CTCN Technical Assistance

Request Submission Form

Guidelines:

- This Request Submission Form should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question
- The Form must be signed by the NDE. Please see updated contact list of NDEs here: http://unfccc.int/ttclear/support/national-designated-entity.html
- The Form can be submitted as a Word file containing a digital signature or as a signed and scanned PDF file in combination with an un-signed Word file
- For requests submitted by multiple countries, all the NDEs of the respective countries shall sign identical Forms before official submission to the CTCN
- NDEs have the opportunity to submit CTCN requests in collaboration with National Designated Authorities (NDAs) for the Green Climate Fund (GCF) if targeting the GCF Readiness Programme.

Requesting country or countries:	Tanzania
Request title:	Developing a national framework for deploying and scaping up E-Mobility (EM) in Tanzania
NDE	Dr. Gerald Majella Kafuku Acting Director, Centre for Development and Transfer of Technology Tanzania Commission for Science and Technology P.O. Box 4302 Dar es Salaam, Tanzania kafukugm@gmail.com, gerald.kafuku@costech.or.tz +255766604977
Request Applicant:	Tanzania Commission for Science and Technology P.O. Box 4302 Dar es Salaam, Tanzania dg@costech.or.tz Contact person: Dr. Gerald Majella Kafuku

Climate objective:

☐ Adaptation to climate change

☒ Mitigation of climate change

☐ Combination of adaptation and mitigation of climate change

Geographical scope:

☐ Community level

☐ Sub-national

☒ National

☐ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Problem statement related to climate change (up to one page):

Tanzania, as other countries, is experiencing adverse impacts of climate change and therefore needs to put in place adaptation and mitigation actions in order to safeguard development gains and achieve its development targets[1]. Large part of Tanzania population is largely dependent on unrefined biomass fuels for domestic use and on imported fossil fuels for powering their livelihoods (economic activities) and transport activities. The primary transport means for goods and people is by road. The common mode of transport in these areas are motor vehicles and motorised 2- and 3-wheeled vehicles which use fossil fuel and contribute to increased air pollution. In cities, due to rapid urban growth and growing individual motorisation, the transport system suffers from chronic congestion. In Dar es Salaam for example, which is ranked as the 3rd fastest growing city in Africa and the 9th fastest in the world, apart from the Bus Rapid Transport, public transport depends on a large fleet of privately-owned mini-buses, which are often unroadworthy and contribute to congestion and air pollution.

The National Transport Policy[2] envisions the transport sector to have efficient and cost-effective transport services to all segments of the population and sectors of the national economy with maximum safety and minimum environmental degradation. Electric-Mobility (EM) is currently recognized as a viable and attractive option that can help countries redress the adverse issues faced with conventional transportation systems. Tanzania can also leverage on e-mobility technologies to enjoy benefits such as reduced energy imports, green growth and local job creation.

In this regard, Tanzania is seeking the assistance to assist in the development of an Electric-Mobility program and its implementation framework. The assistance is in line with Tanzania's Nationally Determined Contributions which aim at promoting the use of renewable (clean) energy in transportation systems[3].

Past and on-going efforts to address the problem (up to half a page):

Tanzania has put up policies and strategies that aim at promoting the use of renewable energy technologies in various sectors of the economy. These include The National Transport Policy, The Nationally Determined Contributions, National Climate Change Strategy, The Energy Policy, The Science and Technology Policy and many more. However, there is no specific initiative or effort that directly

[1] Tanzania's high climate vulnerability in all parts of the country was confirmed through a stocktaking analysis involving all local governments as part of the National Adaptation Plan (NAP) process. https://www.adaptationcommunity.net/mainstreaming-nap/examples/tanzanianap-process/

[2] Tanzania National Transport Policy

[3] Tanzania Nationally Determined Contributions 2021

focus on e-mobility. There have been stories of individuals or local artisans who try to convert their motorcycles to use rechargeable batteries. But there are no standards, guidelines and regulations that guide them.

It is high time now that the country develops specific frameworks or similar arrangements to promote e-mobility in the transport sector.

Specific technology[4] barriers (up to one page):

Lack of detailed analysis on market and demand: There is lack of analysis on market for transport sector for promotion of e-mobility the adoption of e-mobility in local industry as well as users' needs including modes of transport they use, travel times and travel behaviours.

Lack of charging Infrastructure: There is need to put up mechanisms and supply of charging infrastructure from both grid electricity and renewable energy sources such as solar PV. There is currently neither public nor private charging stations, regulations on Access, Standards and Connection.

Lack of integrated plans: Penetration of e-mobility will need coordinated actions across the ministries, agencies, national policies and development plans which are aligned with transport sector. This will help sending a strong policy signal for market players.

High upfront cost of up-taking E-Mobility: In overcoming financial barriers and risk, the government would need a range of supporting policy incentives and concessions to mitigate market barriers.

Lack of awareness across the e-mobility value chain. There is currently limited public knowledge and understanding by the users for example information about available e-mobility options, cost of obtaining access to the use of the stations as well as fabrication designs and know how especially in conversion of two and three wheelers.

Absence of supporting structures. The Adoption of E-Mobility poses a challenge in as far as after sale services such as maintenance, repair whose skills needs to be enhanced.

Limited capacity to understand e-mobility value-chains, viable options, capacity requirements and sources of funding.

Sectors:

Please indicate the main sectors related to the request:

☐ Coastal zones	☐ Early Warning and Environmental Assessment	☐ Human Health	☒ Infrastructure and Urban planning
☐ Marine and Fisheries	☐ Water	☐ Agriculture	☐ Carbon fixation

[4] *"**any equipment, techniques, practical knowledge and skills** needed for reducing greenhouse gas emissions and adapting to climate change" (Special Report on Technology Transfer, IPCC, 2000)*

☒ Energy Efficiency	☐ Forestry	☒ Industry	☒ Renewable energy
☒ Transport	☐ Waste management		

Please add other relevant sectors:

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

☒ Communication and awareness	☒ Economics and financial decision-making	☒ Governance and planning	☐ Community based
☐ Disaster risk reduction	☐ Ecosystems and biodiversity	☒ Gender	

Technical assistance requested (up to one page):

1. Overall objective

The overall objective of the TA is to develop national E-mobility program and its implementation framework for deployment and scaling-up of Electric transportation systems. The project proposal will cover benchmark analysis of international policy in E-mobility as well as national market readiness and cost assessment for uptake. The policy and the implementation framework will be developed with technology roadmap, suitable investment plans; detailed feasibility study for the selected interventions and capacity development of the relevant stakeholders. Financing models and streams of finances will be identified.

2. Anticipated groups of activities to be performed by the technical assistance

The anticipated group of activities and sub activities are as following:

I. Assessment of the market readiness to deploy Electric transportation systems and draft the E-mobility framework

a) Conduct baseline analysis, collect data on registered and unregistered (informal) modes of transport;
b) Map out stakeholders in E-Mobility value chain ranging from fabricators, artisans, part suppliers, consumers and anyone related;
c) Draft policy objectives, quantitative and qualitative targets on E-Mobility program, related infrastructure and designated roles and responsibilities;
d) Identify barriers and suggest viable instruments (incentives on electric vehicles, converted 2- and 3-wheelers, manufacturers, charging infrastructure and battery swapping stations)

II. Conduct policy review to recommend the implementation roadmap for deployment and upscaling of the Electric-Mobility and supporting charging infrastructure on the basis of local context and develop a framework.

a) Consolidate and review transport plans and policies to recommend/develop the action plans relevant to EM implementation. The implementation framework will be categorized under

short-, mid- and long-term action plans;

b) Recommend suitable business models and investment plans to implement the actions based on blended approach of integrating international experiences and local context gathered based on market assessment.
c) Review the institutional arrangements and capacity gaps to implement the roadmap

III. Conduct detailed feasibility study on selected action plans to develop business case on procuring and deploying electric vehicles and charging infrastructure

The action plan(s) for detailed feasibility study will be selected based on their assessed investment size and horizon that can be accommodated in the preparatory fund support.

a) Conduct detailed technical and financial feasibility analysis of selected action plan(s) with scalable business model. The feasibility will be carried out for the EM as well as the supporting charging infrastructure.
b) Develop technical specifications to support the tendering and procurement of the electric vehicles and charging infrastructure.
c) Develop guiding technical specifications to support the conversion of existing 2-and 3-wheelers to use electricity.

IV. Conduct capacity building and awareness of relevant stakeholders from government and EM value chain

a) Brief factsheets on the basics of EM and its impact will be developed for general public awareness
b) The experiences from business case will be archived in form of reference manual for the relevant stakeholders
c) Conduct experience sharing and capacity building workshop focussing on the possible solutions to overcome the barriers in EM deployment like cost optimization of the EM, battery management, grid integration of EM etc.

V. Prepare a GCF concept note for financing the uptake of EM.

A GCF concept note will be prepared to seek financing of the proposed interventions for purpose of technology development, piloting and transfer.

3. Anticipated outputs to be delivered by the technical assistance.

a) Report on the draft of national policy for Tanzania including market assessment and gap analysis on E-mobility
b) Report on implementation roadmap with business models and investment plans
c) Feasibility study, tender specification documents and report on business case
d) Specifications to support the conversion of existing 2-and 3-wheelers to use electricity.
e) EM factsheets and workshop reports
f) E-mobility policy and implementation framework
g) Draft GCF concept note

Expected timeframe:

The duration of CTCN technical assistance is 12 months.

Anticipated gender and other co-benefits from the technical assistance:

Transportation networks are one of the most important elements of a country's infrastructure, giving access to resources and basic infrastructure in particular for rural population. In low-income countries, gender differences in mobility needs are very pronounced, requiring gender sensitive policy responses.

In many countries, women are highly under-represented in decision-making with majority of the transport sector being managed and operated by men. A disruptive market change to cleaner and more efficient transport technologies (Electric Mobility) presents an opportunity to address this unequal distribution by increasing women's participation in the transport sector and provide socio-economic opportunities in new businesses and business models as drivers, charging solution providers, fleet operators etc. This transition will also contribute to reducing the negative public health implications from motorized transport equipment for women and children, which are more vulnerable to the impact of air pollution than men.

In ensuring gender inclusion the program will further prioritize female entrepreneurs as actors on the supply chain by:

a) Inclusion of women in value chains
b) Development of women entrepreneurship, leadership & women-friendly working cultures
c) Promotion of women's economic empowerment through productive use
d) Increase of access to energy finance for women (entrepreneurs and end users)
e) Development of women's networks

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
National Designated Entity	Tanzania Commission for Science and Technology Program coordinator, Dr. Gerald Kafuku
Request Applicant	Tanzania Commission for Science and Technology Program coordinator, Dr. Gerald Kafuku
Tanzania Renewable Energy Association (TAREA)	Advocacy, awareness, and program partner
ELICO Foundation	Technology development and demonstration, program partner.
Ministry of Works, Transport and Communications	Specify EM types, models and other options that will be introduced
Ministry of Finance and Planning	Support the incentives for developing infrastructure for charging and battery replacement. Develop and support fiscal policies on EM
Universities and technical institutions	Research, design and fabrication
Vice President's Office, Division of Environment	National Designated Authority Link the EM targets and plans to the national plans and priorities
Tanzania Police Force, Road safety unit, vehicle inspectors.	Give permissions to EM equipment
National Institute of Transport	Roadworthy testing and certification of EM equipment
Ministry of Energy	Promotion of use of renewable energy technologies in the Transport

	sector

Alignment with national priorities (up to 2000 characters including spaces):

Please describe how the technical assistance is consistent with national climate priorities such as: Nationally Determined Contribution, national development plans, poverty reduction plans, technology needs assessments, Low Emission Development Strategies, Nationally Appropriate Mitigation Actions, Technology Action Plans, National Adaptation Plans, sectorial strategies and plans, etc.

National Transport Policy 2003:
The project will contribute to realization of the policy objective which is to have efficient and cost-effective domestic and international transport services to all segments of the population and sectors of the national economy with maximum safety and minimum environmental degradation.

Tanzania National Energy Policy 2015:
The project will contribute to realization of the main objective of the national energy policy which is to provide guidance for sustainable development and utilization of energy resources to ensure optimal benefits to Tanzanians and contribute towards transformation of the national economy.

Nationally Determined Contributions 2021:
The project will contribute in

a) Promoting low emission transport systems through deployment of mass rapid transport system and investments in rail, maritime and road infrastructures, including high quality transport system and expansion/scaling up of BRT infrastructures.
b) Promoting the use of renewable (clean) energy in transportation systems.
c) Introduction and promotion of Non-Motorized Transport system and facilities and networks in both mega cities and metropolitan cities by 2030.

Reference document (please include date of document)	**Extract** (please include chapter, page number, etc.).
Nationally Determined Contribution (NDC)	Section 4.2, page 18
Add others here as relevant	National Energy Policy, 2015 National Transport Policy, 2003

Development of the request (up to 2000 characters including spaces):

The request was developed in a consultative way with project partners and key players including the responsible Ministries and agencies as well as consulting the key national documents.
The requested was drafted by the NDE in support with the two mentioned project partners, i.e. TAREA and ELICO Foundation.

Background documents and other information relevant for the request:

The request has not been developed with the support of the CTCN request incubator.

Other information and background documents include:

a) Nationally Determined Contributions, 2021
b) National Energy Policy, 2015

c) National Climate Change Response Strategy 2021-2026

a) National Transport Policy, 2003
b) The National Vision 2025
c) The Long-Term Perspective Plan (2010-2025)
d) Science and Technology Policy, 1996
e) Technology Needs Assessment Report: Climate Change Mitigation, 2016

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The CTCN is collaborating with the GCF in order to facilitate access to environmentally sound technologies that address climate change and its effects, including through the provision of readiness and preparatory support delivered directly to countries through their GCF NDA. These actions are in line with the guidance of the GCF Board (Decision B.14/02) and the UNFCCC, particularly paragraphs 4 and 7 of 14/CP.22 that addresses Linkages between the Technology and the Financial Mechanisms[5].

The CTCN is therefore implementing some of its technical assistance using GCF readiness funds accessed via the country's NDA. Any application for GCF support, including the amount of support provided, is subject to the terms and conditions of the GCF and should be developed in conjunction with the NDA.

Please indicate whether this request has been identified as preliminarily eligible by the NDA to be considered for readiness support from the GCF.

☐ Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.

☐ Advanced engagement (preferred): The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name:

Date:

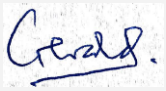
Signature:

Monitoring and impact of the assistance:

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures.
I understand that, after the completion of the requested assistance, I shall support CTCN efforts to

[5] Please see:
https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:	
NDE name:	Dr. Gerald Majella Kafuku
Date:	December 19th, 2021
Signature:	

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

The CTCN is available to answer all questions and provide guidance on the application process.