

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:	Lesotho
Request title:	Leapfrogging Lesotho's market to energy-efficient refrigerators and distribution transformers
NDE	Mr. Lefa Thamae Ministry of Communications, Science and Technology, Department of Science and Technology Phone: +266 58864957, +266 62864957, +266 22323763 Emails: lefathamae@gmail.com
Request Applicant:	Mr Jerry Seithleko (Acting Director of Energy Department) Old Agric Bank Building, Kingsway Maseru. Email Address: seithlekojerry@gmail.com , Cell phone +266 63066760

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):

Just over one fifth of households in Lesotho have access electricity, where it is used primarily for lighting, biomass being readily available for other uses. The adoption of energy efficient technologies beyond lighting has consequently been low in Lesotho to date, where the focus in the residential sector is on first expanding access to electricity. Opportunities for adoption of efficient products has been limited due to a range of reasons that include high levels of poverty and cultural factors, particularly in rural areas. The design and construction of efficient buildings has been impacted by the limited existence and enforcement of regulations and an informal property market.

Power sector challenges, such as electrification and the urgent need of system maintenance means that energy efficiency is a lower priority for the National Designated Entities (NDEs) in Lesotho. More pressing are such basic issues as expanding access to electricity and improving food, water and housing conditions.

Due to high levels of poverty in Lesotho and the Southern African region in general, the equipment markets are extremely price sensitive, with few being able to afford the initial cost of equipment at all, let alone the incrementally higher cost of most energy efficient product options. Energy efficient products typically come at a higher first cost and any additional costs have large impacts on short term cashflows. The concept of lower operating and maintenance costs which can result in attractive payback rates is not widely promoted nor relevant due to limited capital for investment.

Africa constitutes less than 5% of all global electricity consumption. While there is significant growth potential, the expansion of the regional power sector, electrification and appliance and equipment markets are hampered by the number of independent countries with their own policies, regulations and economies, and by persistently high levels of poverty across much of the region. Research shows that appliance and equipment manufacturers are therefore understandably cautious in spending time and resources to invest in producing and shipping high-efficiency products to the African market, which impacts availability to specific countries. In the absence of regional standards or harmonized policies to encourage energy efficiency, there is the potential for lower efficiency lower cost units to dominate the markets in countries like Lesotho, where first cost is the market driver.

Lesotho's energy policy articulates efficiency goals at a very high level, whereas regulations designed to realize the goals are lacking, and there is scant evidence – short of the application of South African standards for some equipment plus a limited effort at promoting high efficiency lighting – that promotes the technologies of interest to this study. Government is rather focused on fulfilling the more basic needs of the population and improving the quality and availability of power in the energy sector. Departments responsible for trade, energy and economic indicators do not appear to devote resources to the capture and maintenance of detailed data on electric equipment at more than highly aggregated levels.

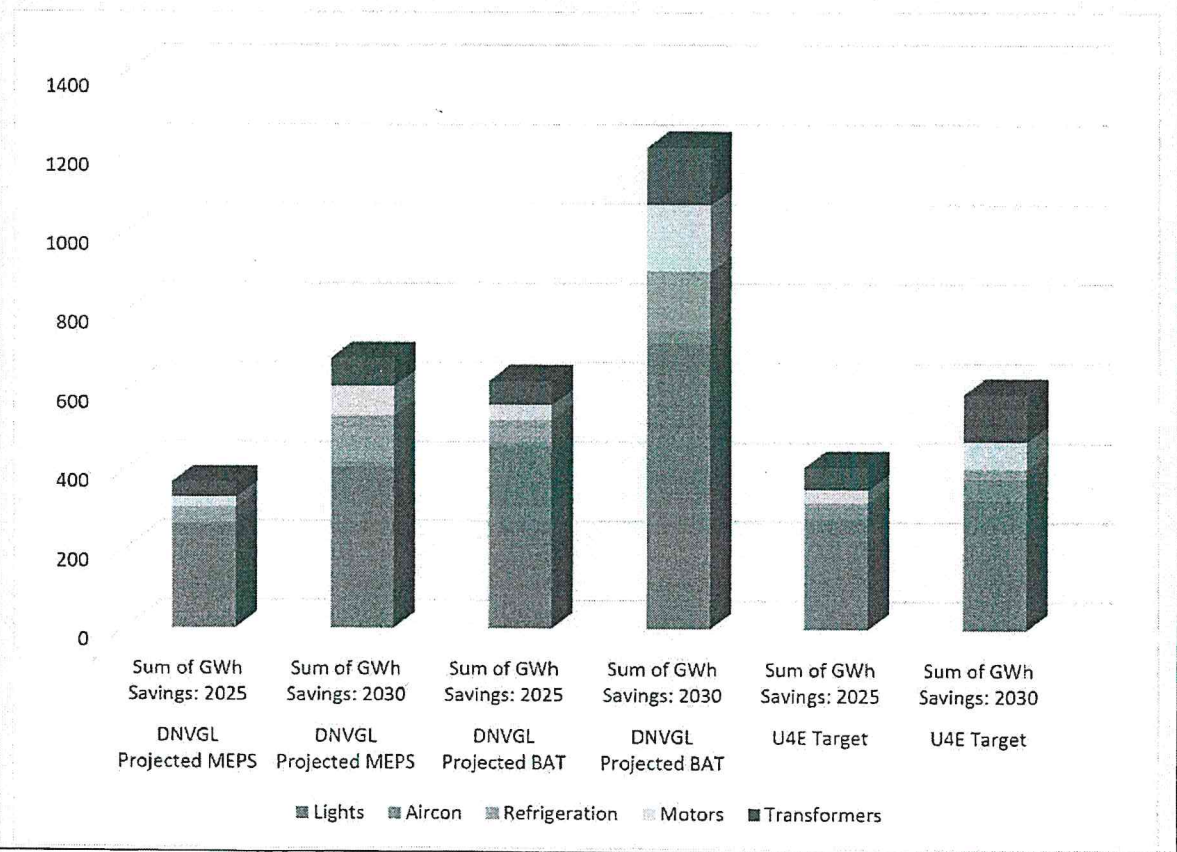
Despite the limitations and context that it faces, Lesotho has much to gain by adopting energy efficiency standards, regulations and technologies to ensure that, as it expands access to electricity,

usage can be guided to be as efficient and therefore affordable as possible. Ideally, such regulations and market levers would be harmonized with that of the larger Southern African region so as to have maximum impact on the technology market.

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

Lesotho is a member of the Southern African Power Pool (SAPP), which began in 1996 as the first formal international power pool in Africa with a mission to provide reliable and economical electricity supply to consumers in SAPP member countries. Lesotho also joined the International Renewable Energy Agency (IRENA) - a global initiative to promote and reduce barriers to the uptake of renewable energy.

Lesotho with 9 other SADC countries benefitted from CTCN Technical Assistance: Through this TA CTCN developed detailed country assessments for the five priority products (i.e. lighting, refrigerators, air conditioners, electric motors and distribution transformers). This assistance was required in order to more accurately define the current situation and the future objectives for climate-related policy actions. Each country report contains information on the status/trends of energy-efficient products, status of policies and potential savings of energy efficient products. The overall savings potentially yielded by the adoption of MEPS and BAT are as illustrated below;



Specific technology¹ barriers (up to one page):

This section should answer the questions “what are the technology barriers that hinder national efforts described above” and “how will the CTCN technical assistance complement these efforts?” Building upon the problem statement and taking into consideration the existing efforts described above, please describe the specific technology barriers encountered by the requesting applicant to identify, assess or deploy climate technology(is) in an effort to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).

The entire African continent consumes less than 5% of all electricity globally. Therefore, it is understandable that manufacturers have little interest in spending time and resources to invest into, let alone track the African market, and even less so if you look at specific countries.

markets are extremely price sensitive. Energy efficient products such as those being investigated through this TA typically come at a premium cost over standard models, and any additional costs have large impacts on short term cashflows. This TA therefore investigates technology approach that Lesotho can address throughout the country through the assessment of the refrigerators and transformers.

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 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 type="checkbox"/> Energy Efficiency | <input type="checkbox"/> Forestry | <input type="checkbox"/> Industry | <input type="checkbox"/> Renewable energy |
| <input 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 type="checkbox"/> Communication and awareness | <input type="checkbox"/> Economics and financial decision-making | <input type="checkbox"/> Governance and planning | <input type="checkbox"/> Community based |
| <input type="checkbox"/> Disaster risk reduction | <input type="checkbox"/> Ecosystems and biodiversity | <input type="checkbox"/> Gender | |

Technical assistance requested (up to one page):

In coordination with similar CTCN projects in neighbouring countries, will assess the potential for increasing the energy efficiency of products in Lesotho by providing a technical market assessment of current conditions and policies. This targets specific product categories: refrigerators and transformers

The specific objectives of this technical assistance are to:

- Validate the data collected by the CTCN from stakeholders (e.g. manufacturers, retailers, suppliers, utilities) on the existing initiatives and use of refrigerators and distribution transformers.
- Undertake detailed market assessments and feasibility of implementation of technologies with highest efficiency.
- Develop a technology roadmap and action plan for promoting and adoption of efficient appliance in the country.
- Propose draft minimum energy performance standards (MEPS) and labelling for refrigerators (building off the United for Efficiency Model Regulations) and procurement specifications for distribution transformers.
- Assist decision makers and stakeholders to put the draft MEPS for refrigerators and procurement specifications for distribution transformers into practice.
- Gather information on financing lines and business models for financing energy-efficient refrigerators and/or distribution transformers.
- Develop proposal for financial/market-based mechanism on energy-efficient refrigerators and/or distribution transformers.

Expected timeframe:

18 months

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

Please describe the activities with gender linkages as well as the anticipated gender and other co-

benefits (e.g. biodiversity, economic, social, cultural, etc.) that are likely to be generated as a result of the technical assistance.

The gender gap in access to inheritance and property rights, finance and information can limit the capacity of women home and business owners to invest in energy-efficient appliances. Energy use in the home may also be reduced by about 20 per cent through changes in behaviour. Women and men respond differently to policies encouraging behavioural changes. The success of these policies will depend heavily on how they affect the workload and well-being of both women and men. Energy efficiency policies and investment will be designed based on a gender-differentiated understanding of opportunities and constraints to optimize their social and climate impact.

The project will provide gender and other co-benefits, such as energy-efficient and higher quality refrigerators allowing users to save funds for other economic opportunities, reducing food waste from spoiled foods and providing increased economic opportunities by increasing the ability to store food instead of frequent trips to the market. In addition, distribution transformers and other energy-efficient products will result in reduced demand on the electricity grid provide more stable electricity distribution and economic opportunities for the entire population.

For more information you can find guidelines on the CTCN's website here:

<https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development>

Further reading on gender can be found on the CTCN website here:

<https://www.ctc-n.org/technology-sectors/gender>

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	The NDE will coordinate and support in getting the commitment and participation of the relevant stakeholders within the process and also in exchanging of best practices regionally.
Request Applicant	Department of Energy
Please add as many stakeholders and lines as required.	
<ul style="list-style-type: none">• Department of Energy• Lesotho Electricity Generation	These are key agencies responsible for energy policies

<p>Authority (LEGA)</p> <ul style="list-style-type: none"> • Lesotho Electricity Company (LEC) • Lesotho Electrification Unit (LEU) • Ministry of Forestry and Land Reclamation • Ministry of Energy, Meteorology • Department of Science and Technology • Lesotho Meteorological Services • Department of Environment • Faculty of Science and Technology 	<p>They take the lead on the project development as a Project Proponent. Particularly in developing the national strategies and development of minimum energy performance standards and labelling.</p>
<p>Lesotho Electricity Authority (LEA)</p>	<p>This is the main Energy regulators in Lesotho and will contribute reviewing draft regulations and specifications that could be used within their existing demand side management programs in order to incentivize the purchase of energy-efficient products. In addition, utilities are the primary owner of distribution transformers.</p>
<ul style="list-style-type: none"> • Lesotho Electricity Corporation (LEC) 	<p>Main entity in the electricity market will help in formulation regulation on energy efficient products</p>

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.

Lesotho Nationally Determined Contribution to the United Nations Framework Convention on Climate Change's (UNFCCC's) Paris Agreement aims to adopt a low carbon development. The NDC intends to reduce GHGs emission by 10% by 2030 unconditionally. This will contribute to climate change abatement by implementing mitigation activities where energy sector is among the key target.

The National Strategic Development Plan 2012/13–2016/17 acknowledges the importance of enhancing Lesotho's electricity generation capacity so as to cater for the energy needs of the productive sector, specifically for the mines that are currently not connected to the national grid. The draft energy policy also highlights the important role played by energy in job creation and establishing Lesotho's economic competitiveness.

The Lesotho Energy Policy does not set specific targets for access, capacity, generation and energy security. However, the Lesotho Vision 2020 sets targets for electricity access to 35% by 2015 and 40% by 2020 as well as reducing fuelwood usage in the national energy consumption. The National Policy 2015-2025 is the sector guideline and it envisions the development of the renewable energy sector. The Energy Efficiency (EE) program includes information for dissemination on EE for residential and transport sectors, development of Energy Efficiency guidelines for industry, commercial and residential sectors, power factor correction and dissemination of residential and energy efficiency stoves

Reference document (please include date of document)	Extract (please include chapter, page number, etc.).
Nationally Determined Contribution (NDC)	Direct alignment and contribution to NDC implementation is required for all CTCN technical assistances. Please include a direct reference to the INDC/NDC document (chapter, page number, etc.).
Technology Needs Assessment	
National Adaptation Plans	
Nationally Appropriate Mitigation Actions	
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.

Lesotho was among the SADC countries which participated in a workshop organized by CTCN, United 4 Efficiency, and the Southern Africa Power Pool on Country Profiles on Leapfrogging to Energy Efficient Lighting, Appliances and Equipment. The country assessments developed in the framework of CTCN technical assistance were discussed. Lesotho and other participating countries reviewed the use, future trends and energy efficiency savings of the five leading energy consuming products (besides lighting) to engage funding agencies for the development of policy framework. A need was identified to look at the potential for increasing the energy efficiency of products in Lesotho by providing a technical market assessment of current conditions and policies. Five specific product categories have been looked at: lighting, air conditioning, refrigerators, motors and transformers.

Background documents and other information relevant for the request:

- Please list all relevant documents that will help the CTCN analyze the context of the request

and national priorities. Please note that all documents listed/provided should be mentioned in this request in the relevant section(s), and that their linkages with the request should be clearly indicated. For each document, please provide web-links (if available) or attach to the submission form. Please add any other relevant information as required.

- Please indicate if this request has been developed with the support of the CTCN Request Incubator.

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 Mechanisms².

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: *MABAFICENS MAHAHARISA*

Date: *28/02/2019*

Signature: *Maharubi*

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.

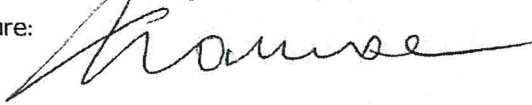
I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:

NDE name: LEFA THAMAE

Date: 28/02/2019

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.

¹ *"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)*

² Please see:

https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf