E-MOBILITY BARRIERS IN TANZANIA
AFEMA

Africa E-Mobility Alliance (AfEMA) is a neutral industry initiative for stakeholders across Africa’s electric mobility field to engage.

We conduct research, inform stakeholders, and support private industry on the transition to e-mobility in Africa.
This study was carried out from August of last year, and involved desk research, interviews, and a questionnaire filled out by 90% of e-mobility companies in Tanzania.

We worked in collaboration with SolutionsPLUS, and with e-mobility companies in Tanzania.

The goal of this study was to assess the barriers to e-mobility in Tanzania, in order to make recommendations which can accelerate the transition to clean transportation in Tanzania.
INTRODUCTION

The number of vehicles in Tanzania has quadrupled over the last 20 years, with the number of two- and three-wheelers significantly increasing in recent years to 1.2M in 2016.

There are an increasing number of startups and companies in the electric vehicle (EV) market in Tanzania, attracted by the country’s large market, the early stage of the market, and enabled by increasingly affordable EV technology.
E-MOBILITY COMPANIES

5,000+
CURRENT EV FLEET

- Larger than all EV is EA combined
- From 10+ e-mobility companies

Vehicle type for e-mobility companies in Tanzania
<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2W &amp; 3W</td>
<td>5,000+</td>
</tr>
<tr>
<td>4W</td>
<td>30+</td>
</tr>
<tr>
<td>BUSES</td>
<td>0</td>
</tr>
</tbody>
</table>
E-MOBILITY IN TANZANIA

Government Initiatives

DAR - MOROGORO
Tanzania first electric train

- 35 tonnes per axle loads
- Survive up to 40 years
- Bridge can survive up to 100 years

The train will use concrete sleepers which improve durability and give the railway network capacity to carry up to 35 tonnes per axle loads. The rails can survive up to 40 years before any major repairs while the train bridge can survive up to 100 years.

Speed 160Mph

300 Km
6 Station
9 to 12 trips a day

Dar-Morogoro

26,000 Employment Opportunities

Tsh.4.3 trillion ($1.9 billion)

So far, over 26,000 employment opportunities have been created by the Tsh.4.3 trillion ($1.9 billion) project and more job opportunities will be created in the second phase and subsequent ones and once the stations become fully operational.
PHASING OUT FOSSIL FUELS

African countries by 2040
- Kenya
- Rwanda
- Egypt
- Ghana
- Rwanda
- Cape Verde

Earliest bans
- Norway, 2025
- Belgium, 2029
- Iceland, 2030
INVESTMENT IN E-MOBILITY IN AFRICA

- **86** E-mobility startups across 7 countries

**GHANA**
- 4 COMPANIES
- $6M+ RAISED

**NIGERIA**
- 13 COMPANIES
- $10M+ RAISED

**KENYA**
- 40 COMPANIES
- $52M RAISED

**UGANDA**
- 9 COMPANIES
- $5M+ RAISED

**ZAMBIA**
- 3 COMPANIES
- <$1M RAISED

**ZIMBABWE**
- 6 COMPANIES
- $3M+ RAISED

**TANZANIA**
- 11 COMPANIES
- $1M+ RAISED

**AFEMA**
- Registration on final stages
- Has an office
- 10 members

**Registration on final stages**
- Has an office
- 10 members

**Total capital raised by e-mobility companies from AFEMA data**

$78,700,000
Plans for charging stations:

- Uganda: 35+
- Kenya: 15+
- Rwanda: 12+

Source: chargemap.com
E-MOBILITY ECOSYSTEM IN TANZANIA

EASE OF DOING BUSINESS
54 / 100

URBANIZATION
36%

GRID ELECTRICITY ACCESS
40%

ENERGY COSTS
- $1.24 L petrol
- $1.32 L diesel
- $0.10 kWh residential
- $0.10 kWh commercial

Electricity Generation by Source
- 75% Hydro
- 25% Solar

POLICIES
- Lowered EV import tariffs? No
- Dedicated EV electricity tariffs? No
- Age limit for used vehicle imports? No
INVESTMENT IN E-MOBILITY IN EAST AFRICA

$58+ million
Capital raised by East African e-mobility companies

KENYA
40 COMPANIES
$52M RAISED

UGANDA
9 COMPANIES
$5M+ RAISED

TANZANIA
11 COMPANIES
$1M+ RAISED
SUPPORTING STAKEHOLDERS

DEVELOPMENT AGENCIES
- SolutionPlus
- GIZ

GOVERNMENT ENTITIES
- TRA
- LATRA
- EWURA, TANESCO
- TBS
- DIT, ATC

ASSOCIATIONS
- AFEMA
- TSA
- TAREA
- TAEMA*
Vehicles by Segment

**Boda bodas**
- Can cost around TZS 2.5 M ($1,000)
- Used for commercial purposes
- Most common vehicle in Tanzania

**Passenger cars**
- Can cost around TZS 12 M ($5,000)
- Used for personal travel
- Typically imported used from Japan

**Bajajis & Gutas**
- Can cost around TZS 7.5 M ($3,200)
- Used for passenger & goods delivery
- Typically rented, without path to ownership

**Minibuses**
- Can cost around TZS 30 M ($12,000)
- Used for shared passenger travel
- Common in small towns and rural areas
BARRIERS TO E-MOBILITY IN TANZANIA

FINANCING

POLICY

SUPPORTING ECOSYSTEM
FINANCING NEEDS

<table>
<thead>
<tr>
<th>Company stage</th>
<th>Pre-seed</th>
<th>Pilot, seed, investment rounds</th>
<th>Scale-up</th>
</tr>
</thead>
</table>
| Purposes      | Developing new technologies  
                  Testing business models  
                  Pilot deployment | Pilot, seed, rounds | Expanding vehicle fleet  
                  Building charging & swapping network  
                  Entering new markets  
                  0% interest debt financing eg Imbeju from CRDB & COSTECH |
Importing vehicles in Tanzania requires going through TRA, then taking the vehicle to LATRA for business license for commercial vehicles.

However, the process was initially made for ICE vehicles, and required CC engine size - which does not exist on electric vehicles. Some electric scooters have been registered as bicycles in order to lower the import costs. However, this means they are unable to get license plates, and must use chassis and parts IDs to trace in case of theft.

The issue may be exacerbated by private customs agents who are unfamiliar with EVs.
Vehicles imported into Tanzania are subject to different import duties depending if they are completely-built units (CBU), semi-knocked down (SKD), or completely knocked down (CKD).

Under East African Community regulations, CBU vehicles should attract 25% import duties, and CKD vehicles should be charged 10%.

Moving to CKD imports and allowing companies to access the EAC CKD rates could reduce taxation by a third and make EVs more affordable.
As of the writing of this report, there were yet to exist standards for electric vehicles, batteries for EVs, or charging.

A lack of clear, recognized standards can allow for the importation of substandard products.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 6469</td>
<td>Electrically propelled road vehicles — Safety specifications</td>
</tr>
<tr>
<td>ISO 13063</td>
<td>Electrically propelled mopeds and motorcycles — Safety specifications</td>
</tr>
<tr>
<td>ISO 13064</td>
<td>Battery-electric mopeds and motorcycles — Performance</td>
</tr>
</tbody>
</table>
Currently, around 40% of Tanzanians have access to grid electricity.

This is primarily in large urban areas; rural Tanzania is still mostly unconnected to the grid.

Companies are therefore focusing on rolling out EVs in urban Tanzania.

To provide equitable access to this clean technology, there is a need to extend access to electricity across Tanzania.

This may require minigrids or other innovative methods to improve rural access to EVs.

The government plan to give access to all villages by 2025 would be a major boost to these efforts.
PRODUCT-MARKET FIT

Asian-manufactured vehicles often:
- Use small wheels
- Built for personal usage
- Low ground clearance

However, these can come up against potholed or murram roads, and may be inappropriate for vehicles carrying heavy loads.

There is a need to ensure appropriate products are imported, or are adapted to the local context.
As it is a new sector, there has not yet been significant capacity building.

Institutions like the Dar es Salaam Institute of Technology (DIT) and Arusha Technical College have partnered with companies to provide hands-on learning opportunities to students.

Improving educational opportunities for Tanzanians entering this cutting-edge market is key to ensuring high-quality maintenance is available.
CONSUMER AWARENESS

From our survey, three-quarters of e-mobility companies rated consumer awareness as low or very low.

However, AMEND study done in Feb 2022 found that 75% of boda boda riders had heard of electric motorcycles.

This indicates word is spreading organically, but there is likely to be misinformation circulating.

E-mobility stakeholders, e.g., development agencies and associations, need to implement consumer awareness programs.
AFEMA surveyed 10 e-mobility companies in Tanzania as part of its initiative to map the Tanzanian e-mobility ecosystem.

### Tanzania e-mobility policies ranking

- **1st choice**
  - EV & charging standards: 40%
  - TOU electricity tariff: 40%
  - Loan guarantees for EVs: 40%
  - Reduced import tariffs: 40%

- **2nd choice**
  - EV & charging standards: 30%
  - TOU electricity tariff: 30%
  - Loan guarantees for EVs: 30%
  - Reduced import tariffs: 30%

- **3rd choice**
  - EV & charging standards: 20%
  - TOU electricity tariff: 20%
  - Loan guarantees for EVs: 20%
  - Reduced import tariffs: 20%
RECOMMENDED POLICIES

**IMPORT TARRIF**
- Reduced VAT, Import duty
- Case countries
  - Kenya
  - Malawi (very recent)
  - Rwanda

**FUNDING: GRANT & LOANS**
- Loan guarantees
- EV purchase loans
- Case countries
  - India
  - USA

**TOU ELECTRICITY TARIFF**
- Lower electricity rates at night
- Case countries
  - Kenya
  - Rwanda

**EV & CHARGING STANDARDS**
- Adapt ISO standards for EV
- Case countries
  - Kenya
  - Rwanda
E-mobility companies requested support from institutions
NEED FOR TANZANIA E-MOBILITY ASSOCIATION

- Registration on final stages
- Has an office
- 10+ members
- Has selected leadership

Industry-recommended role for TAEMA

- Mobilize industry players
- Customer awareness
- Policy lobbying

% respondents
THANK YOU