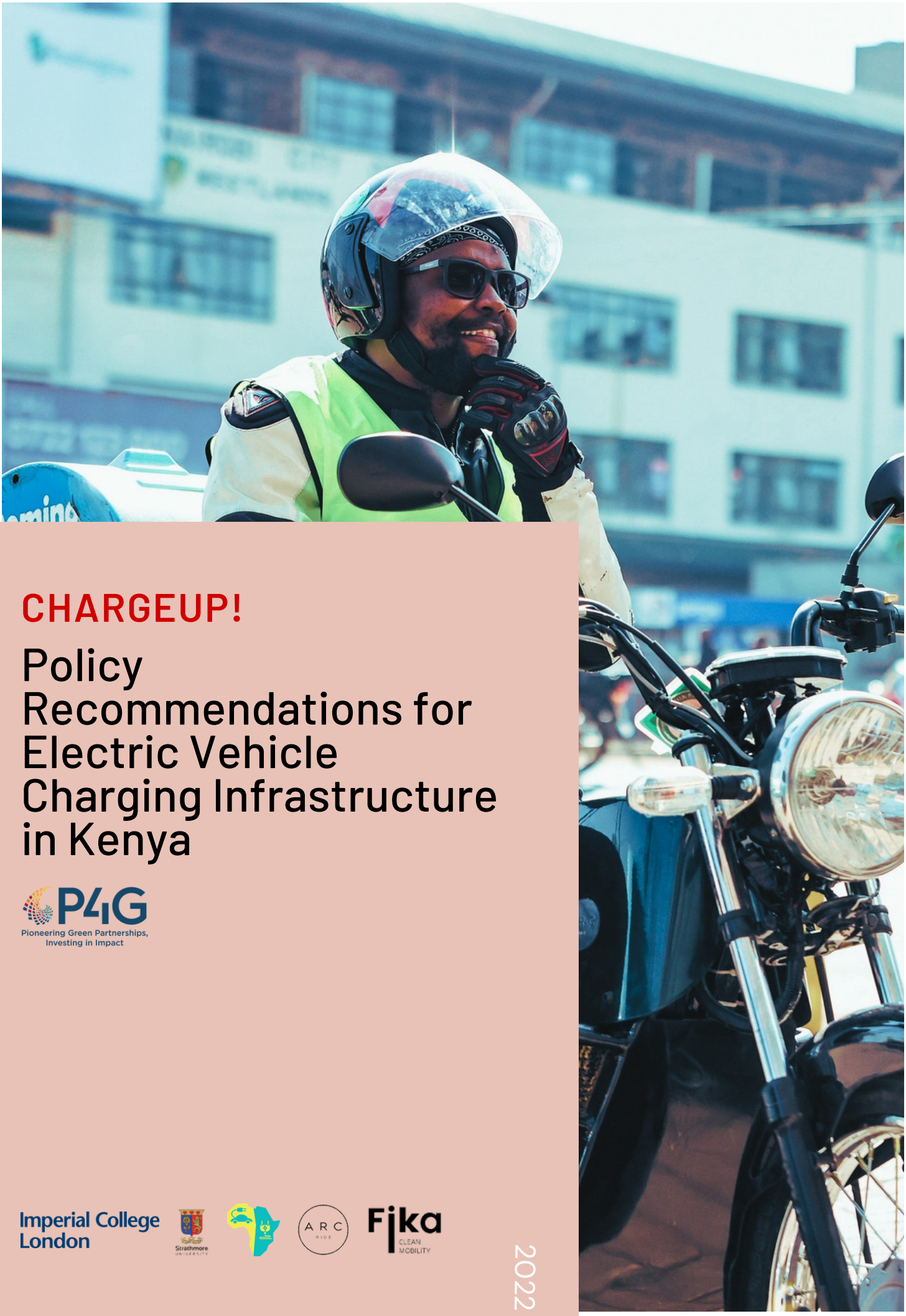


CHARGEUP!

Policy Recommendations for Electric Vehicle Charging Infrastructure in Kenya

P4G
Pioneering Green Partnerships, Investing in Impact

Imperial College London

Strathmore University

ARC Ride

Fika Clean Mobility

2022

CONTENTS

About ChargeUp!

The ChargeUp! Project is funded by P4G (Partnering for Green Growth and the Global Goals 2030) to test the commercial viability of a Battery as a Service (BaaS) model by establishing a network of charging stations in Nairobi, Kenya, which will charge a flat battery swap fee for electric two- and three-wheelers. The project partners include Energy 4 Impact (E4I) as the project coordinator, Strathmore University and Imperial College London as the academic partners, while ARC Ride Global (ARC Ride) and Fika Mobility are the commercial partners.

In this partnership, electric bike drivers can conveniently swap out their batteries quickly and affordably, reducing operational costs and concerns about the battery not lasting long enough to complete their activities. This model will enable an inclusive ecosystem that creates long-term green jobs for charging station mechanics and electric vehicle (EV) drivers. Expanded battery swapping infrastructure can help businesses and start-ups join the E-mobility transition.

During the partnership funding period, ChargeUp! plans to establish a network of 45 operational battery charging and swapping stations in Nairobi and complete a baseline assessment for the commercial viability of a BaaS model. Ultimately, the partnership aims to develop an openly accessible and replicable master plan for e-bike adoption by cities across Africa.


UnJour Nouveau
Africa New Day
SUPER
JURAT
PLUS POIN

EXECUTIVE SUMMARY

The Republic of Kenya remains the transport hub of Eastern and Central Africa, leading to significant economic growth for the country and the surrounding regions. However, it should be noted that the transport sector still relies heavily on internal combustion engines powered by fossil fuels, with domestic transport contributing 12.3MtCO2e as of 2019. The Government is trying to address this emissions growth through various initiatives. Examples are the adoption of the National Automotive Policy 2022, the National Energy Efficiency and Conservation Strategy 2020, and the development of the Integrated National Transport Policy 2019, all of which have carefully considered promoting pathways toward safe and sustainable transport.

The adoption of electric mobility is considered a pathway to reducing emissions from the transport sector. As part of its mitigation plans, the Kenyan Government seeks to have 5% of Kenya's vehicle stock electrified by 2025 while also requiring that owners of commercial buildings ensure that at least 5% of the parking spaces provided in their facilities are dedicated to charging electric vehicles. Despite these measures by the Government, the sector still faces several challenges, such as an unfavourable tax structure hence a call for policy recommendations for easy adoption and scaling up of the industry.

This document provides policy recommendations for EV Charging Infrastructure, targeting fiscal and non-fiscal incentives required in the short to medium term to enhance the mass adoption of EVs in the country. The recommendations are part of the Charge Up! project, funded by P4G (Partnering for Green Growth and the Global Goals 2030), to test the commercial viability of a Battery as a Service (BaaS) model by establishing a network of charging stations in Nairobi. The recommendations are summarised in the following page

FISCAL

NON FISCAL

Adopt industrial tariff METHOD CI5 for designated charging and battery swapping stations

IMPLEMENTING BODIES

- Ministry of Energy
- Energy and Petroleum Regulatory Authority
- Kenya Power and Lighting Company
- Industry Associations

Waiver Import Duties, Excise Duties, and Value Added Tax (VAT) from new electric vehicles, EV batteries, charging and battery swapping equipment, and spares for not less than five years

IMPLEMENTING BODIES

- National Treasury
- Kenya Revenue Authority (KRA)
- Industry Associations

Develop an incentives program for the installation of charging infrastructure that would help the country achieve its target of 5% vehicle electrification by 2025

IMPLEMENTING BODIES

- State Department for Transport and Infrastructure
- National Treasury
- Kenya Revenue Authority (KRA)
- Industry Associations

- **Establishing Low Emission Zones and Parking/Charging Areas**
- **Provision for EV charging stations in city planning rules and building codes**

IMPLEMENTING BODIES

- ·Nairobi Metropolitan Services (NMS)
- ·Nairobi Metropolitan Area Transport Authority (NAMATA)
- ·National Construction Authority (NCA)

Creation of Local Demand Led by Government

IMPLEMENTING BODIES

- ·Central Government MDAs
- ·County governments

Develop Policies to Promote the Interoperability of Infrastructure and Operations services

IMPLEMENTING BODIES

- National Treasury
- Industry Associations

Overview of the Automotive and Motorcycle Industry in Kenya

The automotive industry in Kenya has evolved to cover five main areas: motor vehicle assembly, motorcycle assembly, trailer assembly, bus body building, and part manufacturing. The motor vehicle industry in Kenya is heavily dominated by used vehicles (88% as of 2019 from the KAM Automotive Sector Profile 2020[1]. Suffice it to say, through the Big 4 Agenda, the Kenya Government has manufacturing as one of its pillars and has put in measures such as preferential procurement for locally assembled vehicles to encourage local industry.

The motorcycle segment is the largest and fastest-growing segment in the country's automotive sector by volume. From the 2022 Kenya National Bureau of Statistics (KNBS) Economic Survey, there were 285,203 new motorcycles out of a total number of registered 399,052 road vehicles representing 71% of the registered numbers[2].

The country has grown from less than five motorcycle assemblers in 2013 to over twenty-seven by 2021, a clear sign of the Government's strong will to promote manufacturing. Recently, the Government set a condition for local manufacturers to source at least 30% of the vehicle's value for their organisations to qualify for VAT exemption[3]. This move aims to increase the number of vehicle and cycle parts manufactured locally hence promoting the manufacturing sector in the country.

Figure 1 below shows the number of registered vehicles and motorcycles between 2017 and 2021.

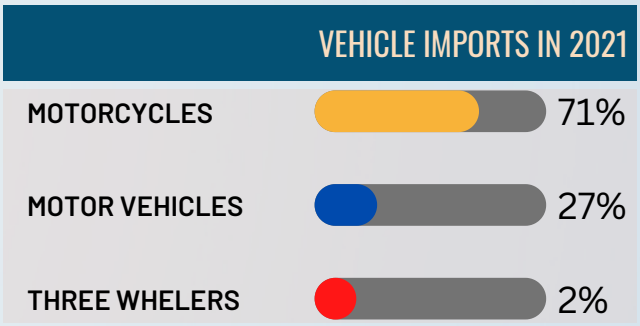
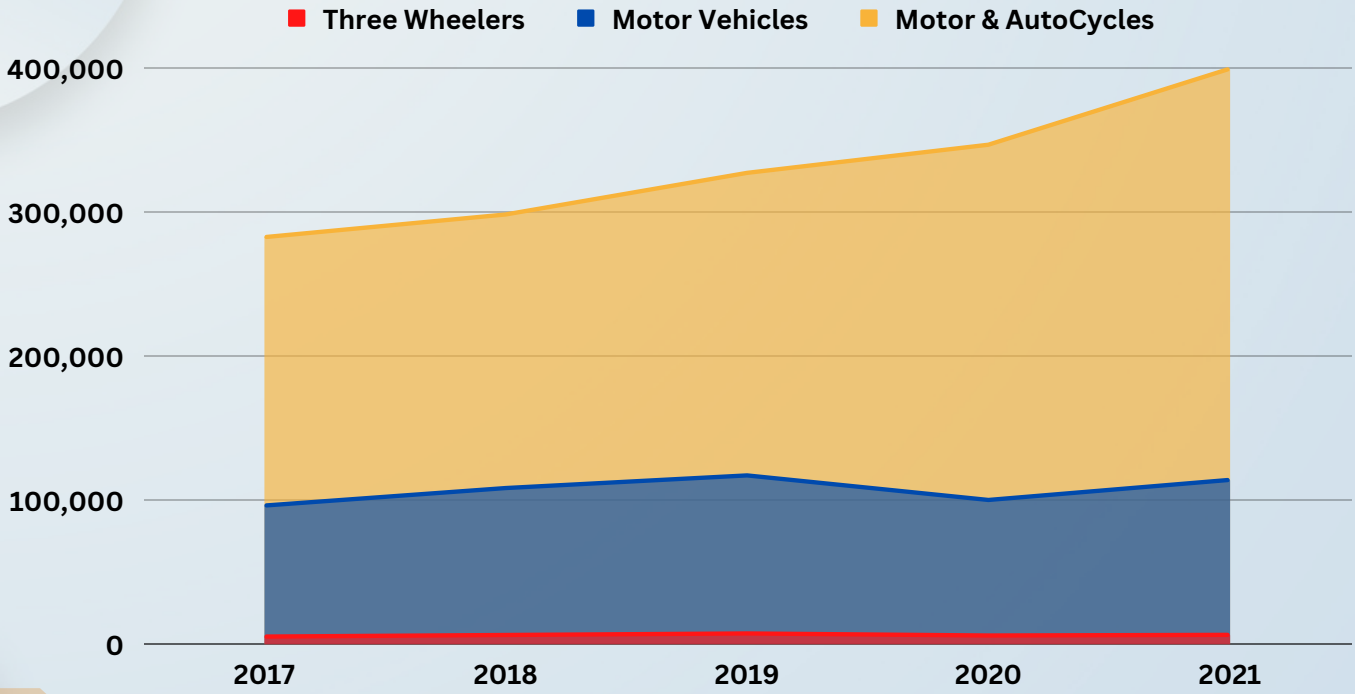


Figure 1: New Registration of Road Motor Vehicles and Motorcycles, 2017-2021



Background of Electric Mobility in Kenya

Increasing global concern and growing evidence of climate change's negative impacts have driven governments worldwide to adopt policy measures that facilitate the adoption of low-carbon pathways in their economic development. Through its mitigation plans, Kenya, through the National Energy Efficiency and Conservation Strategy 2020, seeks to have 5% of Kenya's vehicle stock electrified by 2025[4].

The National Climate Change Action Plan 2018–2022 captures the importance of E-mobility capacity development through the construction of charging infrastructure[5]. The draft National Building Code 2022 has commendably facilitated the increased adoption of electric vehicles in Kenya[6]. The code proposes that owners of commercial buildings are to ensure that at least 5% of the parking spaces provided in the building are dedicated to charging electric vehicles under Regulation 38 (1).

The newly installed Kenya Kwanza Government had E-mobility as part of their campaign manifesto. Some of the provisions indicated in the Bottom-Up Economic Transformation Agenda 2022 – 2027 include the roll-out of electric vehicle charging infrastructure in urban areas and along highways, incentives for public service and commercial transport vehicles to go electric, as well as utilisation of a portion of the Hustler Fund to develop the electric vehicle and motorcycle assembly industry

To bolster more investments in charging infrastructure, which stimulates the acquisition of electric vehicles, the following are crucial policy recommendations that the Government of Kenya can implement as part of the formulation of the National E-mobility Policy currently being prepared by the State Department of Transport and Infrastructure.

Industrial Electricity Tariff for Designated Charging Stations

Kenya's national grid has an installed capacity of 2,984 MW as of 2019, more than 85% of which is from renewable sources[7]. During off-peak hours, power demand on the grid drops because of reduced human activity leaving renewable energy resources like geothermal power idle. Kenya Power assured electric vehicle operators that the utility would meet their energy demands. It indicated that they can charge over 5000 buses and two million bikes during off-peak [8].

A competitive electricity tariff has the effect of adding demand to both peak and off-peak grid usage. Similar to what the Rwanda Government has implemented in applying an industrial tariff to designated charging stations[9], the Kenya Government can implement the same measure for designated charging and battery swapping stations.

This industrial tariff is proposed to be METHOD CI5[10] with an energy charge of Ksh. 10.10 per unit of energy consumed during peak hours and a subsequent charge of Ksh. 5.05 per unit of energy consumed during off-peak hours.

To achieve this proposition, industry and other stakeholders need to develop a strong proposal justifying the need for a tariff, the specific rates, and the potential benefits it brings to the public and private sectors. This industry proposal gets submitted to the Energy and Petroleum Regulatory Authority (EPRA) for consultation and a decision.

The benefit of a competitive tariff includes the growth of electricity demand for the grid and off-grid providers, savings of forex exchange from abated fuel imports, reduced emissions from the usage of fossil fuels for transport, and a new taxable base of products and services that would increase Government revenue.

SUMMARY

Industrial Electricity Tariff for Designated Charging Stations

STEPS TAKEN

STEP 01

CHARGING INFRASTRUCTURE WORKING GROUP

Strathmore University, in collaboration with AEMDA, held a working group meeting on charging infrastructure on April 20 2022, which brought stakeholders from private, and public sectors and development partners. The technical working group discussions guided the drafting of these policy recommendations.

STEP 02

ELECTRICITY TARIFF INDUSTRY PROPOSAL

An industry proposal to Energy and Petroleum Regulatory Authority (EPRA) on electricity tariffs is being prepared by AEMDA.

RECOMMENDATIONS

STEP 01

SUBMISSION OF INDUSTRY PROPOSALS TO EPRA

Associations, e.g., AEMDA, to prepare an industry proposal, validated by industry stakeholders and submitted to the EPRA technical review committee

STEP 02

STAKEHOLDER CONSULTATIONS

- EPRA to review and give feedback on the submission
- Joint consultations between EPRA, AEMDA, and industry stakeholders to decide on the tariff proposal within 6 months from the submission date

BODIES INVOLVED IN IMPLEMENTATION	CASE STUDIES AND REFERENCES
• Ministry of Energy & Petroleum • Energy and Petroleum Regulatory Authority (EPRA) • Kenya Power and Lighting Company • Industry Associations	• Republic of Rwanda Ministry of Infrastructure Strategic Paper on Electric Mobility Adaptation in Rwanda (April 2021) • Strathmore University and AEMDA report from the working group on charging infrastructure

POLICY RECOMMENDATIONS

Under the Finance Act 2021, former President Uhuru Kenyatta reinstated critical VAT exemptions on renewable energy products, including solar and wind generation equipment and clean cooking solutions[11]. These measures have been implemented to accelerate the Government's effort to ensure that 100% of all Kenyans have access to electricity and clean cooking fuels. As a result, Kenya reached 71% electricity access in 2020 compared to 19% just ten years prior.

In 2007, and for eight consecutive years, the Kenya Government waived import duty, excise duty, and VAT on motorcycles under 250cc, which saw massive adoption of motorcycles, which have become a billion-dollar industry and the largest employer of some 1.4 million Kenyan youth in 2022, contributing over Ksh. 5B in direct taxes to the economy[12].

Borrowing from this experience, the Government of Kenya should waive import duties, excise duties, and Value Added Tax (VAT) from new electric vehicles across two, three, and four-wheel categories, including commercial and public transport vehicles.
Tax exemptions should also be extended to electric mobility batteries (Lithium-ion batteries[13] that attract 25% Import duty of the Customs Value, 16% VAT, 3.5% Import Declaration Fee (IDF), and 2% Railway Development Levy (RDL), charging and battery swapping equipment and spares for not less than five years.

Tax incentives for importing new electric vehicles, electric vehicle batteries, charging and battery swapping equipment, and spares

This move allows for the propagation of electric vehicle products and services until a critical mass for further regulation is reached. It is also essential for the Government, through its agencies, to put in place measures to inspect and verify minimum standards for the safety and quality of imported or locally-made electric vehicles, charging infrastructure, and related spare parts.
To access this provision, industry associations like AEMDA and KAM need to collaborate and prepare budget proposals in line with the Kenya Government's financial cycle. The cycle for the national Government is broken down into the following steps borrowed from the International Budget Partnership;
In addition, the E-mobility sector should create public awareness and understanding of EVs as a barrier in Kenya since EV adoption necessitates a shift in consumer behaviour; thus, favourable consumer perception is critical for widespread adoption.
The Government should also consider wavering land rates for potential EV charge station sites in the country for smooth transition and adoption.

KENYA BUDGET CYCLE PROCESS

01

AUGUST 20

- This is the first significant event in the budget calendar. The Cabinet Secretary and the County Executive Member for Finance at the national and county levels, respectively, must issue a circular to all government departments advising them on how to prepare their
- budget requests for the year. The circular should also contain the budget formulation calendar for the year, including opportunities for public participation

02

FEB 21

- After cabinet approval, the national and county Budget Review and Outlook Papers must be tabled in the national and county assemblies.

03

JAN 1

- The latest date by which the Commission on Revenue Allocation submits its recommendations for how much should be distributed to each level of Government (national and county) through the annual division of revenue process.
- These recommendations then inform the Division of Revenue and County Allocation of Revenue Bills tabled annually in Parliament by February 15.

04

FEB 15/28

- After the BROP provides the provisional ceilings for each sector, both levels of Government are expected to organize sector hearings. These hearings allow sectors to discuss and decide on their priorities for the coming year and to bid for additional resources from the budget. The public is expected to participate in these discussions and give its views on which sectors should receive more funding and for what.
- The final decision about the total size of the budget and the distribution of funds across each sector is set in the national Budget Policy Statement (tabled in the National Assembly by February 15, to be approved within two weeks)

05

APRIL 30

- The national and county budget estimates are tabled in the respective assemblies on this date. This is the detailed budget at the program level (below the ministries).
- At this stage, the total budget and sector distribution should not be changed, but funds may be moved around between programs

06

MAY

- The period when the national and county assembly budget committees begin to hold public hearings on the budget estimates.
- This exercise is a legal requirement.

07

JUNE 30

- End of the financial year. By this date, the national and county Appropriation Bills should be approved by assemblies at both levels. These bills authorize the Government to spend against the budget from July 1.

SUMMARY

Tax incentives for importing new electric vehicles, electric vehicle batteries, charging and battery swapping equipment, and spares

STEPS TAKEN

STEP 01

EXCISE DUTY REDUCTION

The Finance Act 2019 reduced excise duty on 100% Battery Electric Vehicles from 20% to 10%

RECOMMENDATIONS

STEP 01

SUBMISSION OF INDUSTRY PROPOSALS TO THE NATIONAL TREASURY

- Industry associations like AEMDA, together with the Kenya Association of Manufacturers and other stakeholders, prepare a budget proposal for the National Treasury in line with the budget cycle for the following year.
- The National Budget cycle is coordinated by the Ministry of Finance and the National Treasury.

STEP 02

BUDGET REVIEW PROCESSES

- The proposals are reviewed between February and May under parliamentary review committees.
- Should the National Assembly approve the proposal, it passes to the implementation phase starting July 1.
- The National Treasury then makes provisions for the proposal through the Finance Act.

BODIES INVOLVED IN IMPLEMENTATION	CASE STUDIES AND REFERENCES
• National Treasury • Kenya Revenue Authority (KRA) • Industry Associations	• Republic of Rwanda Ministry of Infrastructure Strategic Paper on Electric Mobility Adaptation in Rwanda (April 2021) • The Kenya National Chamber of Commerce (KNCCI) submitted a Memorandum on various fiscal and non-fiscal measures for EV adoption to the national treasury.

To stimulate demand for electric vehicle services, incentives are critical for installing charging infrastructure. The Delhi EV Policy 2020 has provisions for a subsidy for installing the first 30,000 charging stations in the city[14]. The subsidy, which covers up to Rs 6,000 (Ksh.9,019.07) per charging point, is accessible through a single window system with procurement of hardware, installation, and obtaining an EV charging tariff.

The Alternative Fuel Infrastructure Tax Credit (AFITC) 2020 was implemented in the US and offered a federal tax credit worth 30% of commercial EV chargers' purchase and installation costs. The maximum credit per site is $30,000.

Subsidies for the Installation of Charging Stations

The incentives program covers multifamily buildings and hotels, commercial parking lot operators and workplaces, public areas including retail, corporate, and public fleet operators, and municipal transit agencies[15].

The Government of Kenya should develop an incentives program for installing charging infrastructure to help the country achieve its target of 5% vehicle electrification by 2025. Without an E-mobility Policy, the program must be prepared as a budget proposal for consideration in the national budgeting exercise under the Ministry of Finance and National Treasury.

The proposal needs to be developed by industry associations like AEMDA and Kenya Association of Manufacturers, indicating the value proposition for a lowered taxation of electric vehicle infrastructure products and services.

Should there be an E-mobility Policy developed by the ministry of transport, which covers the provision for incentivising charging infrastructure, then the development of regulations covering procurement and installation incentives should follow through the primary ministry together with other relevant ministries.

Not only will such a program stimulate the demand, but it also creates employment opportunities for installers and repair and maintenance personnel. An assessment by the World Bank indicates that investing in charging infrastructure is 4-7 more cost-effective for promoting electric vehicle adoption than providing consumer subsidies[16].

SUMMARY

Subsidies for the Installation of Charging Stations

STEPS TAKEN

STEP 01

E-MOBILITY POLICY DEVELOPMENT

The National E-mobility Policy for Kenya is being prepared under the State Department for Transport and Infrastructure, to be ready in 2023

RECOMMENDATIONS

STEP 01

SUBMISSION OF INDUSTRY PROPOSALS TO THE NATIONAL TREASURY

- Associations like AEMDA, together with the Kenya Association of Manufacturers and other stakeholders, prepare a budget proposal for the National Treasury in line with the budget cycle for the following year.
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STEP 02

BUDGET REVIEW PROCESSES

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BODIES INVOLVED IN IMPLEMENTATION	CASE STUDIES AND REFERENCES
• State Department for Transport and Infrastructure • National Treasury • Kenya Revenue Authority (KRA) • Industry associations	• Alternative Fuel Infrastructure Tax Credit • Delhi Electric Vehicles Policy, 2020


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airtel
USSEIN

POLICY RECOMMENDATIONS

Electric vehicle charging infrastructure requires planning, designing, construction, and commissioning processes which entail electrical and civil works. Avenues such as the National Building Code are integral to incorporating rules and guidelines for installing charging and battery swap stations. The draft National Building Code 2022 for Kenya mandates developers of commercial buildings to allocate at least 5% of their parking spaces to electric vehicles[6].

Integration of charging infrastructure regulations into city planning and building codes ensures harmony in standards and efforts toward promoting the adoption of electric vehicles.

These regulations are also important avenues for innovation and job creation.

Provision for EV charging stations in city planning rules and building code

Bodies such as the Nairobi Metropolitan Services (NMS), Nairobi Metropolitan Area Transport Authority (NAMATA), and the National Construction Authority (NCA) are bodies to be engaged in this process.

Proposals for the inclusion of EV charging stations in city planning need to be prepared by industry associations and tabled to the National Construction Authority (NCA), which updates the National Building Code. County Governments can explore the usage of public transport terminals for setting up provisions for charging infrastructure

Establishing Low Emission Zones and Parking/Charging Areas

The establishment of Low and zero-emission zones, especially in city centres, is vital in reducing emissions and incentivising owners and operators of electric vehicles. Kenya is beginning to implement Euro IV vehicle emissions standards under the National Automotive Policy. However, adding areas where these low or no-emission vehicles are allowed stimulates demand. Oslo successfully implemented zero emission zones in 2019 to encourage more use of electric cars. Norway has implemented subsidies to reduce parking and toll fees by up to 50% for electric vehicles[17].

The Ministry of Environment can incorporate data from its air quality monitoring project in collaboration with the United Nations Environment Programme and academia to advise local governments on the criteria for designated low-emission zones.

Kenya can learn from these measures by developing non-fiscal measures to encourage uptake. Local county governments are the primary stakeholders in charge of revenue collected from parking areas in their respective counties.

POLICY RECOMMENDATIONS

The previous Kenya Government under the Big 4 Agenda had manufacturing as one of its core pillars. Previous Government efforts have been towards boosting local manufacturing by prioritising procurement of locally assembled vehicles in the spirit of Buy Kenya Build Kenya[18].

The Kenya Kwanza Government also indicates a strong commitment to channeling investments into renewable energy, a crucial precursor for vehicle electrification. In November 2022, president William Ruto met with Prime Minister Rishi Sunak at the COP27. The two leaders agreed to fast-track green energy projects worth KES 500 billion across energy, agriculture, and transport in Kenya.

Creation of Local Demand Led by Government - National and County Governments

To show leadership in the transition toward electric vehicles, all Kenyan Government MDAs (Ministries, Departments, and Agencies) should commit to electrifying a portion of their fleet. It is encouraging to see some efforts by agencies such as KenGen, which has installed a charging station in Nairobi and intends to procure electric vehicles for an E-mobility study involving data collection[19]. This commitment can be cascaded to county governments to encourage the national adoption of electric vehicles. The process entails industry stakeholders lobbying the Government to uphold its Buy Kenya Build Kenya initiative and extending the initiative to cover electric vehicles.

Develop Policies to Promote the Interoperability of Infrastructure and Operations Services

Interoperability uses standard communication protocols to enable communication between systems. Users of these charging stations can use and operate different charging networks without having multiple payment cards for public station charging.

Policies that allow the interoperability of network providers promote charge point operators to select different network service providers without necessarily needing to change the providers. Open charge points protocol (OCPP), a European standard, can be vital in addressing network interoperability. The adoption of OCPP protects charge point operators' investments against obsolescence and further stimulates market competition.

Financial provisions like the Central Bank of Kenya's initiative for payment integration provide low-hanging fruit for payment across networks. Mobile money transactions have increased from 23% to 60% of gross domestic product (GDP) between 2010 and 2021.

Interoperability in the private sector happens naturally but needs to be supported by stakeholder awareness of existing solutions across the market. This awareness may come from industry sensitisation workshops, exhibitions, and other awareness activities with interoperability solution providers.

CONCLUSION

Electric vehicles are the much-needed power off-taker for locally generated renewable energy in Kenya, which stood at 87.5% of the national grid supply in 2021. Not only does this transition give the country a chance to meet its Nationally Determined Contribution (NDC) to reduce emissions by 32%, but it also provides an opportunity for job creation and innovation in transport, energy, environment, and manufacturing sectors which have a direct impact on the economic transformation at the counties and at national level.

By making provisions for the electric mobility industry to proliferate, the nation has an opportunity to accelerate its growth towards achieving its Vision 2030 goal of becoming a middle-income economy and a regional leader for products, personnel, and investments in clean transport while at the same time reducing its emissions from the transport sector.

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About SERC

Strathmore Energy Research Centre (SERC), established in 2012, is a research department within Strathmore University that conducts training, research and consultancy services projects in the energy sector. It is regarded as one of the continent's leading institutes in the sustainable energy sector. SERC's goal is to become the reference point for high-quality and evidence-based research in Africa through developing research capacity and collaboration with strategic local and international partners.

About AEMDA

The Association for Electric Mobility and Development in Africa (AEMDA) is a pan-African platform for electric mobility industry stakeholders. The organisation supports the creation and strengthening of country-based e-mobility associations. Its core activity is policy development through its industry working groups.
AEMDA's vision is to support Africa's achievement of 1 million locally assembled EVs by 2030.

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- ARC Ride Kenya
- Wikipedia

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