# E-MOBILITY ROADMAP FOR DAR ES SALAAM, TANZANIA

This project has received funding from the European Union Horizon 2020 research and innovation Programme under grant agreement no. 875041

## PROJECT PARTNERS

## ABOUT

The roadmap presents a plan to scale the adoption of e-mobility in Dar es Salaam, Tanzania

## TITLE

E-Mobility Roadmap for Dar es Salaam

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## PICTURES

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# E-Mobility Roadmap for Dar es Salaam

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# Abbreviations

| | |
|---|---|
| AfDB | African Development Bank |
| BRT | Bus Rapid Transit |
| CO2 | Carbon dioxide |
| CNG | Compressed Natural Gases |
| CTCN | Climate Technology Centre and Network |
| DART | Dar Rapid Transit Agency |
| DCC | Dar es Salaam City Council |
| DIT | Dar es Salaam Institute of Technology |
| DLR | Deutsches Zentrum für Luft- und Raumfahrt (DLR) |
| DRA | Dar es Salaam Regional Administration |
| EA | East Africa |
| EAC | East Africa Community |
| EU | European Union |
| ICE | Internal Combustion Engine |
| ITDP | Institute for Transportation and Development Policy |
| LATRA | Land Transport Regulatory Authority |
| LGA | Local Government Authority |
| MLHSD | Ministry of Lands, Housing and Human Settlement Development |
| MoE | Ministry of Energy |
| MoS (UE) | Ministry of State (Union and Environment) |
| MoF | Ministry of Finance |
| MoTI | Ministry of Industry and Trade |
| MoT | Ministry of Transport |
| NDCs | Nationally Determined Contributions |
| NEMC | National Environment Management Council |
| NGO | Non-Government Organization |
| PO-RALG | President's Office, Regional Administration and Local Government |
| SESCOM | Sustainable Energy Services Company |
| TPDC | Tanzania Petroleum Development Corporation |
| TANESCO | Tanzania Electric Supply Company Limited |
| TANROADS | Tanzania National Roads Authority |
| TARURA | Tanzania Rural and Urban Road Authority |
| TRA | Tanzania Revenue Authority |
| UDART | UDA Rapid Transit Public Limited Company |
| UEMI | Urban Electric Mobility Initiative |
| UNEP | United Nations Environment Programme |
| UN-Habitat | United Nations Human Settlements Programme |
| UNDP | United Nations Development Programme |
| URT | United Republic of Tanzania |
| VAT | Value Added Tax |
| WB | World Bank |

# Executive summary

The transport sector is one of the main contributors to greenhouse gas (GHG) emissions in Tanzania, according to the 2021 Nationally Determined Contribution (NDCs). One the mitigation measures prioritised in the NDCs, and the Dar es Salaam Climate Action Plan is to shift to electric mobility to reduce emissions, air pollution, and dependence on fuel imports. Precisely, the Dar es Salaam Climate Action Plan aims to have 10% of electric private vehicles in 2030, reaching 50% by 2050.

In Dar es Salaam, the transition to electric mobility has primarily taken place in the three-wheeler, motorcycle, and car segments. Currently, there are 520 registered electric vehicles in Tanzania, including 248 electric three-wheelers, 204 electric motorcycles, and 68 electric cars. In addition, up to 5,000 unregistered electric two-wheelers are said to be in operation, based on hearsay from retailers. The lack of registration leads to a lack of clarity about the total number of electric two-wheelers. Developments are planned in the bus segment in the coming years, as the Dar Rapid Transit Agency (DART) plans to replace its fleet of diesel buses with electric buses, among other technologies.

The SOLUTIONSplus project gathering local, regional, and international partners DART supported the deployment of 43 electric three-wheelers, using lithium-ion batteries, and exploring different vehicle designs and technologies. The project also rolled out 16 electric bicycles for urban delivery and organised numerous training and awareness-raising activities. SOLUTIONSplus has prepared this roadmap to provide a pathway for the transition from ICE to electric vehicles. The roadmap starts by undertaking a review of existing electrification initiatives across various electric vehicle types. The roadmap subsequently provides recommendations on strategic measures across various vehicle categories.

- For electric buses, the roadmap recommends setting ambitious procurement targets, establishing infrastructure for charging, updating transport plans, and promoting local assembly through financial incentives.
- For electric three-wheelers, the roadmap recommends that the government support initiatives to increase financial assistance through subsidies or grants to reduce the cost of purchasing e-three-wheelers. Additionally, the roadmap suggests establishing targets for deploying government-funded EV charging infrastructure to ensure widespread coverage.
- For pedal-assist electric bicycles, the strategies include creating supportive environments, developing a cycling infrastructure network, and offering financial incentives.
- For all modes, the roadmap recommends measures to boost public awareness and to support training programmes. The roadmap also recommends setting ambitious targets to increase the sale of EVs, revising building codes to include the development of EVs, and adopting fiscal incentives to support private and public charging facility development. With an increasing number of EVs, the roadmap recommends electricity grid improvements to accommodate growing electricity demand. With the necessary infrastructure and policy framework are in place, the Government of Tanzania can accelerate the shift to e-mobility.

# 1 Introduction

An increase in the number of private vehicles, particularly motorcycles, three-wheelers, and cars, is a key factor contributing to the increase in transport-related carbon emissions in Tanzania. In 2007, there were about 52,015 motorcycles and three-wheelers, and the fleet significantly rose to over 1.2 million vehicles by 2016 (Africa E-mobility Alliance, 2023). Most vehicles, especially cars, are imported and are highly polluting. To expand access to affordable mobility and address environmental concerns, Dar es Salaam is taking proactive steps to shift from petrol and diesel vehicles to cleaner technologies (Dasgupta, 2020).

In its updated Nationally Determined Contribution (NDC), the Government of Tanzania proposes mitigation measures in four major sectors including the transport sector (URT, 2021). In addition, the Dar es Salaam Climate Action Plan proposes electrifying 10% of private vehicles by 2030 and 50% by 2050, supported by a transition to 100 percent renewable energy by 2050 (DCC, 2020). Currently, there are a few e-mobility initiatives, such as the introduction of electric vehicles and the conversion of internal combustion engine (ICE) vehicles to electric drivetrains. Based on data obtained from TRA, there are 520 registered electric vehicles, comprised of electric three-wheelers, motorcycles, and cars. In addition, per DART's Soot Free Buses study, the agency plans to gradually replace its fleet of Euro III, IV, and VI diesel buses with CNG and electric buses. Ultimately, DART plans to have 945 electric buses running by 2040. Electric buses will be deployed in Phases 3, 5, and 6, which are expected to be operational after 2030 (Dar Rapid Transit Agency, 2022).

This roadmap provides a pathway for key stakeholders to accelerate the transition to electric mobility in Dar es Salaam. The methodology involved conducting a review of existing studies and interviews with stakeholders in the industry. The team gathered information on the status of current e-mobility initiatives for the various vehicle types. The report makes recommendations on the actionable steps that the government can take to increase readiness for scaling up e-mobility in the city, keeping in mind a holistic approach to sustainable urban mobility planning.

# 2 Methodology

The SOLUTIONSplus project is a Research & Development project funded by the EU Horizon 2020 programme, implemented by a large consortium of local, regional, and international organisations. In Dar es Salaam, the project was implemented by the Dar Rapid Transit Agency (DART), the Urban Living Lab Center (Urban Electric Mobility Initiative and Wuppertal Institute), the United Nations Human Settlement Programme (UN-Habitat), the United Nations Environment Programme (UNEP), ITDP Africa, in partnership with external organisations such as the Dar es Salaam Institute of Technology (DIT).

In Dar es Salaam, the project promoted the electrification of three-wheelers ("bajaji"), tested new mobility options in the form of pedal-assist electric bicycles used for urban deliveries, raised awareness on electric mobility, and identified policies to remove barriers to sustainable electric urban mobility. As part of the project, SOLUTIONSplus partners in collaboration with the Dar es Salaam Regional Administration (DRA) extended their support to assist in developing an e-mobility roadmap for Dar es Salaam.

Developing the e-mobility roadmap started with data collection. This involved reviewing existing policy documents, conducting stakeholder interviews, and conducting site visits to start-up companies to obtain information on the existing e-mobility initiatives. The main policy and framework documents reviewed, from both Tanzanian institutions and non-government stakeholders, include the following:

- National Transport Policy, (Ministry of Communications and Transport, 2003).
- Dar es Salaam Urban Transport Master Plan (JICA, 2018).
- Dar es Salaam Climate Action Plan 2020-2050, (DCC, 2020).
- Updated National Determined Contribution (Ministry of Environment Tanzania, 2021).
- The Finance Act of 2023 (Ministry of Finance and Planning , 2023).
- Promoting Soot Free Buses in Tanzania (Dar Rapid Transit Agency, 2022).
- Policy framework and market readiness for the development of e-mobility, (UNEP, 2020).
- Barriers to e-mobility in Dar es Salaam (AfEMA, UNH, UEMI, 2021).

**Table 1. Stakeholders interviewed**

| Institution | Date | Information obtained |
|---|---|---|
| Ministry of Works, Transport and Communications | 16 October 2023 | • Existing policy documents<br>• Governments position on the transition to cleaner fuels |

| | | |
|---|---|---|
| DART Agency | 24 November 2023 | • Plans for transition to electric and CNG<br>• Plans to set up a steering committee to champion the transition to BEBs |
| Tanzania Revenue Authority | 17 November 2023 | • Number of electric vehicles in Dar es Salaam<br>• Tariffs on the electric vehicles |
| E-mobility start-ups: AG Energies, TRI, DIT, Ekoglobe, Ensol, Knights and Apps, SESCOM, eMo Mobility | 23 October 2023 - 7 November 2023 | • Number of electric vehicles sold<br>• Charging strategies and technology<br>• Locations for charging points |

The preparation of the roadmap involved visiting various sites to assess the current number of electric vehicles, mapping existing charging points, and gathering information about plans to expand the infrastructure.

After engaging with stakeholders and reviewing the policies, SOLUTIONSplus partners analysed the current situation to determine the next steps for policy recommendations. E-mobility is still in an early stage, with the government currently prioritising the use of CNG to utilise existing gas reserves while planning to transition to electric vehicles in the medium term. Detailed feasibility and planning work for the transition to electric mobility are yet to be undertaken. Therefore, this roadmap makes recommendations to start with the necessary policy and technical assessments to unearth the needs in terms of energy requirements, charging infrastructure, and fiscal policies that will enable scaling e-mobility in Dar es Salaam.


**Figure 1. Geographic extent of the Dar es Salaam e-mobility roadmap (Source: ITDP)**

# 3 Where are we now?

## 3.1 Urban mobility context in Dar es Salaam

Dar es Salaam is the capital of Tanzania and one of the fastest-growing cities in Africa. The metropolitan area has an estimated population of 7.8 million people and an annual growth rate of 5.0 per cent (World Population Review, 2023). As urbanisation increases, so does the demand for better mobility solutions. According to (JICA, 2018). The residents in Dar es Salaam make an estimated 8.7 million trips in a day. The modal share 2017 indicates that 51.2% of residents use public transport, including BRT and minibus (daladala), while 39% walk. Additionally, 4.9% use motorcycles, 3.7 percent use cars, 0.5 percent use bicycles, 0.4% use commuter rail, and 0.3 % use ferry (JICA, 2018). However, due to the lack of a recent census and a household travel survey, all numbers should be considered approximations.

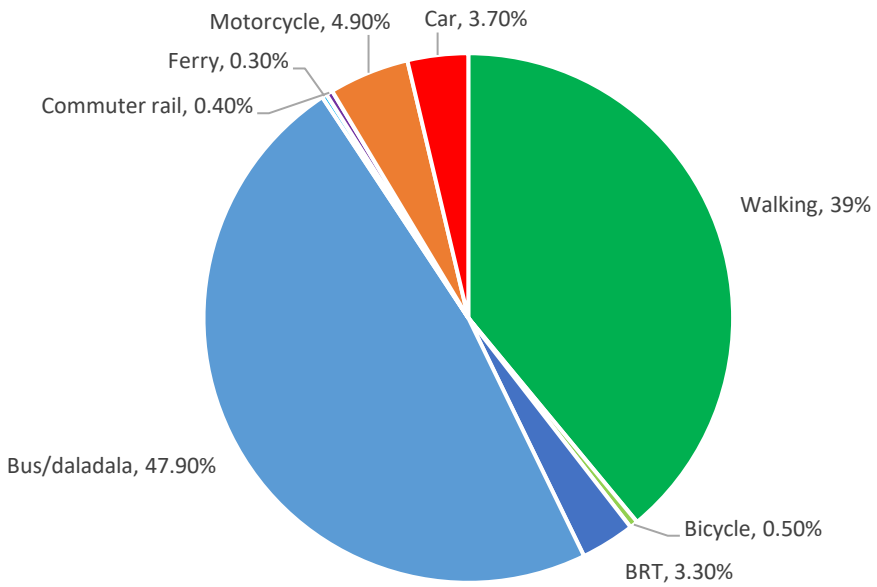


**Figure 2. Modal split for Dar es Salaam (Source: JICA, 2018)**


**Figure 3. Main public transport modes in Dar es Salaam: BRT (left) and a daladala (right) (Source: ITDP)**


**Figure 4. Electric bicycles (left) and dedicated cycle tracks (right) in Dar es Salaam (Sources: UEMI [left] and ITDP [right])**

**Figure 5. Three-wheelers in Dar es Salaam. (Source: ITDP)**

Daladalas provide the bulk of public transport services in Dar es Salaam. As of 2015, the fleet comprised approximately 6,820 registered daladalas owned by 3,700 owners operating on 362 licensed routes (AfDB, 2015). While offering basic mobility for city residents, the daladala system is characterised by old vehicles, poor driving behaviour, overcrowding, unreliable services, long waiting times, and contribution to pollution (Davis, 2019). Drivers operate on daily targets and retain net revenue after offsetting payment for vehicle rent, fuel, and other costs such as fines. Operators usually work very long hours, which can lead to traffic congestion and crashes (Madinda, 2013).

The Ministry of Works, Communications and Transport's National Transport Policy, 2003, indicates the policy directions that would support the country's socio-economic development. The policy seeks to resolve the transport challenges in urban areas by encouraging non-motorised transport and mass rapid transit over private vehicle use, proposing dedicated public transport lanes and different technologies to improve the efficiency of transport services (Davis, 2019).

In response to the national policy, the Dar es Salaam City Council (DCC) embarked on the implementation of a BRT as a core strategy to alleviate urban traffic congestion. The Council's vision was to develop a modern public transport system that is affordable to the users and yet profitable to the operators. The system would feature high-capacity buses that meet international standards, operate on exclusive lanes, and significantly reduce travel times (Davis, 2019). In 2016, the government commenced the operation of the first phase of the Dar Rapid Transit (DART) system, covering a 20.9 km corridor from Kimara to Kivukoni with two branches terminating at Morocco and Gerezani terminals. The system has 201 buses, and transports approximately 165,000 passengers per day (UDART, 2023).


**Figure 6. DART system: planned routes in 2025 (Source: DART, 2023)**

After walking and public transport, which account for a combined share of 90.2%, the next highest share of trips is by motorcycles (4.9%). Despite having a limited modal share, the number of these vehicles has been increasing rapidly over the past few years. As of May 2014, there were 4,432 registered motorcycles, mostly operating as "boda boda" taxis, and an increasing number of three-wheeled "bajajis" providing both taxi and public transport service and operating as an important last-mile mode. At the national level, the number of motorcycles and three-wheelers has grown from approximately 52,015 in 2007 to over 1.2 million in 2016, which poses a challenge due to their reliance on fossil fuels (SOLUTIONSPlus, 2023). It is important to note that these official numbers are almost 10 years old, and the actual numbers are likely much higher today.

The Land Transport Regulatory Authority (LATRA) has established regulations for motorcycles and three-wheelers to operate as private hire service vehicles (LATRA, 2020). Some of the conditions to obtain a license include:

- The vehicle must be roadworthy.
- The operator must carry not more than the authorized number of passengers as per the manufacturer's specifications.
- The vehicle must not interfere with commuter and intercity bus service operations.
- The motor vehicle must bear a black registration number on a white number plate.
- The driver must hold a valid certificate of authorization issued by the Authority.
- The fare should be regulated by the Authority.
- For motorcycles, the driver should provide two helmets marked with a special code number as prescribed by the authority.
- The drivers or riders must adhere to the uniform requirements as prescribed by the authority.
- Besides, verbal communication with LATRA in February 2022 indicated the intention to limit the seating capacity of three wheelers to three passengers only, but this could not be traced back to texts.

In 2017, private cars accounted for 3.7% of all trips and represented 6.2% of motorised trips. In a business-as-usual scenario, their share in motorised trips is projected to increase significantly by 2040, reaching 11.2%. However, the Master Plan includes a Scenario where the city continues to improve public transport, reducing the future car mode share to 6.6% (JICA, 2018). Lastly, the city has ferries serving the southern part of the city, and a commuter train that runs to the city centre.

## 3.2 Current policy frameworks

### 3.2.1 Policy framework for the development of e-mobility

The Government of Tanzania, through the Tanzania Commission for Science and Technology, Ministry of Works, Transport, and Communication (MWT), Ministry of Energy, and the environment division of the Office of the Vice President received support from the United Nations Climate Technology Centre and Network (CTCN) to develop a policy framework and study on market readiness for deploying of electric mobility in three cities including Dar es Salaam. The framework is to include a technical roadmap, investment plans, feasibility studies for selected interventions, and capacity development activities (UN, 2022).

### 3.2.2 Updated Nationally Determined Contribution

Tanzania developed its updated Nationally Determined Contributions (NDCs) to confirm the strategies that the country plans to implement to mitigate emissions across sectors, including energy and transport. Under the transport sector, the NDCs stress the use of clean energy, promotion of NMT, and expansion of the BRT system (UNFCCC, 2021).

### 3.2.3 Dar es Salaam Climate Action Plan 2020-2050

Upon adoption of the Paris Agreement on Climate Change at the 2015 Conference of the Parties (COP), the Government of Tanzania agreed to prepare the Dar es Salaam Climate Action Plan. Dar es Salaam contributes about 12 million tonnes of carbon dioxide, out of which the transport sector contributes 21 percent. Most of the transport-related emissions come from private and commercial vehicles using diesel and petrol (DCC, 2020).

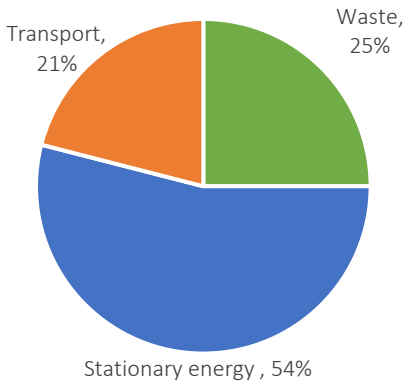


**Figure 7. Carbon dioxide emissions by sector (Source: DCC, 2020)**

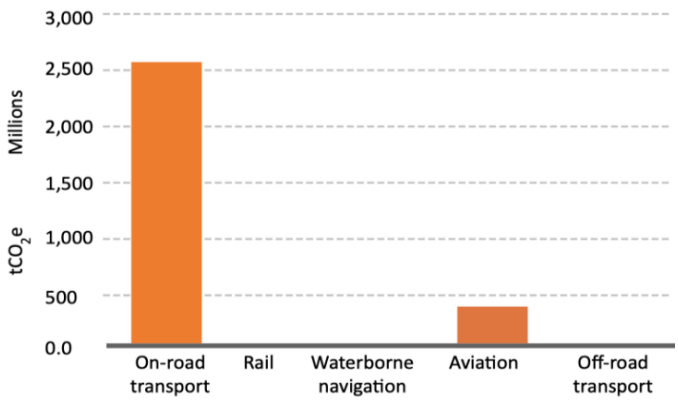


**Figure 8. GHG emissions from the transport sector in Dar es Salaam in 2016 (Source: DCC, 2020)**

The Action Plan commits to reducing emissions by 29 percent in 2030 and 65 percent by 2050. To reduce the emission contribution from transport, the action plan recommends several initiatives including promoting sustainable transport modes and adopting low-emission vehicles (DCC, 2020).

Figure 9 shows the target mode split for the future. The Action Plan aims to increase the number of trips made by BRT to 20% in 2030 and 40% in 2050, and trips by bicycle to 3% in 2030 and 8% in 2050. The Action Plan anticipates a reduction of the share of walking to 17% by 2030, followed by an increase to 25% in 2050. The number of trips made by daladala would increase to 53% in 2030 before decreasing to 25% in 2050.

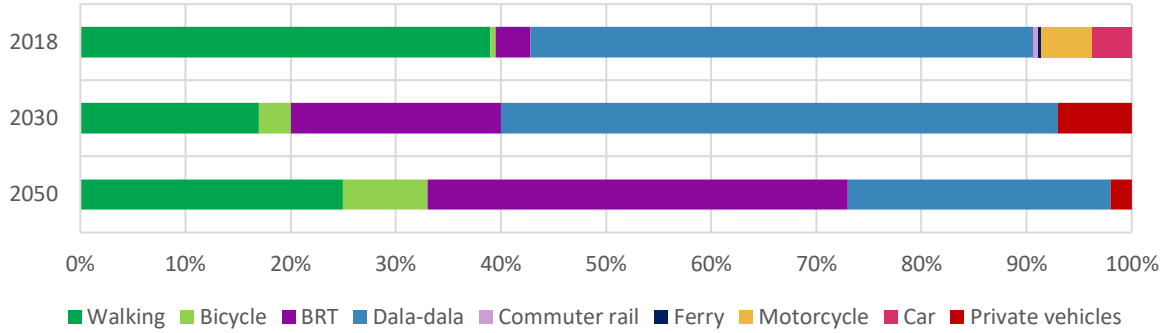


**Figure 9. Target mode split in Dar es Salaam in 2030 and 2050 (Sources: JICA, 2018; DCC, 2020)**

The DCC targets to have 20% of buses run on electricity by 2030, as indicated in Table 2, before increasing to 80% in 2050.

**Table 2. Target for the adoption of low-emission vehicles**

| Vehicle type | 2030 | 2050 |
|---|---|---|
| Buses | 20% electric, 5% CNG | 80% electric, 15% CNG |
| Private vehicles | 10% electric | 50% electric |

Table 3 highlights the mitigation and adaptation actions around sustainable mobility that will enable the city to achieve the targets.

**Table 3. Climate Action delivery action under sustainable mobility and low emissions transport**

| Timeline | | 2 years | 2-5 years | Beyond 5 years |
|---|---|---|---|---|
| Sustainable mobility | | | | |
| Action 19 | Establish a public Transport Master Plan by 2021. | | | Ö |
| Action 20 | Improvements to the feeder bus systems. | | | Ö |
| Action 21 | Promote and improve the efficiency of existing city railway networks and construct more lines by 2040. | | | Ö |
| Action 22 | Construct public transportation terminal. | Ö | | |
| Low emissions transport solutions | | | | |
| Action 23 | Increase the use of alternative fuels such as electricity within the vehicle fleet. | | Ö | |
| Action 24 | Improving the efficiency of freights by promoting a modal shift of long-distance freight from trucks to railways. | | | Ö |
| Action 25 | Establish a high import duty on old vehicles. | Ö | | |

### 3.2.4 Fiscal policies

The Government of Tanzania's 2023-2024 budget included four areas of incentives for clean vehicles:

- Tax exemptions based on engine capacity for electric vehicles.
- A 10 percent tax on imported buses more than 5 years old.
- Zero excise duty on BRT buses.
- Zero excise duty on unassembled EV parts.

When speaking about the East African Community (EAC) agreement on supporting EVs, Makame Mbarawa, Minister for Transport, emphasised that the incentives are aimed at speeding up investment in EVs by supporting start-ups that import and assemble vehicles and parts (Matandiko, 2023). This was concretised through the new industrial license which reduced import duty from 25 to 0 percent for locally assembled vehicles.

Previously, the government had adopted the excise duties specified in the EAC common tariff guideline, updated and implemented on 01 July 2022. However, with the new Finance Act of 2023, the government reduced excise duty on hybrid and electric vehicles (TRA, 2023). These reductions aim to make these green technologies more affordable and attractive to consumers and investors.

The government, through the TRA, is now registering electric vehicles. Ninety-five thousand shillings (95,000/=tzs) is charged for registering a micro-hybrid with a capacity of 5< Kw. Two hundred and fifty thousand shillings is charged for registering the semi-hybrid with a capacity

of 6-30 kW, the full hybrid with a capacity of 31-40 kW, and the plug-in hybrid with a 41- 90 kW capacity (URT, 2024)

In 2024, the Minister of Finance has proposed to provide import duty relief under the duty remission. The rate have reduced from 25% to 0% charged on theelectric batteries(lithium-iron Electric accumulators). The reduction aim to stimulate investment in the prodduction and assembly of electric cars and motorcycles locally (URT, 2024).

**Table 4. Changes in the excise duty**

| Vehicle | Assembly status | EAC excise duty, 2022 (percent) | Tanzania excise duty, 2023 (percent) |
|---|---|---|---|
| Hybrid bus (with both ICE and electric motors) for 10 passengers, including a driver | Unassembled | 0 | 0 |
| | Other | 25 | 10 |
| Hybrid bus (with both ICE and electric motors) for more than 15 persons including a driver | Unassembled | 0 | 0 |
| | Other | 25 | 10 |
| Hybrid bus (with both ICE and electric motors) for more than 25 persons including a driver | Unassembled | 0 | 0 |
| | Other | 25 | 10 |
| Electric vehicle for 10 persons, including a driver | Unassembled | 0 | 0 |
| | Other | 25 | 0 |
| Electric vehicle for more than 10 but fewer than 15 persons, including a driver | Unassembled | 0 | 0 |
| | Other | 25 | 0 |
| Electric vehicle for more than 25 persons, including a driver | Unassembled | 0 | 0 |
| | Other | 25 | 0 |
| Other hybrid vehicles (ICE and capable of being charged to an external source of electric power) | | 25 | 1,000 cc to ≤ 2,000 cc: 5 |
| | | | ≥ 2,000 cc: 10 |
| Other electric vehicles (four-wheelers) | Unassembled | 0 | 0 |
| | Other | 25 | 0 |
| Motorcycle with an electric motor | | 25 | 0 |
| E-Tricycles | | 25 | 0 |

## 3.3 Ongoing e-bus initiatives

The United Nations Environment Programme (UNEP) supported DART to prepare a study to understand the feasibility of switching to clean technologies on BRT corridors. The "Promoting Soot Free Buses in Tanzania" project provided recommendations on the best bus technologies considering options of cleaner diesel, CNG, or electric buses (Dar Rapid Transit Agency, 2022). Table 5**Error! Reference source not found.** shows the proposed recommendations for the six phases. So far, the BRT phase 1 operator has procured 210 buses, the first batch consisting of 140 Euro III diesel buses and the second batch comprising 70 Euro IV diesel buses.

**Table 5. Plan for introduction of low-emission buses in the BRT system (Source: DART, 2022)**

| Parameters | 2021-25 | 2025-30 | 2030-35 | 2030-40 |
|---|---|---|---|---|
| | Phases 1 and 2 | Phases 1, 2, 3, 4, and 5 | Phases 1, 2, 3, 4, 5, and 6 | Phases 1, 2, 3, 4, 5, and 6 |
| BRT corridor length (km) | 41.2 | 94.9 | 120.9 | 154.4 |
| BRT daily ridership | 2,082,009 | 3,962,931 | 5,026,088 | 5,260,024 |
| Euro III & IV diesel buses | 305 | 165 (Phase 1) | 95 (Phase 1) | - |
| Euro VI diesel buses | - | 286 (Phase 2) | 286 (Phase 2) | 0 |
| CNG buses | - | 1,894 | 1,964 | 2,345 |
| Electric buses | - | 405 | 840 | 945 |
| total buses | 305 | 2,750 | 3,185 | 3,290 |

The study envisions that all six phases of the DART BRT project will be operational by 2035. The diesel-fuelled buses of Phase 1 and 2 will be phased out by 2030-2035 and replaced with CNG buses. The study stress that, phase 1, 2, and 4 will have all the CNG buses. Phase 3 will have a mix of electric and CNG buses, while the last two phases (5 and 6) will have fully electric fleets (Dar Rapid Transit Agency, 2022).

The government has formed technical and steering committees to champion the transition to electric and CNG buses in the BRT system. The steering committee involves decision-makers at the ministerial level, incorporating representatives from the Ministry of Energy, Ministry of Works, Ministry of Transport), DART agency, Tanzania Electric Supply Company (TANESCO), Tanzania Petroleum Development Corporation (TPDC), and Energy and Water Utilities Regulatory Authority (EWURA). The World Bank, through the Dar es Salaam Urban Transport Improvement Project, is supporting the government to advance the findings from the soot-free project through feasibility studies. The steering committee has prepared terms of reference for procuring experts to conduct the following studies:

- Financial assessment for electric and CNG buses.
- Technical feasibility study on depot modifications needed to accommodate e-bus charging equipment and CNG bus refuelling facilities.
- Assessment of the ability of the electrical grid to support e-bus charging.

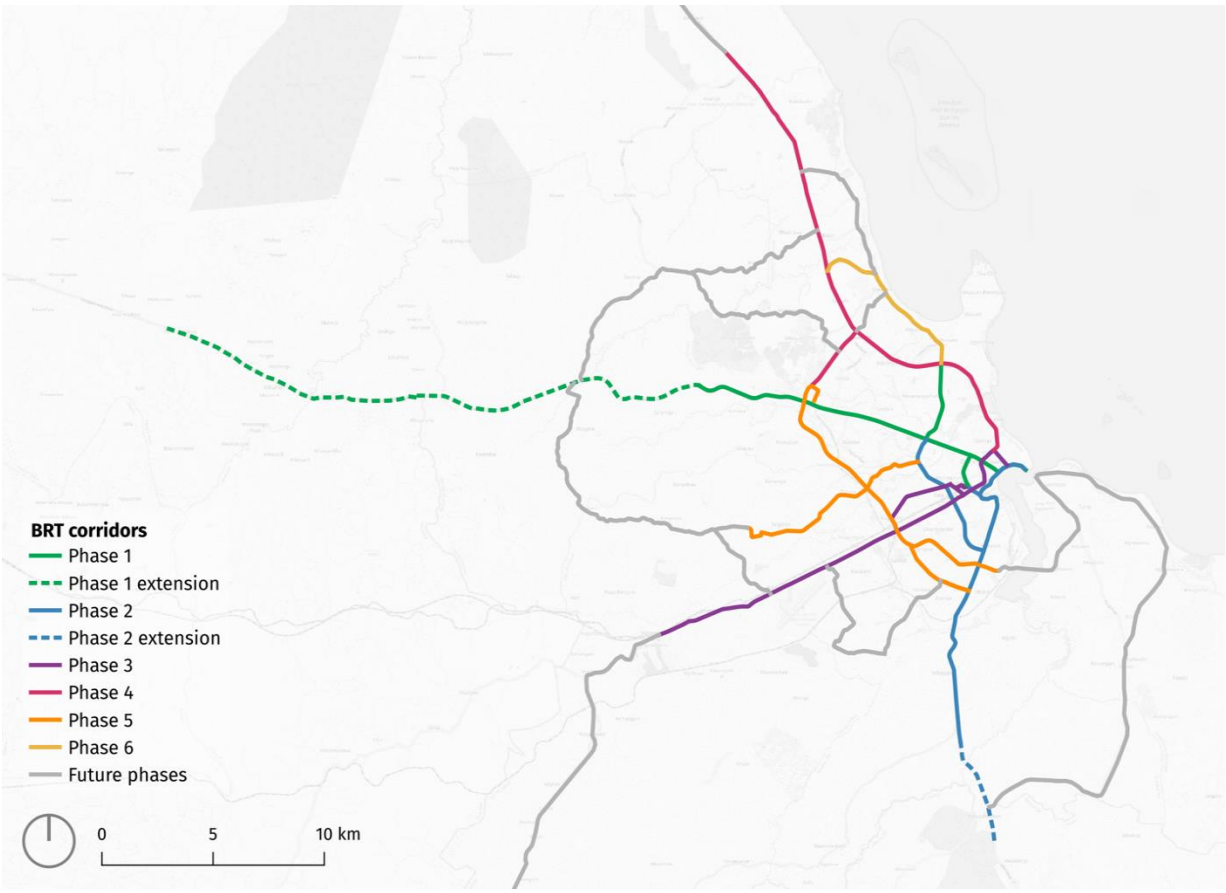


**Figure 10. DART system expansion plan (DART 2019)**

## 3.4 The status of electric mobility in Dar es Salaam

### 3.4.1 Electric three-wheelers

Three-wheelers can play a pivotal role in providing first- and last-mile connectivity to public transport (Gota, Pons, & Wagner, 2020). Many companies and projects are now deploying e-three-wheeler vehicles and corresponding charging technologies. In total, there are approximately 248 registered electric three-wheelers in Dar es Salaam per information from TRA. LATRA estimates that there are approximately 20,577 three-wheelers in total, indicating a 1.2% electrification rate of three-wheelers in Tanzania. The SOLUTIONSplus project supported the deployment of 43 e-three-wheelers in Dar es Salaam, by five different companies. These electric three-wheelers had various vehicle designs and technologies and were either retrofitted fossil-fuel three-wheelers or new electric three-wheelers. All of them were equipped with lithium-ion batteries. The project analyzed the usage patterns of the traditional internal combustion engine (ICE) three-wheelers to determine appropriate technical specifications, particularly focussing on battery capacity and the charging strategy. Additionally, the project investigated the preferences of bajaji drivers for the transition to electric bajajis (SOLUTIONSPlus, 2023).

The companies that received seed funding and technical support are Auto-Truck, DIT Company Limited, Sustainable Energy Services Company SESCOM, TRI, and Ekoglobe. The

project was conducted in two phases. The first phase, which took place between 2020 and 2024, focussed on promoting local research and development. This involved converting ICE three-wheelers to electric three-wheelers and manufacturing new electric three-wheelers using a high percentage of locally sourced materials (2020-2023). During this phase, Auto Truck and DIT Company Limited assembled two new electric three-wheelers and retrofitted one ICE three-wheeler. SESCOM retrofitted three ICE three-wheelers. The three companies received continuous technical advice on battery sizing and the retrofitting process. Additionally, DIT Company Limited has taken an incrementally larger role by hosting and providing several training sessions on the assembly, maintenance and repairs of various vehicle types for up to 45 students, staff, vehicle users, and garage mechanicians.


**Figure 11. One retrofitted ICE three-wheelers and two new e-three-wheeled prototypes by Auto Truck and DIT Company Ltd (Martin, 2024; DIT, 2023)**

**Figure 12. Three retrofitted ICE three-wheelers by SESCOM (Martin, 2024; Owigar, 2024)**

The second phase focused on expanding the fleet of electric three-wheelers through local assembly of larger fleet sizes, deployed near BRT stations (2023-2024). In this phase, UEMI selected Ziotio Company (known by the brand name TRI) and Ekoglobe.

TRI deployed 25 electric three-wheelers that are charged overnight and topped up midday charging. This initiative hasenabled drivers to increase their daily profits and lower the barriers to asset ownership. TRí is partnering with the digital platform BOLT and Watu credit to recruit drivers. The company has prioritized integrating feedback and preferences from drivers to continuously adjust the models to meet their needs.


**Figure 13. Electric three-wheelers by TRI (Sources: TRI, 2023)**

As part of SOLUTIONSplus, EKoglobe assembled 12 electric three-wheelers for passenger services and trained 12 drivers. The vehicles are operated at a bajaji waiting point close to a Bus Rapid Transit (BRT) station, where drivers use them to provide passenger feeder services to a university and residential area. The technical specifications and the route selected for the pilot are based on the 2023 SOLUTIONSplus feasibility study to electrify existing three-wheelers near BRT stations. Drivers access the vehicles on a lease-to-own basis with daily mobile money payments and battery exchange fees.


**Figure 14. Electric three-wheelers by TRI (left) and Ekoglobe (right) (Sources: TRI, 2023; Ekoglobe, 2024)**

**Table 6. Local companies supplying e-three-wheelers in Dar es Salaam as of December 2023**

| Name | Activities |
|---|---|
| AG Energies | The company has imported and assembled three electric three-wheelers and two electric two-wheelers for transporting goods. The company also offers charging solutions. |
| ZioTio Un Limited (brand TRI) | Ziotio (TRI) offers electric three-wheelers to drivers in a lease-to-own scheme. At present, TRI has deployed 53 three-wheelers including 25 under the SOLUTIONSplus project. The company has deployed charging stations at Makumbusho and DIT. |
| DIT-Auto-Truck | DIT is partnering with Kenyan company Auto Truck. The company has manufactured two electric three-wheelers and retrofitted one ICE three-wheeler. |
| Ekoglobe | In 2022, the company assembled 48 electric three-wheelers. The company is extending its activities to electric bicycles and motorcycles. |
| Ensol Tanzania Limited | Ensol is looking to deploy solar-powered battery charging swapping stations. It also aims to do a pilot project for electric three-wheeler leasing. |
| SESCOM | With support from SOLUTIONSplus, SESCOM has retrofitted three ICE three-wheelers. |
| Vievert Industries Company Limited | The company prototyping e-three-wheelers. The company plans to import three-wheeler electric conversion kits. |
| eMo Mobility | The company has imported some electric three-wheelers and e-bikes. |

As mentioned in Table 6, there are three public charging points for the three-wheelers in Dar es Salaam. ZioTio Un Limited (branded as TRI) owns two stations: one at Makumbusho and another at DIT. The third one located at Karume is owned by a private individual. In the future, DART Agency, through the SOLUTIONSplus project plans to deploy charging points for electric three-wheelers at Mloganzila, Ubungo depot, Gerezani BRT terminal and Morocco BRT terminal. Figures 15 and 16 below show the existing and future charging station locations.


**Figure 15. Charging points for electric three-wheelers (Source: ITDP, 2023)**

**Figure 16: Charging station for e-three-wheelers at DIT**

### 3.4.2 Electric motorcycles

Two-wheelers can play a pivotal role in providing first and last-mile connectivity to passengers using public transport (Gota, Pons, & Wagner, 2020). According to TRA, there are 204 registered electric motorcycles in the city. However, the Africa E-mobility Alliance estimates that there could be approximately 5,000 e-motorcycles and e-mopeds in the city, based on verbal information gathered from retailers in the Kariako market and the management of Link All Africa, a seller of electric scooters and motorcycles (Africa E-mobility Alliance, 2023). Field observations show that these vehicles are not registered.

There are several emerging companies supplying electric motorcycles, including Electric Bike Tanzania Limited, eMo Bodabodas, and Jxb E-bikes. The companies use different charging strategies, including cable plug-in charging at private locations such as homes or workplaces and battery exchanges. eMo Mobility uses battery exchange. The motorcycles are designed with a storage compartment that can hold two batteries at a time. At purchase, the motorcycle is sold with one complementary battery and the customer is required to purchase a second battery. Electric Bike Tanzania provides only one battery, and a user can charge the vehicle at a regular socket in private locations such as homes or workplaces.


**Figure 17. Electric motorcycle (Source: eMo Mobility, 2023)**


**Figure 18: Electric scooters and motorcycles for private use and deliveries (Source: Link All Africa, 2019)**

### 3.4.3 Electric cars

In Dar es Salaam, private cars are the primary contributors to road transport emissions, generating around 440 ktCO2e in 2015, a figure that is expected to rise to 600 ktCO2e by 2050 (Luo, 2020). The Dar es Salaam Transport Master Plan suggests limiting car use to reduce congestion and improve air quality (JICA, 2018). Shifting to electric cars will contribute to reduced emissions.

Dar es Salaam aims to electrify 10% of the private car fleet by 2030 and 50% by 2050 (DCC, 2020). According to TRA, the city has 68 electric cars. The College of Engineering and Technology (COET) at the University of Dar es Salaam and the National Institute of Technology (NIT) have conducted studies on electric cars. In addition, several local companies, including eMo Mobility, E-Motion, Drive Electric Company, and Knights and Apps Ltd, are importing and selling electric cars. There are a few public charging stations in operation. Knights and Apps has installed a public car charging point at Kawe, near the police station.


**Figure 19. Electric car supplied by Drive Electric (Source: ITDP)**

### 3.4.4 Pedal-assist electric bicycles.

Some emerging companies are rolling out electric bicycles in Dar es Salaam, mostly for urban deliveries. The SOLUTIONSplus project provided 16 pedal-assist electric bicycles and five extra batteries to the FASTA delivery company. Other companies include Ekoglobe, Electric Bike Tanzania Limited, Linkallafrica, and Jxb E-bikes. The SOLUTIONSplus partners also published a study for accelerating the shift to electric bicycles in Dar es Salaam and in the region.

**Figure 20. Assembly and launch of AfricroozE e-bicycles used by FASTA, a delivery cycling cooperative**

# 4 Implementation plan

## 4.1 Buses

By 2050, BRT will be the main public transport mode, with a modal share of 45 percent, followed by daladalas at 25 percent (DCC, 2020).. By 2040, DART plans to shift to fully electric buses to reduce carbon emissions (DART, 2021). Through the SOLUTIONSplus project the UN-Habitat developed the E- Mobility Policy Advice Paper for Tanzania highlighting key national policy recommendations that would help with the transition to electric vehicles To take this forward, SOLUTIONSplus recommends the adoption of the measures in Table 7.

By 2050, Bus Rapid Transit (BRT) is anticipated to be the main public transport mode in Tanzania, with a modal share of 45 percent, followed by daladalas at 25 percent (DCC, 2020). By 2040, the Dar es Salaam Rapid Transit (DART) system plans to shift to fully electric buses to reduce carbon emissions (DART, 2021). To support this transition, the UN Habitat, through the SOLUTIONSplus project, developed the E-Mobility Policy Advice Paper for Tanzania. This paper is based on a thorough analysis of the barriers to adopting electric vehicles in Tanzania and provides practical solutions to overcome these challenges. Highlighting key national policy recommendations, the paper addressed infrastructural, financial, and regulatory obstacles. To achieve this, SOLUTIONSplus recommends the adoption of the measures outlined in the table.

**Table 7. Roadmap for e-buses**

| Area | Measures | Responsibility |
|---|---|---|
| Targets | • Confirm targets to drive procurement of e-buses, especially for the DART BRT system. DART has set targets with transition expected to start between 2025-2030. The DCC adds that 20% and 80% of the buses should be e-buses by 2030 and 2050 respectively (DCC, 2020).<br>• Establish periodic monitoring and evaluation frameworks for ease of follow-up on the goals. | • DART<br>• LATRA<br>• MoE<br>• MoS (UE)<br>• MoT<br>• MoW<br>• PO-RALG |

| Area | Measures | Responsibility |
|---|---|---|
| Technical measures | • Update the Transport Master Plan to reflect the policy decision to transition to e-buses.<br>• Prepare a detailed feasibility study to introduce electric buses. The study should explore the suitable charging technology for each bus route, the energy required to power the e-buses, charging schedules for all the routes, depot layouts, and the suitable types of chargers. The study should make recommendations on battery capacity and battery safety standards.<br>• Prepare procurement and contracting guidelines to enable the shift to e-buses.<br>• Certify EV industry professionals and technicians to enhance competency in servicing and maintaining EVs. | • DART Agency<br>• MoW<br>• MoT<br>• MoE<br>• MoS (UE)<br>• MoF<br>• LATRA<br>• NGOs<br>• TBS<br>• TANESCO |
| Financial measures | • Conduct a cost-benefit analysis to understand the implications of a transition from diesel and CNG buses to electric buses. Based on this, revise timelines for the transition to e-buses.<br>• For imported e-buses, provide time bound fiscal incentives including exemptions from import duty, excise duty, and withholding tax. | • MoF<br>• DART Agency<br>• TANESCO |
| Regulatory measures | • Prepare guidelines for scrapping ICE and CNG buses.<br>• Develop a procedure for the registration of vehicles converted from internal combustion engines to EVs to ensure compliance with safety and regulatory standards.<br>• Prepare regulations for the end-of-life battery management, providing a clear regulatory framework for the second life of e-bus batteries for energy storage systems, and disposal.<br>• Introduce e-bus emissions standards with periodic inspections to ensure compliance to enable phasing out the high number of old second-hand imported buses in Tanzania that pollute the environment. | • MoE<br>• TBS<br>• MoE |

| Area | Measures | Responsibility |
|---|---|---|
| Capacity building | • Organise international peer-to-peer exchanges and study tours to city and countries around the globe having deployed electric BRT or electric bus systems for example Senegal, Rwanda, India, China, Colombia, or Chile.<br>• Organise localised training through universities such as the Dar es Salaam Institute of Technology (DIT), the National Institute of Transport (NIT) or the University of Dar es Salaam. The Universities can also develop curricula, courses, or degrees on e-mobility. The courses can cover topics such as e-bus technologies, procurement, operations, and tools to assess the impacts on GHG emissions, air pollution, and the grid. | • Universities<br>• NGOs<br>• Private sector |

## 4.2 Three-wheelers

The following are the areas of focus to accelerate the transition to electric three-wheelers.

**Table 8: Roadmap for e-three-wheelers.**

| Area | Measures | Responsibility |
|---|---|---|
| Targets | • Set targets for the transition to e-three-wheelers in Dar es Salaam.<br>• Establish targets for deploying government-funded charging infrastructure for e-three-wheelers to ensure widespread coverage. | • DRA<br>• MoS (UE)<br>• NGOs<br>• Private sector |
| Technical measures | • Collaborate with relevant stakeholders to design and integrate charging infrastructure for the e-three-wheelers in transport terminals.<br>• Establish a system for collecting data on e-three-wheelers, including ridership patterns, trip distances, and user demographics, to inform future policy decisions and infrastructure planning.<br>• Certify EV industry professionals and technicians to enhance competency in servicing and maintaining EVs. | • LGAs<br>• TBS<br>• DART Agency<br>• Financial Institutions<br>• NGOs |
| Financial measures | • Partner with microfinance institutions, asset financing institutions, and banks to offer financing options for e-three-wheelers purchases.<br>• Explore the option of financing incentives that are tied to the number of passengers who continue their journeys on the BRT system.<br>• Introduce fiscal incentives including:<br>  ○ VAT exemption<br>  ○ Import duty exemption.<br>  ○ Withholding tax exemption<br>  ○ Reduced electricity tariff during off-peak times<br>  ○ Special electricity tariff for charging facilities. | • MoF<br>• MoTI<br>• NGOs<br>• TANESCO |

| Area | Measures | Responsibility |
|---|---|---|
| Capacity building | • Develop skills and knowledge on e-mobility for start-ups that retrofit ICE to e-three-wheelers and assemble new e-three-wheelers.<br>• Establish a network of local maintenance and repair centers to ensure timely technical support and address the current difficulty in obtaining repairs. | • NGOs<br>• Universities<br>• Start-ups |

## 4.3 Bicycles

The following steps can accelerate the adoption of pedal-assist electric bicycles.

**Table 9. Roadmap for electric pedal assist bicycles**

| Measure | Description of measure | Responsibility |
|---|---|---|
| Targets | • Encourage the use of electric and non-electric pedal-assist bicycles. The target is to increase the bicycle mode share from 0.5 percent to 8 percent by 20 (DCC, 2020). | • TRA<br>• DRA<br>• NGOs<br>• Private sector |
| Infrastructure measures | • Integrate electric pedal assist bicycle infrastructure planning into urban development projects to ensure connectivity and accessibility for electric pedal assist bicycle users.<br>• Implement secure and convenient parking amenities for electric pedal assist bicycles at public transport centers, markets, and popular locations to ensure safety when not in use.<br>• Upgrade the current cycle lane infrastructure by installing adequate signposting, road paint, and traffic calming measures. The network should expand the cycle network beyond BRT lines.<br>• Implement car-free zones within the Dar es salaam city.<br>• Support the development of maintenance and repair facilities for electric bicycles, in partnership with the private sector.<br>• Assess the financial feasibility and impacts of a bikeshare system incorporating pedal-assist electric bicycles to improve last-mile access to public transport and to serve short trips. | • TANROADS<br>• DART<br>• RAS<br>• TARURA<br>• MoF<br>• MoW<br>• MoT |

| Measure | Description of measure | Responsibility |
|---|---|---|
| Regulatory measures | • Develop and implement clear regulations and guidelines specifically addressing e-bikes, including licensing, registration, and safety requirements. The regulations should clarify which e-two-wheelers are permitted to operate on Dar es Salaam's cycle network (e.g., e-bicycles with maximum speed of 25 km/h for pedal assist capabilities).<br>• Create on-street parking areas for bicycles.<br>• Ensure that new buildings include bicycle parking facilities with e-bike charging facilities.<br>• Prepare regulations for end-of-life battery management and disposal for electric pedal-assist bicycles. | • TBS<br>• LATRA |

| Measure | Description of measure | Responsibility |
|---|---|---|
| Financial measures | • Allocate funding for the development and maintenance of cycling infrastructure, including dedicated bike lanes, bike parking facilities, and charging stations.<br>• Consider providing financial support through subsidies or grants to reduce the cost of purchasing electric pedal assist bicycles, making them more accessible to individuals and businesses.<br>• Partner with microfinance institutions, asset financing institutions, and banks to offer financing options for electric pedal assist bicycles purchases.<br>• Clarify the tax situation applicable to e-bicycles, particularly concerning the new industrial license removing custom duty for locally assembled vehicles.<br>• Ensure that the following fiscal incentives cover e-bicycles:<br>  ○ VAT exemption<br>  ○ Import duty exemption.<br>  ○ Withholding tax exemption<br>  ○ Capping electricity tariff for charging facilities.<br>  ○ Introduce Time of Use tariff to have reduced electricity tariff during off-peak times | • MoF<br>• TANESCO |

| Measure | Description of measure | Responsibility |
|---|---|---|
| Public awareness and training measures | • Create an enabling environment for the adoption and scaling of electric bicycles by increasing awareness among government officials, companies, and the public about the mobility and environmental benefits of e-bicycles.<br>• Organise car-free days, workshops, and demonstrations to promote safe cycling practices, maintenance, and the benefits of e-bicycles.<br>• Collaborate with schools, universities, and community organizations to promote using electric and non-electric pedal-assist bicycles usage and educate the public about sustainable transport options.<br>• Provide regular training for cyclists on e-bicycle use, including preventative maintenance, repairs, and safe riding in various conditions.<br>• Launch training programmes for cycling, especially for women, including proper handling, traffic rules, and maintenance. | • DRA<br>• MoE<br>• MoS (UE)<br>• Development partners<br>• Media |

## 4.4 Motorcycles

Motorcycles can play a role in providing first and last-mile connectivity service to public transport routes. To facilitate the transition, the government can take the following steps.

**Table 10. Roadmap for e-motorcycles**

| Measure | Description of measure | Responsibility |
|---|---|---|
| Targets | • Set targets to transition to e-motorcycles and e-scooters. The DCC has set a target to electrify 10 percent and 50 percent of private vehicles by 2030 and 2050 respectively (DCC, 2020). | • DRA<br>• MoE<br>• NGOs<br>• PS |
| Technical measures | • Establish a system for collecting data on e-motorcycles including ridership patterns, trip distances, and user demographics, to inform future policy decisions and infrastructure planning.<br>• Prepare a study on charging infrastructure to assess the potential areas | • LGAs<br>• TBS<br>• DART Agency<br>• Financial institutions<br>• NGOs |

| Measure | Description of measure | Responsibility |
|---|---|---|
| | for charging stations for e-motorcycles in connection with public transport service. | |
| Regulatory measures | • Evaluate and standardise procedures for registering motorcycles converted from ICE to electric operation.<br>• Set standards for charging infrastructure.<br>• Update building codes to specify the fraction of off-street parking spaces that should have e-vehicle charging facilities. | • TBS<br>• TANESCO<br>• MLSSD<br>• LATRA<br>• LGAs |
| Financial measures | • Partner with microfinance institutions, asset financing institutions, and banks to offer financing options for e-motorcycle purchases.<br>• Adopt the following fiscal incentives:<br>  ○ VAT exemption<br>  ○ Import duty exemption.<br>  ○ Withholding tax exemption<br>  ○ Reduced electricity tariff during off-peak times<br>  ○ Special electricity tariff for charging facilities | • MoF<br>• NGOs |
| Capacity building | • Provide training programs for e-motorcycle users, including proper handling, traffic rules, and maintenance.<br>• Enhance knowledge of battery disposal and second-life management. | • NGOs<br>• Universities<br>• Start-ups<br>• Financial institutions |
| Public awareness | • Increase awareness among government officials, companies, and the public about the mobility and environmental benefits of e-motorcycle through events, communication campaigns, and test rides.<br>• Develop public awareness campaigns to encourage uptake of e-2Ws. | • Development partners<br>• Start-ups<br>• LGAs<br>• Media |

## 4.5 Cars

Cars are the leading cause of traffic congestion in the city. The car fleet, if electrified, will continue to cause congestion. The city should develop strategies to limit overall car use in the city. However, electric cars have environmental benefits as they emit zero tailpipe emissions. To transition to electric cars, the city should focus on the following actions.

### Table 11. Roadmap for electric cars

| Measure | Description of measure | Responsibility |
|---|---|---|
| Targets | • Encourage the use of electric cars, achieving a target of 50% of private vehicles running on electricity by 2050.<br>• Collaborate with the government to conduct a national electric vehicle demand assessment to act as a baseline for monitoring and evaluation of electric cars. | • TRA<br>• MoE<br>• MoF<br>• Private sector |
| Infrastructure measures | • Establish charging guidelines, regulations and standards for electric cars.<br>• Integrate electric car charging infrastructure into urban development projects.<br>• Encourage the private sector and investors to finance the implementation of charging facilities. | • TBS<br>• TANESCO<br>• Private sector<br>• NGOs |
| Financial measures | • Adopt the following fiscal incentives:<br>  ○ Reduced VAT<br>  ○ Reduced import duty<br>  ○ Reduced withholding tax.<br>  ○ Reduced electricity tariff for charging facilities.<br>  ○ Reduced electricity tariff during off-peak times<br>• Subsidized parking fees for electric cars. | • MoF<br>• TRA<br>• NGOs<br>• TARURA |
| Regulatory measures | • Update the building codes to specify the fraction of off-street parking spaces that should have electric car charging facilities. | • MLSSD<br>• LATRA<br>• Local authorities |

# 5 Electricity grid improvements

In Dar es Salaam, approximately 99.3 percent of residents have access to the grid (USAID, 2019). The government needs to strengthen the grid so that there is sufficient capacity to support the adoption of e-mobility. The Ministry of Energy and TANESCO should undertake the following measures:

- Undertake a study to estimate the grid capacity needed to support EV targets. Coordination with the Ministry of Energy and the Tanzania Electric Supply Company Limited (TANESCO) is paramount to planning for increased power demand. Utility agencies will need to plan how to manage the electricity grid, especially during peak hours when the power demand is higher.
- Develop guidelines for grid and charger interconnectivity for public and private charging to ensure grid stability and safety. Ensuring that any charging is done under safe conditions (e.g., legal and earthed connections for home-based charging, with a preliminary assessment by certified technicians before allowing drivers to charge at home, and clear guidelines on setting up charging infrastructure) is paramount to limit fire risks, which could have critical impacts in dense housing environments.
- Design a time of use tariff system to encourage the charging of EVs during off peak hours. The system will ensure that there is a balance between electricity utilisation and revenue generation.

# 6 Conclusion

Dar es Salaam is one of the fastest-growing cities in Africa. Transitioning to electric mobility is vital to reduce emissions, air pollution, and dependence on fuel imports. To transform Dar es Salaam into a model city for e-mobility, a comprehensive strategy centred around fiscal and regulatory reforms is vital.

By introducing incentives such as tax breaks, subsidies, and reduced import duties on electric vehicles (EVs) and their infrastructure, the government can facilitate the transition. Investment in the development and installation of charging infrastructure, particularly for public transport, is crucial. Moreover, fostering collaboration between government agencies and the private sector is essential to speed up the adoption of electric mobility. This partnership should focus on financing research, building capacity, launching public awareness campaigns, and supporting the installation of charging facilities, alongside providing loans for the procurement and manufacturing of EVs.

Additionally, encouraging the private sector to invest in the manufacturing, sale, and servicing of electric vehicles will play a pivotal role in this transition. Lastly, the electricity grid's capacity must be enhanced to keep pace with the growing demand from EVs. The government will need to upgrade existing infrastructure and invest in renewable energy sources to ensure a steady and sustainable power supply.

By focusing on these recommendations, Dar es Salaam city can transition to electric mobility, reducing emissions, improving air quality, and promoting sustainable urban development.

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# 8 Annexures

ITDP | Institute for Transportation & Development Policy

The Regional Administrative Secretary
Regional Commissioner's Office
3 Rashid Kawawa Road
PO Box 5429
Dar es Salaam, Tanzania

05 Mar 2024

**Re: Preparation of e-mobility roadmap for Dar es Salaam**

Dear Sir/Madam,

The Institute for Transportation and Development Policy (ITDP) is a non-profit organisation that works around the world to design and implement high-quality transport systems and policy solutions that make cities more liveable, equitable, and sustainable.

The Dar Rapid Transit Agency (DART) with collaboration with ITDP and the Urban Electric Mobility Initiative (UEMI) is implementing the SOLUTIONSplus project in Dar es Salaam. The project aims to accelerate the transition to electric mobility in Dar es Salaam. As part of the project, ITDP in collaboration with other SOLUTIONSplus partners is developing an e-mobility roadmap for Dar es Salaam. The report will explore ongoing e-mobility initiatives, assesses the key barriers to the adoption of e-mobility, and propose reforms to scale up the implementation of e-mobility initiatives.

ITDP would be interested in meeting with you to provide further explanation regarding the Dar es Salaam e-mobility roadmap. We propose to meet at 10:00 hours on 07 Mar 2024, subject to your availability and confirmation. We look forward to your positive response.

Regards,

Christopher Kost
Africa Program Director
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ITDP/AFRICA/2024/007

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