jinja-Mbiko. The pilot of the service is fully funded by the Government of Uganda through the Science, Technology and Innovation Secretariat and preparations are underway to scale operations to other cities in Uganda.

FreedomEV, an E-Mobility start-up, launched electric commuter vans in Kampala offering a sustainable alternative to the existing 14-seater Internal Combustion Engine (ICE) commuter vans. The company was operating a fleet of two vans with a hub at the Bwaise Transit Terminal.

Commuters aboard the Kayoola EVS Bus

4.2 Electric Rail

His Excellency Yoweri Kaguta Museveni, President of the Republic of Uganda on 21st November 2024 launched the construction of the 272-kilometre Electric Standard Gauge Railway (SGR) from Malaba on the Kenyan border to Kampala. The SGR project that will utilize Electric Trains was established to develop a modern, integrated, and efficient railway transport system to address both freight and sustainable passenger transportation needs of Uganda.

4.3 Electric First and Last Mile

Providers of Electric Motorcycles including Gogo Electric, Zembo, Spiro, GreenHub and Redvers are primarily serving the Electric Motorcycle Taxi (Boda Boda) segment with operations in Central, Eastern and Western Uganda.

SafeBoda, a Ugandan ride-hailing platform, launched the Electric Boda Boda Tier in April 2024 where users directly order for an Electric Motorcycle Taxi (Boda Boda) for their first and last mile travel needs within Kampala. At the end of 2024, the platform had enrolled 125 Electric Boda Bodas.

The eBee Electric Bicycle used for deliveries in Kampala

Charging Station set up by E-Bus Xpress in Iganga

5

Charging Infrastructure

The successful implementation of the National E-Mobility Strategy is contingent upon the establishment of a sufficient, robust, convenient, and interoperable network of charging infrastructure. The Strategy targets establishment of over 10,000 Fast Chargers with 3,500 Public Charging Stations by 2040.

5.1 Charging Stations

Uganda had over 30 DC Fast Chargers installed in Kampala, Jinja, Iganga and Nakasongola in 2024 operated by Kiira Motors Corporation, Ministry of Energy and Mineral Development, TotalEnergies, City Oil, the Judiciary, among others. The Ministry of Energy and Mineral Development set up Uganda's first public charging station at Amber House, Kampala.

Figure 7: Distribution of Charging Stations with DC Fast Charging

Charging Station established by TotalEnergies in Kampala

Spiro Battery Swapping Station in Kampala

5.2 Swapping Stations

The number of Swapping Stations serving Electric Motorcycles increased from 3 in 2019 to 134 in 2024. These are mostly within the Greater Kampala Metropolitan Area, spreading to Mbarara in the west, Bugiri in the east and Nakasongola in the north operated by Gogo Electric, Spiro and Zembo.

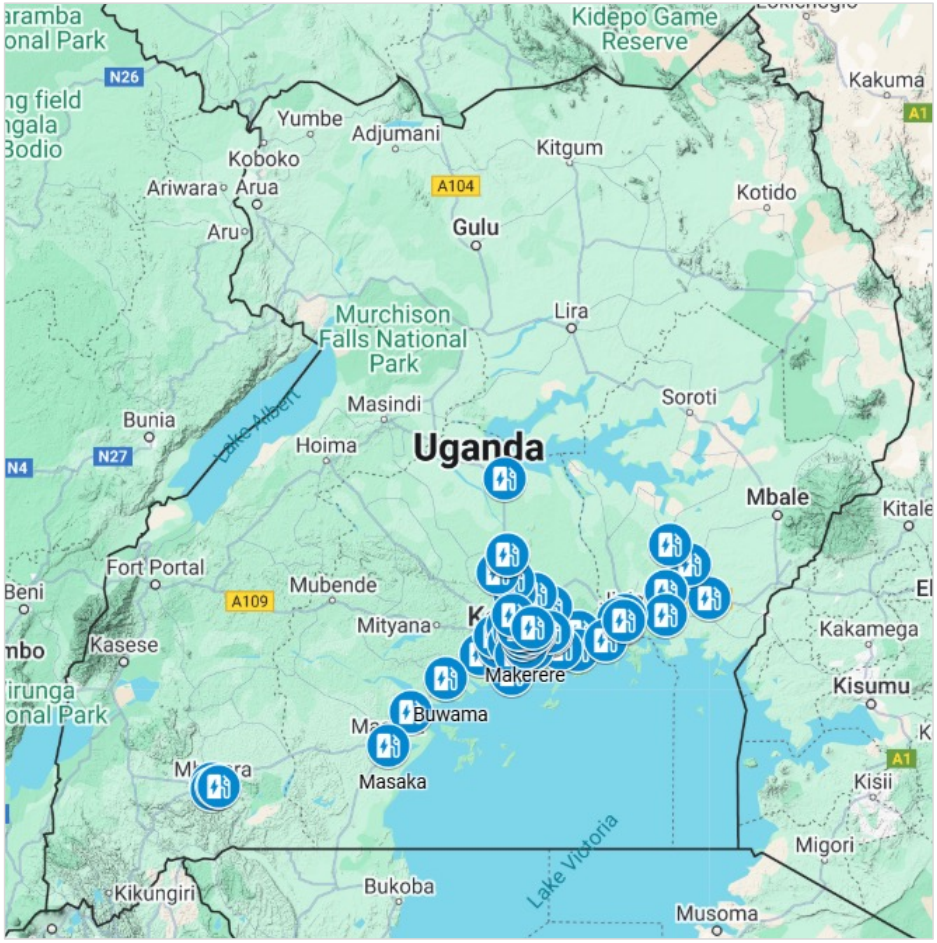


Figure 8: Distribution of Swapping Stations

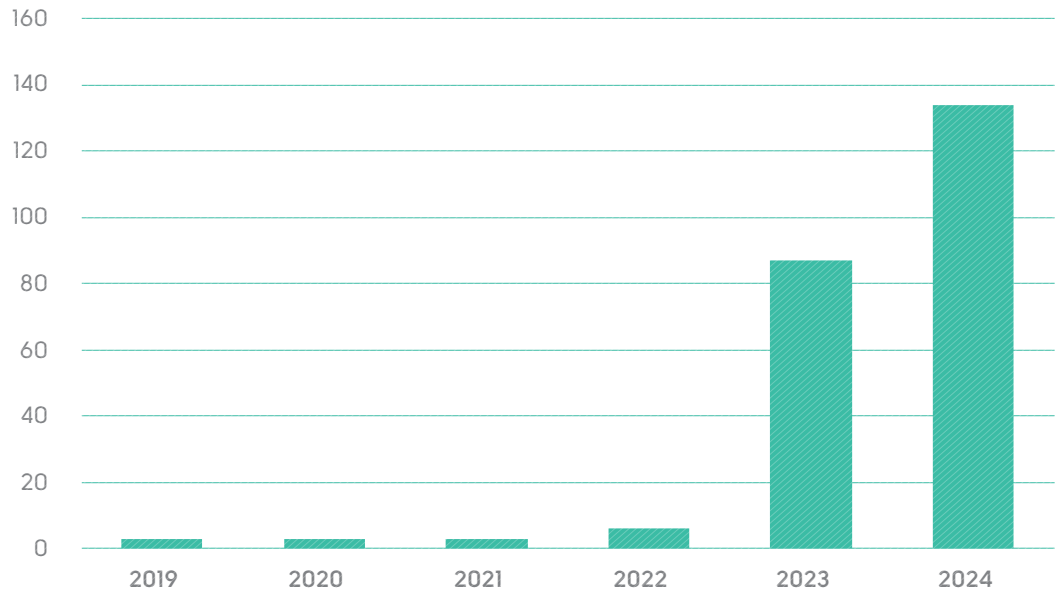


Figure 9: Cumulative Number of Swapping Stations

Zembo Swapping Station in Kampala

Public Charging Station established by the Ministry of Energy and Mineral Development in Kampala

6

Electric Vehicle Uptake

Uganda's Full Electric and Hybrid Electric Vehicle Stock (excluding Electric Two- and Three-Wheelers) grew from 2 units in 2019 to 1,127 units in 2024 with 88% of these vehicles registered in 2024. 8% of these vehicles were Fully Electric Vehicles (FEV), 2% were Plug-in Hybrid Electric Vehicles (PHEV) while 90% were Hybrid Electric Vehicles (HEV). SUVs and Hatchbacks constituted the biggest share of the Electric Vehicle Stock across all categories.

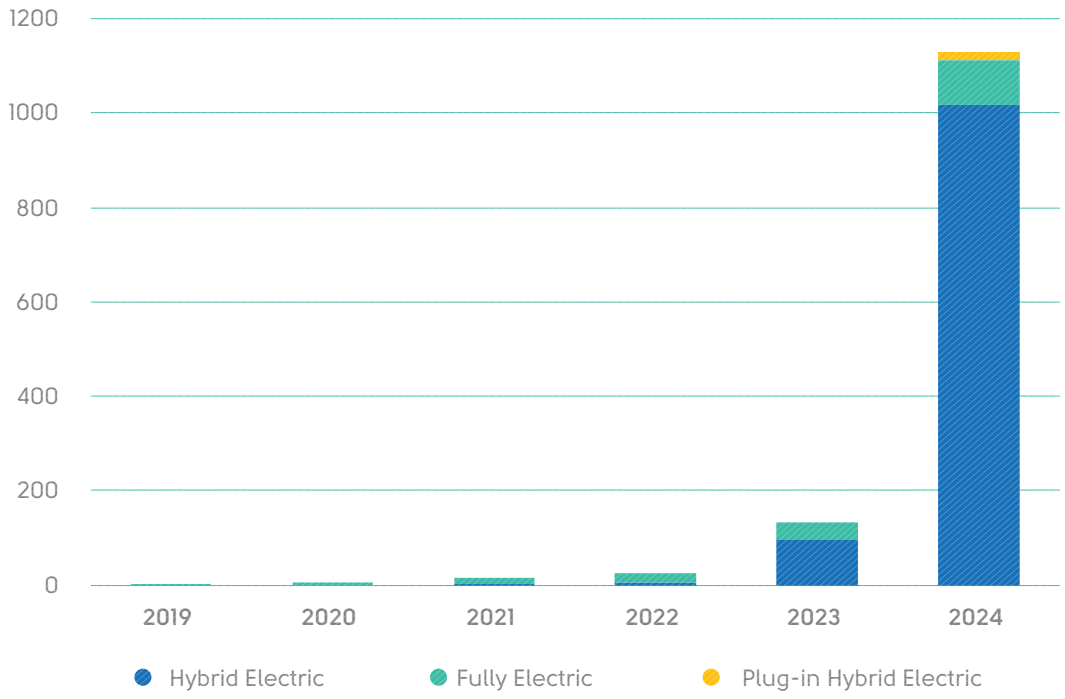


Figure 10: Electric Vehicle Stock

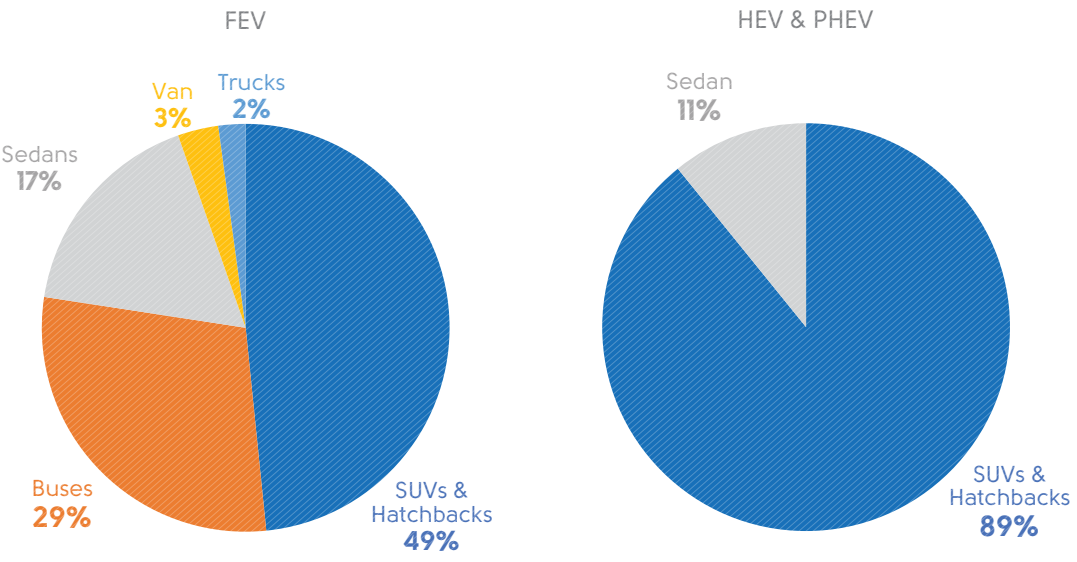


Figure 11: Composition of Electric Vehicle Stock by Vehicle Body Type

The Electric Two- and Three-Wheeler Stock starting 2019 grew from 172 units to 4,863 units in 2024. 98% of these are Two-Wheelers while 2% are Three-Wheelers.

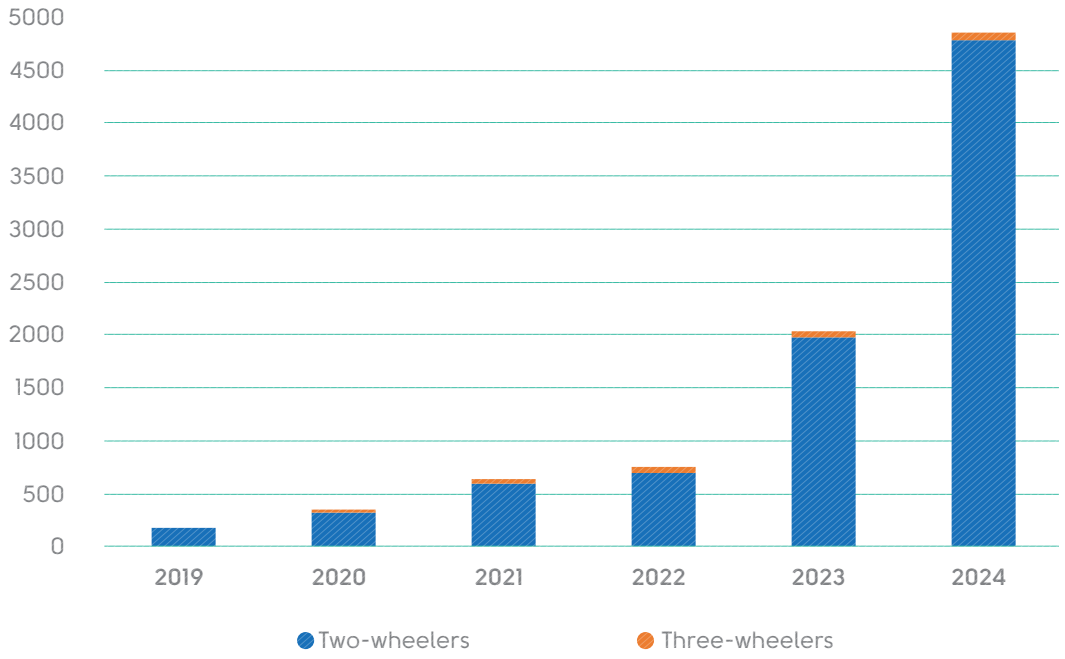
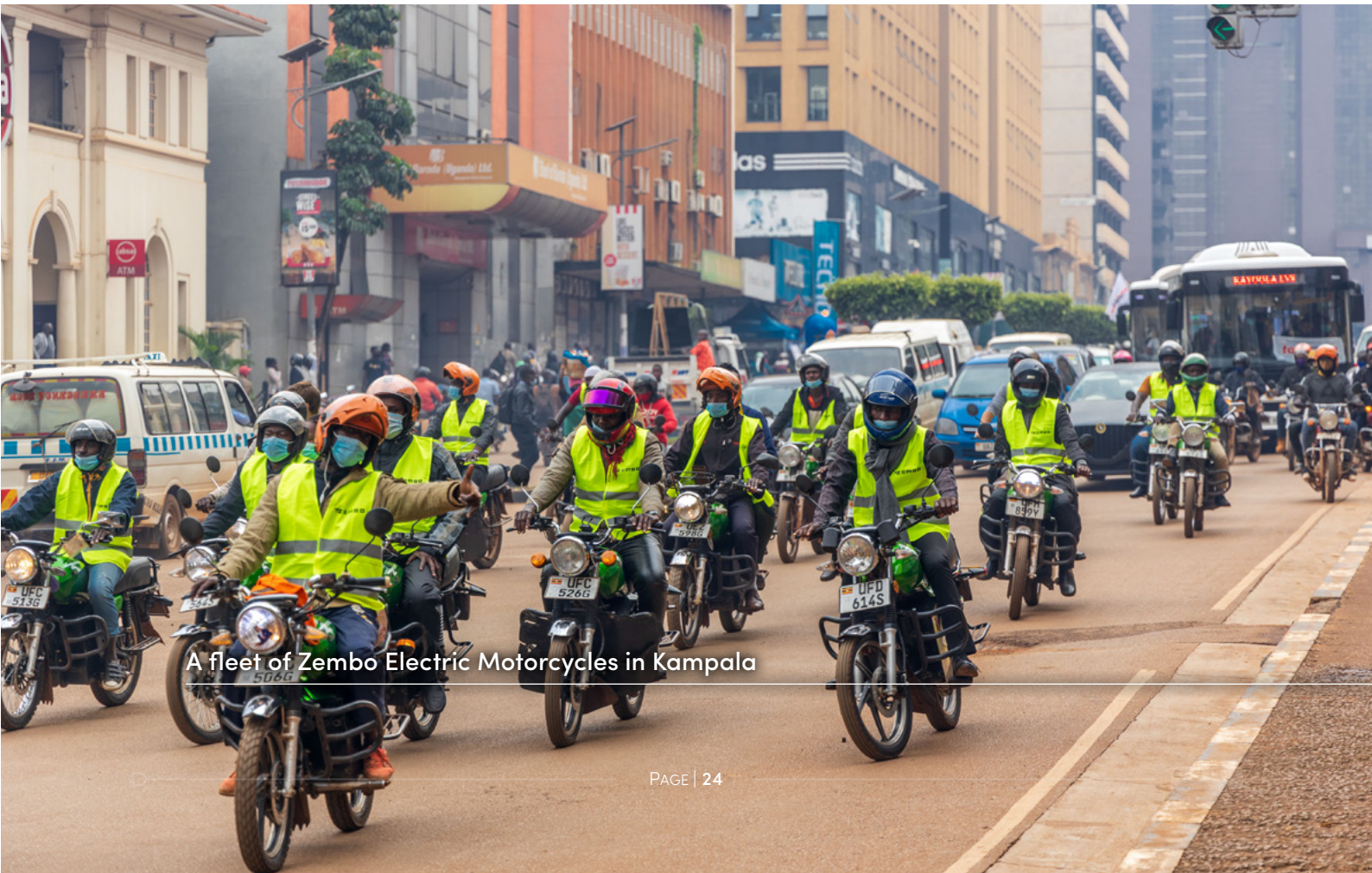


Figure 12: Electric Two- and Three-Wheeler Stock since 2019



A fleet of Zembo Electric Motorcycles in Kampala

A fleet of Kayoola EVS Buses deployed by E-Bus Xpress

7

Impact

7.1 Investment Raised

Over USD 160 Million was invested in Twelve (12) companies in the E-Mobility Ecosystem for the period 2018-2024 in the areas of Research & Development, Manufacturing and Charging Infrastructure with 70% of it from Government of Uganda. There is total investment commitment from the Private Sector of USD 800 Million over the next five (5) years.

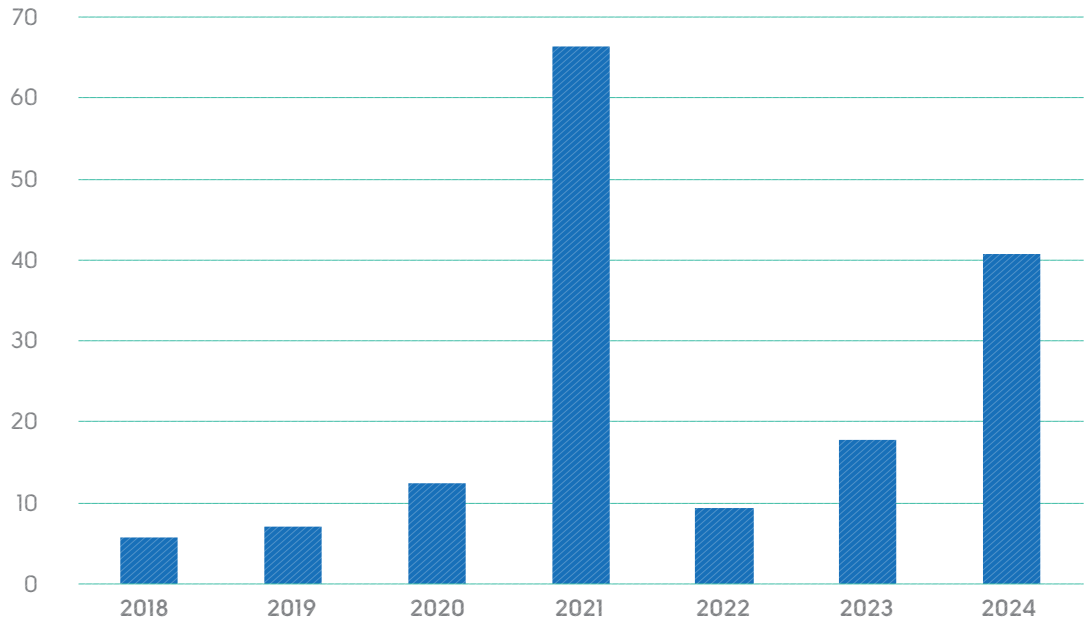


Figure 13: Investment Raised per Year (Million USD)

7.2 Revenues Generated

Nine (9) Key E-Mobility Players registered consistent year-over-year growth of their total annual revenues from approximately USD 113,000 in 2019 to over USD 5 Million in 2024.

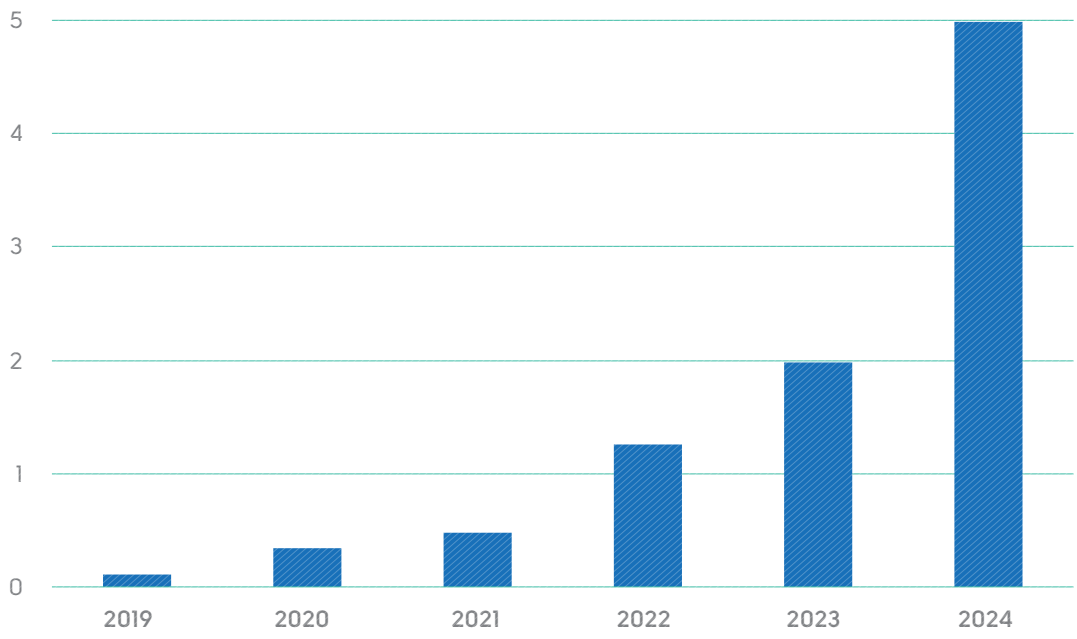


Figure 14: Revenue Generated per Year by Key E-Mobility Players (Million USD)

7.3 Emissions Avoided

Four E-Mobility Players reported to have avoided over 270,000 Metric Tonnes of CO_2eq for the period 2022-2024 from the deployment of their products that include Electric Buses and Electric Motorcycles.

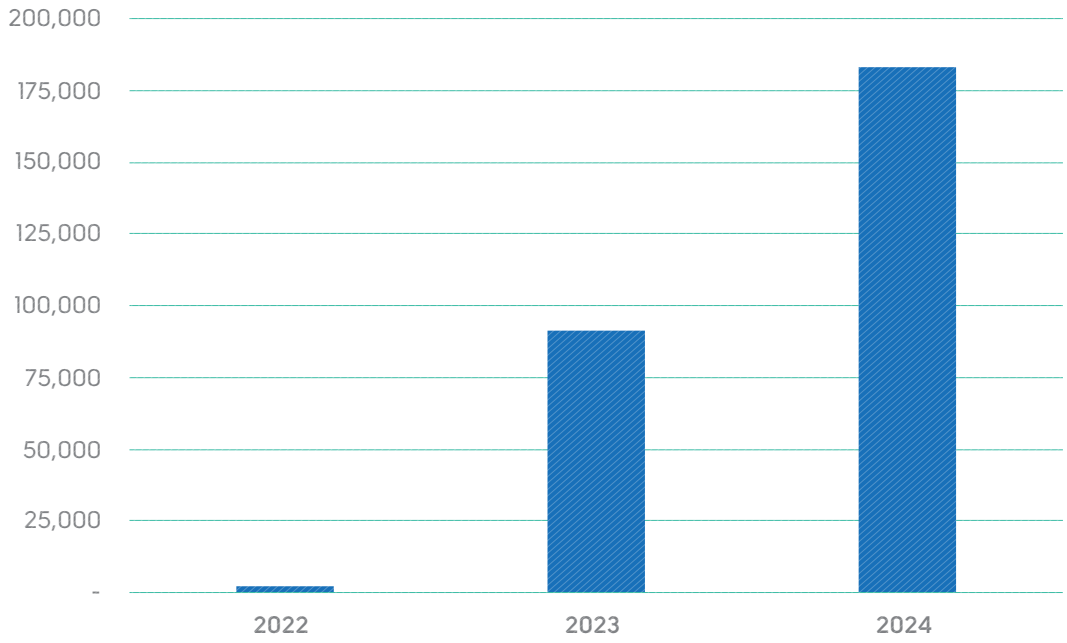


Figure 15: Annual Emissions Avoided (Metric Tonnes CO_2eq)

Meeting of E-Mobility Players with H.E. the President of Uganda

8

Policy Measures

Uganda's interventions towards the promotion of E-Mobility are guided by the Energy Policy for Uganda 2023 and the National E-Mobility Strategy 2023. The Government of Uganda lays out strategies in the Energy Policy for the promotion of clean mobility and energy efficiency in the transport sector and for the facilitation of related infrastructure. The E-Mobility Strategy highlights the key targets along the identified priority areas including a schedule of fiscal and non-fiscal incentives that are to be put in place to facilitate the transition to E-Mobility.

Government of Uganda in 2024 had put in place the following fiscal incentives to promote the adoption of E-Mobility in line with the National E-Mobility Strategy priorities:

(i) Ten-Year Income Tax Exemption for manufacturers of Electric Vehicles, electric batteries or Electric Vehicle charging equipment or fabricators of the frame and body of an Electric Vehicle.

(ii) Value Added Tax Exemption for the supply of Electric Vehicles locally manufactured or supply of frame and body of Electric Vehicles locally fabricated.

(iii) Value Added Tax Exemption for the supply of Electric Vehicle charging equipment or supply of charging services of an Electric Vehicle.

(iv) Excise Duty Exemption for construction materials of a manufacturer of an Electric Vehicle, electric battery, electric charging equipment, or a fabricator of the frame and body of an Electric Vehicle, who meets specific strategic investment criteria.

(v) Stamp Duty Exemption on specific instruments executed by a manufacturer of Electric Vehicles, electric batteries, Electric Vehicle charging equipment, or fabrication of the frame and body of Electric Vehicles, who meets specific strategic investment criteria.

(vi) 0% Import Duty for production materials for Electric Vehicles and 10% Import Duty for production materials for Electric Motorcycles.

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