TUMI ELECTRIC BUS MISSION, AFRICA E-MOBILITY FORUM
20-24 March 2023, Hyatt, Dar Es Salaam, Tanzania

PRESENTATION ON KAMPALA CITY E-MOBILITY TRANSITION

Eng. Jacob Byamukama
Director Engineering and Technical Services

Together we can transform Kampala city
Established as a municipality in 1947 & became Uganda’s Capital City at independence.
Transport Situation Now – Kampala City

- Kampala has about 2,110km of roads of which about 642 km are paved and the rest are unpaved.
- City Public Transport – Dominated by 14-seater Taxis, 2-wheelers (motorcycles), few buses and a peak hour passenger train service on one route
- Estimated modal split: Car (10%), PT (30%), Cycling & Walking (60%)
- 29 signalised junctions
- Est. 60% of vehicles in Uganda use Kampala roads even though the Kampala road network is only 0.083% of the estimated road length in Uganda (KCCA STRATEGIC PLAN, 2014/15-2018/19).
MOBILITY IN GKMA

- >24,000 MH Lost Daily due to Traffic Congestion ~ USD 800m Annually.
- UGX 500m Extra Burnt Fuel Daily Due to Traffic Congestion.
- Kampala Ranked 2nd City with Poor Air Quality in Africa and Top 15 in the World.
- Unskilled and Semi-Skilled ('juakali') Spare Parts Suppliers and Vehicle Maintenance & Service Providers

IT’S TIME TO ACT
Road Traffic Situation

- Kampala city is heavily congested with peak traffic speed reducing to lower than 20 km/hour.
- The City experiences air pollution, unsafe traffic mix using the limited road space, traffic accidents and absence of dedicated cycle lanes.
Major Transport Challenges in Kampala City

- Rapid Urbanization and Motorization
- Traffic Congestion especially Central Business District (CBD)
- Urban sprawl which has increased average trip length
- Traffic accidents
- Lack of safe and well designed NMT facilities
PUBLIC TRANSPORT IN KAMPALA

- Dominant mode is “matatu” – a 14 seats minibus – 33% of all DAILY trips
- Next mode is “Boda-Boda” - 10% of all trips
- 46% of all public transport trips (and 56% of taxi users) required to do one or more transfer from Origin to destination – this makes PT VERY expensive and unaffordable
- Level of service of PT is very poor: no timetable, no fix fare, no fare structure, no stops, no terminals, no fix route → VERY long travel times, high level of noise and pollution
Public Transport in Kampala

Boda Boda

• In GKMA, we have witnessed a considerable growth of boda-boda services in recent years
• Cover one-third of the public transport trips
• E-hailing services operated by tech-enabled companies
• Most attractive PT mode
• Unlikely to act as feeders to BRT
Emergence of the Motorcycle as an informal means of public transport has grown beyond control and is causing safety and congestion issues due to their numbers and their ways of operating.
Boda Bodas – Action Plan

- Register the Boda Boda Industry in GKMA
- Formalise the Boda bodas in GKMA
- Implement the boda boda freezone
- Encourage the use of E-bikes
- Work with partners to provide charging Infrastructure
- Regulate Boda Boda Operations in GKMA
Taxis a.k.a Matatus

- In GKMA, we have a large number of people that are dependent on the taxi industry
- The over supply of taxis most of them very old that are not regulated causes congestion
- The most dominant PT mode
- Likely to act as feeders to BRT
- Could operate complementary services to BRT
Taxis – Action Plan

• Regulate the Taxi Industry
• Formalise Routes and progressively transform to the use of higher capacity vehicles
• Encourage the use of E- Taxis
• Bring the ride-hailing segment of the transport industry on board e.g Easy Matatu
• Government through set to introduce measures to improve security in Public transport
Buses – Current Status

• Government is actively promoting the manufacture of the Public Transit buses in the country
• Transport Industry aware of the Government reforms
• Delicate transition from Taxis to Buses
• Electric Buses need infrastructure and charging points in the City
• Likely to act as feeders to BRT

KCCA
KAMPALA CAPITAL CITY AUTHORITY
For a better City
Buses – Action Plan

• Government to continue actively regulate the Bus Industry
• MoWT to allocate high capacity public transport routes to Buses with the implementation of BRT
• Actively encourage the use of E-Buses especially in GKMA
• Work with ITDP and TUMI to identify the gaps and implement the agreed mitigation measures
E-Mobility in Uganda

• The country is home to the first electric bus manufactured on the African continent, paralleled only by South Africa and Ethiopia.
• E-vehicles have the potential to mitigate greenhouse gas emissions and climate change.
• Transition to e-mobility is taking phased approach w.r.t motorcycles, cars and buses.
• Need for a regulatory framework and asset Financing
• Major Challenge is limited capacity or access to finance to provide e-mobility services at the scale required for widespread adoption as well as charging infrastructure.
E-Mobility in Uganda

- **Zembo** introduced e-motorcycles to Uganda’s boda-boda sector in 2019, and as of March 2021 had deployed over 200 e-motorcycles serviced by a growing number of charging stations that are mainly hybrid powered (Hydro and Solar)

- **Bodawerk** retrofitst existing bodas' petrol-driven power engines with electric ones. The lithium-ion battery packs are assembled and leased on a subscription-based model to boda drivers

- **Kiira Motors** has built a limited number of electric private vehicles and Electric powered e-buses.
Kiira Motors Corporation

- Kiira Motors Corporation is a State Enterprise established to champion value addition in the nascent Motor Vehicle Industry in Uganda through Technology Transfer, Contract Manufacturing and Supply Chain Localization.
- Kiira Motors have partnered with local Operators Kalita and Tondeka to deliver and Operate Electronic buses in GKMA.
- This is a Government of Uganda Funded Project in partnership with the Private Sector.
KIIRRA Motors Corporation

• Building the Indigenous Motor Vehicle Industry is consistent with Uganda’s aspirations and pathways to Vision 2040 outlined in the National Development Plan III 2021 – 2026. Specifically,

• (1) Promotion of Local Manufacturing of Motor Vehicles;

• (2) Establishment of an Efficient, Integrated, Sustainable, Safe and Inclusive Public Transport System; and

• (3) Promotion of Environmentally Friendly Transport Solutions.
The correct way to address the current fuel crisis in Uganda is to move from petrol to electric cars, buses, motor cycles and trains.

Uganda should have made a full transition to Electric Vehicles within 20 Years.

HE Yoweri Kaguta Museveni Address to the Nation on 20th and 27th July and 5th August 2022
The Science, Technology and Innovation Secretariat is coordinating the E-Mobility Ecosystem through the E-Mobility Consortium that is currently comprised of over eighty (80) E-Mobility Value Chain Actors in Uganda.
Kiira Vehicle Plant Start Up Facility
Electric Bus

- Capacity: 90 (49 Seating, 41 Standing)
- 300km per Charge
- Quality & Safety
- Comfort
- Connectivity
- Inclusive Design
- Payment Gateways

Local Content

- Charging Facilities
- Bus Stops
- 7 One-Way Trips on Single Charge
- ~ 40km

Kampala
The Kayoola EVS Buses are offering public transport along the Kampala Northern Bypass
E-MOTOR CYCLE INITIATIVES

Other Players: Modjo Energies; NFT Mobility; Motorcare; Green Hub Kampala

These initiatives have brought approximately 300 electric motorcycles on the road being utilized by existing players offering public transport and logistics.
Financing

- Initial costs are often higher than ICE buses, but with lower total cost of ownership (TCO) - Savings from reduced energy costs and Maintenance.

- Equity Financing from Financing institutions and green champions

- Tax incentives, such as value-added, import Duty, can reduce the cost Manufacturers hence reduced initial cost.
Conclusion

• The rapid growth in vehicle population in developing countries calls for controlling the fuel energy demand and greenhouse gas (GHG) emissions which is a global concern.

• The transition to electric bikes, buses, cars and trucks has started but could happen faster.

• Kiira Motors Corporation is working with Tondeka Metro, RentCo Africa, and Golden Dragon to produce and deploy 1,030 Buses by 2025, some of which will be Electric.

• There is need for government to get the right regulations and infrastructure in place to enable a smooth transition by 2050.
THANK YOU