

<b>Requesting country or countries:</b>	Zimbabwe
<b>Request title:</b>	Developing a national framework for deploying and scaling up E-mobility in Zimbabwe
<b>NDE</b>	<p>Mr. Elisha N. Moyo            Position: Principal Climate Change Researcher, Climate Change Management Department;            Email: <a href="mailto:enmoyo@gmail.com">enmoyo@gmail.com</a>, <a href="mailto:moyo_elisha_n@yahoo.co.uk">moyo_elisha_n@yahoo.co.uk</a>            Tel: +263 4 701681/3            Full Office address: Climate change Management Department, 11th Floor Kaguvi Building; Corner Central Avenue/Fourth Street; Harare; Zimbabwe</p>
<b>Request Applicants:</b>	<p>Mr. Washington Zhakata            Ministry of Environment, Climate, Tourism and Hospitality Industry            Position: Director. Climate Change Management Department  <a href="mailto:washingtonzhakata@gmail.com">washingtonzhakata@gmail.com</a> , <a href="mailto:climatechange@environment.gov.zw">climatechange@environment.gov.zw</a>            Tel: +263 4 701 681            11th Floor, Kaguvi Government Building            Cnr 4th Street/Central Avenue, Harare, Zimbabwe</p> <p>Sosten Ziuku (Ph.D)            Director: Energy Conservation and Renewable Energy            Ministry of Energy and Power Development,            Cnr Speke Ave / Inez Terrace,            P. Bag 7758, Causeway, Harare, Zimbabwe            Tel: +263(4) 703320/2 gsm: +263779 774 546            email: <a href="mailto:sostenziuku@gmail.com">sostenziuku@gmail.com</a> / <a href="mailto:sostenz@yahoo.com">sostenz@yahoo.com</a></p>

**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):**

Globally, the number of motorised vehicles is estimated to reach between 2 and 3 billion vehicles by 2050 with a significant number located in developing countries like Zimbabwe. Zimbabwe's motor vehicle fleet has been growing at a fast rate especially after the year 1990. Statistics from Zimbabwe National Road Administration (ZINARA) shows that between 1994 and 1999, vehicle ownership increased by 57 percent between 2014 and 2016 and the figure increased from 800 000 to 1 200 000. The Zimbabwe Climate Change Response Strategy further identified that the nations transport sector consumes over 1 billion litres of diesel and over 730 million litres of petrol annually. Part of the energy emissions come from the use of petroleum products in the transport sector.

The Draft Low Emissions Development Strategy (LEDS) further paints a bleak outlook in terms of the nation's transportation sector looking into the year 2050. It is projected that the decades of economic growth resulting in the nations GDP increasing from 19.6 billion USD in 2020 to 119.1 billion USD by 2050 (a seven-fold increase) will see a corresponding increase in vehicles on the nation's roads. Motor vehicles are expected to increase from 1.5 million as of 2016 to around 3.5 million by 2050, with passenger vehicles (or light duty vehicles, LDVs) accounting for the large majority (LEDS, 2020). The increase in road vehicles will raise the amount of emissions from around 2.3 million tCO<sub>2e</sub> in 2015 to almost 5.3 million tCO<sub>2e</sub> by 2050.

Electric-Mobility (EM) is globally recognized as a viable and attractive option that can help the country redress the adverse issues faced with conventional transportation system. In light of the significant contribution of the Zimbabwe transportation sector to the nations Greenhouse Gas (GHG) emissions, the adoption of eclectic mobility as a substitute for fossil fuel vehicles was noted to deliver significant cost-effective GHG reductions. (LEDS, 2020). The shift also has the potential to offer important co-benefits such as reduced energy imports, green growth and local job creation. Zimbabwe has also discovered large deposits of lithium which could be useful in e-mobility thus reducing emissions and also increasing adaptation through increased incomes from the proceeds of the mining

It is on this note that the Government of Zimbabwe is seeking the assistance of the Climate Technology Centre and Network to assist in the development of an Electric-Mobility and implementation framework for the nation. The framework is integral in the countries efforts to mitigate its GHG emissions within the revised Nationally Determined Contributions that are envisaged to be economy wide.

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

Zimbabwe in 2015 submitted its Intended Nationally Determined Contributions that aimed at 33% reduction below the projected Business-As-Usual energy emissions per capita by 2030. The transportation sector accounted within the Zimbabwe energy sector was identified as an area upon which emission reduction could emanate through the reviewal of the nation's transportation system.

National Transport Policy also identified the need for the promotion of national social, political and economic development. The policy calls for the investment in non-polluting transport mechanism. 'Green' mechanisms that the policy identifies include cycling, walking and embracing renewable energy powered vehicles.

The National Climate Change Response Strategy recognises the undoubted role that motor vehicles play to the nation's development. The strategy recommends the need for the adoption of environmental sustainability and low carbon emitting vehicles as basis upon which the country's climate commitments and environmental rights can be realised.

Zimbabwe has recently developed the Low Emissions Development Strategy building upon the Zimbabwe NDC Implementation Framework and the Zimbabwe Third National Communication. It is based on the government's economic planning up to 2050 and covers mitigation measures across the four key sectors of Energy, Industrial

Processes and Product Use (IPPU), Agriculture, Forestry and Other Land Use (AFOLU) and Waste. The strategy identifies the need to reduce gasoline and diesel demand by Internal Combustion Engines (ICE) vehicles through promoting the uptake of electric and hydrogen vehicles.

The Ministry of Energy and Power Development is also currently piloting the use of EVs in Zimbabwe and the Zimbabwe Energy Regulatory Authority is procuring a demonstration vehicle and promoting setting up of charging infrastructure. Concurrently, private sector participants such as Econet and Mobility for Africa have deployed electric tricycles for use in urban and rural setups. In addition, ZERA is developing EV regulations and standards for charging infrastructure. This multi-sectoral entry into the electric vehicle space thus creates the need to ensure a coordinated approach in deploying EVs through a policy document.

**Specific technology<sup>1</sup> barriers (up to one page):**

1. Lack of detailed analysis on market and demand: There is lack of analysis on market for transport sector. In order to promote the adoption of EM in Zimbabwe, there needs to be more detailed analysis in local industry as well as users' needs including modes of transport they use, travel times and travel behaviours.
2. Unreliable Energy supply: The penetration of EM should be based on reliable electricity supply. Although it is improving, the electricity supply is not very reliable due to persistent load shedding. Emphasis is on supply charging infrastructure from renewable energy sources such as solar PV. A number of service stations in Zimbabwe are solarising in readiness for charging infrastructure.
3. Lack of integrated plan for E-Mobility: As the penetration of EM's would need coordinated actions across the ministries, national energy policy and development policy should be aligned with transport sector to send the strong policy signal for market players.
4. 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.
5. Lack of awareness across the EV value chain. There is currently limited public knowledge and understanding by the users for example information about available EM options, cost of obtaining access to the use of the station.
6. 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.
7. Absence of Public Charging Stations, regulations on Access, Standards and Connection. Currently, there are no requirements on operators of public charging stations in connection with Technical performance standards, maintenance and availability of public charging stations; The components of public charging stations and co-operation of service providers which is necessary in rolling out E-Mobility.
8. Limited capacity to understand e-mobility value-chains, viable options, capacity requirements and sources of funding.

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<sup>1</sup> ***“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)***

**Sectors:**

Please indicate the main sectors related to the request:

- |   |   |  |   |
|---|---|--|---|
| <input type="checkbox"/> Coastal zones                | <input type="checkbox"/> Early Warning and Environmental Assessment | <input type="checkbox"/> Human Health        | <input checked="" type="checkbox"/> Infrastructure and Urban planning |
| <input type="checkbox"/> Marine and Fisheries         | <input type="checkbox"/> Water                                      | <input type="checkbox"/> Agriculture         | <input type="checkbox"/> Carbon fixation                              |
| <input checked="" type="checkbox"/> Energy Efficiency | <input type="checkbox"/> Forestry                                   | <input checked="" type="checkbox"/> Industry | <input checked="" type="checkbox"/> Renewable energy                  |
| <input checked="" type="checkbox"/> Transport         | <input type="checkbox"/> Waste management                           |  |   |

Please add other relevant sectors:

**Cross-sectoral enablers and approaches:**

Please indicate the main cross-sectoral enablers and approaches

- |   |   |   |  |
|---|---|---|--|
| <input checked="" type="checkbox"/> Communication and awareness | <input checked="" type="checkbox"/> Economics and financial decision-making | <input checked="" type="checkbox"/> Governance and planning | <input type="checkbox"/> Community based |
| <input type="checkbox"/> Disaster risk reduction                | <input type="checkbox"/> Ecosystems and biodiversity                        | <input checked="" type="checkbox"/> Gender                  |  |

**Technical assistance requested (up to one page):**

Within a clearly defined scope, the description of technical assistance should be structured into the following:

**1. Overall objective**

The overall objective of the TA is to develop national E-mobility and implementation framework for Zimbabwe 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:

**1. *Assessment of the market readiness to deploy Electric transportation systems in Zimbabwe and draft the E-mobility framework***

- a. Conduct the baseline analysis, collect data on registered and unregistered(informal) modes of transport;

- b. Map out stakeholders in the E-Mobility value chain ranging from automobile manufacturers, part suppliers and the consumers;
- c. Draft the policy objectives, quantitative targets on the number of E-Mobility, charging infrastructure and designated roles and responsibilities;
- d. Identify barriers and suggest viable instruments (incentives on cars, buses, trucks, manufacturerers, 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 accomodated 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.

**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.

**3. Anticipated products to be delivered by the technical assistance.**

- i. Report on the draft of national policy for Zimbabwe including market assessment and gap analysis on E-mobility
- ii. Report on implementation roadmap with business models and investment plans
- iii. Feasibility study, tender specification documents and report on business case
- iv. EM factsheets and workshop reports
- v. E-mobility policy and implimentation framework

**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 vehicles for women and children, which are more vulnerable to the impact of air pollution than men.

**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.).

<b>Stakeholders</b>	<b>Role to support the implementation of the technical assistance</b>
National Designated Entity	Elisha Moyo, Climate Change Management Department
Request Applicant (s)	Washington Zhakata, Climate Change Management Department; Sosten Ziuku (Ph.D), Energy Conservation and Renewable Energy Department
Specify EM types, models and other options that will be introduced	Ministries of Transport and of Energy
Support the incentives for developing infrastructure for charging and battery replacement.	Ministry of Finance and Economic Development, Ministry of Transport, Ministry of Mines
Academic research and development	Engineering Council of Zimbabwe, Research Institutions and Universities
Link the EV targets plans to the national plans and priorities	Climate Change Management Department

Fiscal policy to support EV like tax	Ministry of Finance
R&D and manufacturing of EV	Ministry of Energy (Power Division), ZERA, Climate Change Management Department, Universities and Research Institutions
Address the range-anxiety problem and develop a detailed EV charging infrastructure plan. Implement plans identifying future charging locations across the country.	MoTID, Ministry of Energy, Local Authorities, ZERA, UNEP, UNDP
Engage and facilitate various international stakeholders in the EV value chain to obtain related technologies from various partner countries.	Ministry of Higher Education, Science and Technology, Ministry of Foreign Affairs, Climate Change Management Department, SIRDC, UNEP, UNDP
Provincial regulations on EV	Provincial Governments/ Development Authorities, Local Authorities
Financial support	Banking Sector
Specification for smart metering and charging	Ministry of Energy, ZETDC, ZERA
Smart metering, charging and grid integration at LV levels	Ministry of Energy, ZETDC, ZERA
Policy on EV tariffs	Ministries of Energy, Environment, Finance and Transport
Testing and Standardization on EV specifications and components	Ministry of Energy, Ministry of Transport and Infrastructural Development
Please add as many stakeholders and lines as required.	Department of Roads Vehicle Inspection Department Local Authorities Ministry of Industry and Commerce

**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.

This request is aligned with the National Climate Policy, Constitution of Zimbabwe, the National Climate Change Response Strategy, the NDCs and the LEDS. It also links to sectoral plans such as Transport and



Energy efficiencies among others.

<b>Reference document</b> (please include date of document)	Extract (please include chapter, page number, etc.).  Low Emission Development Strategy (2020). Renewable Energy Policy (2019). Biofuels Policy (2019). Zimbabwe's Indented Nationally Determined Contribution (2015). National Climate Change Response Strategy (2014). Climate Zimbabwe's Climate Policy (2017). National Transport Policy (2012).
Nationally Determined Contribution (NDC)	The NDC emphasize the need for Reviewing the Transport Sector as one of the strategies to achieve the 33% reduction in emissions Reviewing the Transport system
Technology Needs Assessment	Transport sector prioritized in INDC with an emphasis on road transportation as the major contributor of GHG emission. Though the electric vehicles are not mentioned but the technologies like Hybrid vehicles are shortlisted as priority technologies in TNA
National Adaptation Plans	In the process of being developed
Nationally Appropriate Mitigation Actions	Not prepared
Add others here as relevant	

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

Please describe how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles?) and describe any consultations or other meetings that took place to develop and select this request, etc.

The request was developed in a consultative way where several key players including the responsible Ministries (Energy, Transport and Climate) as well as Local Government which manages local authorities. Private sector institutions, UN Agencies, Standardization

**Background documents and other information relevant for the request:**

Low Emission Development Strategy (2020).  
Renewable Energy Policy (2019).  
Biofuels Policy (2019).  
Zimbabwe's Indented Nationally Determined Contribution (2015).  
National Climate Change Response Strategy (2014).  
Climate Zimbabwe's Climate Policy (2017).  
National Transport Policy (2012).

**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<sup>2</sup>. 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 measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

**Signature:**

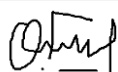
NDE name:

Elisha N MOYO

Date:

17 March, 2020

Signature:



**THE COMPLETED FORM SHALL BE SENT TO THE [CTCN@UNEP.ORG](mailto:CTCN@UNEP.ORG)**

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

<sup>2</sup> Please see:

[https://unfccc.int/files/meetings/marrakech\\_nov\\_2016/application/pdf/auv\\_cop22\\_i8b\\_tm\\_fm.pdf](https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf)