CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

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:	Eswatini (Swaziland)
Request title:	Leapfrogging to Energy Efficient Appliances and Equipment in Swaziland (Refrigerators and Transformers)
NDE	Mr. Bafana Simelane Ministry Tourism and Environmental Affairs, Meteorology Department Phone: +268 2404 6162 bafanasim@gmail.com
Request Applicant:	Ministry of Natural Resources and Energy Contact Person: Mr Mandla Vilakati Title: Principal Energy Officer Phone: +268-2404 1231 or +268-24046244 Email: mandlav@yahoo.com Postal Address: Ministry of Natural Resources and Energy P.O.Box 57 Mbabane

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):

Swaziland is experiencing a rural energy crisis where demand for household energy has outstripped Energy supply. The combination of high demand, aggravated by low end - use efficiency (fuelwood is either used in open fires or in stoves designed for coal) has contributed to environmental degradation, rural poverty and rural energy shortages. Insufficient policies and regulatory frameworks for energy efficiency; as well as the need for Fiscal and financial incentives to encourage the use of energy efficient appliances and Innovative financing schemes for energy efficiency and conservation programmes, hamper effective energy efficiency and renewable energy initiatives. EEC experienced severe cash flow challenges during 2015/16 due to continued tariff increases on imports that were above inflation. Projects to reduce reliance on imports are in progress. Severe droughts also impact on the country's generation capacity, therefore renewable energy plays an important part in the future EEC electricity generation mix.

Considering these power sector's challenges and the urgent need of system maintenance in Swaziland, energy efficiency (and indeed the theme of this project) is understandably not a primary NDE priority. Electrification, food, water, housing and other more pressing and relevant issues also understandably take priority. Thus, little capacity to track or research the data required in this project's survey has been available.

In terms of energy access Swaziland along with Kenya, is among the Sub-Saharan African nations where the pace of electrification has grown significantly in recent years, especially between 2000 and 2016. Access to electricity has increased by more than 50% over the past 20 years. In 2015 the national electricity access rose to 75%. Subsidised electricity tariffs (i.e. lower) tariffs result in longer payback periods for energy savings projects or energy efficient technologies. This can negatively impact the sales of energy efficient units, as compared to cheaper but less efficient 'competitors fortunately, the low average income level in Swaziland effectively prevents the state-owned utility from increasing its tariffs to be cost reflective of generation, as many consumers would then not be able to afford electricity; which in turn provides a negative impact on both the economy and the uptake of electrification.

Like several other countries in the Southern Africa region, Swaziland's energy policy is at a very high level and lacks detail. It does not address or provide for any energy efficient technologies, have any specific energy efficiency regulations or provide a mandate to enable such regulations.

Because demand for energy is outpacing supply, Swaziland has much to gain by adopting energy efficiency standards, regulations and technologies. This TA provide insight into the five product categories of primary energy-consuming appliances and equipment covered (lighting, air conditioning, refrigerators, motors and transformers).

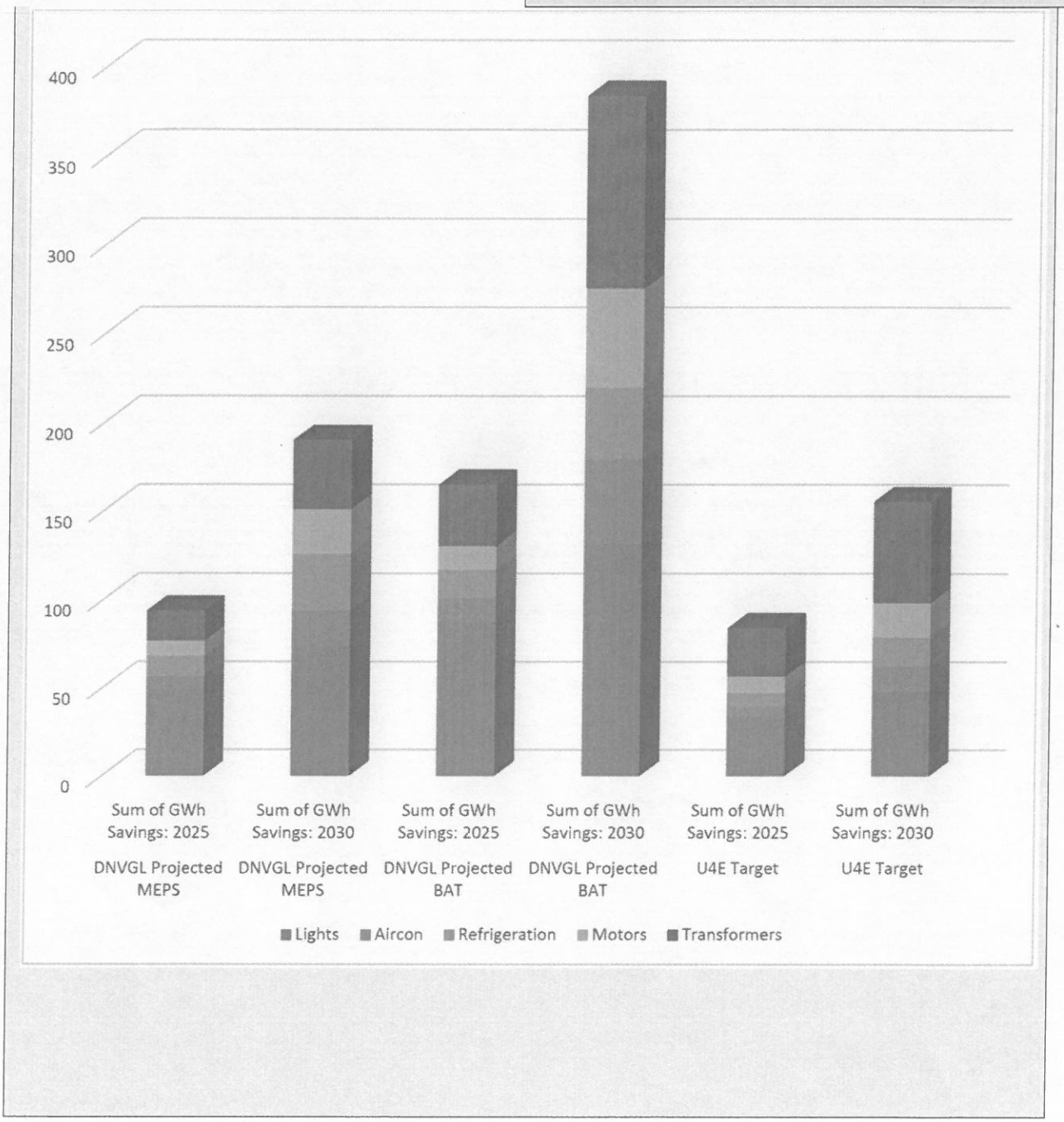
Past and on-going efforts to address the problem (up to half a page):

Compact fluorescent lighting is promoted under the CFL Exchange programme, and approximately 90% of electrified households are now using pre-paid meters. In addition to promoting efficiency in the industrial sector, a time-of-use tariff has been introduced for industrial customers (SEC, 2012). SEC has been distributing compact florescent lamps to customers for free during the roadshows. (Although the quantities distributed are low, giveaways are not considered a wise long-term strategy). The roll-out of prepaid electricity connection has seen about 95% of all domestic customers being converted from credit meters to prepaid meters. SEC has also organised public sensitisation campaigns on energy efficiency through various forms of media - newspapers, television, radio and in schools – in collaboration with various stakeholders dealing with energy efficiency issues.

The electricity supply industry in Swaziland has undergone changes from both a policy and regulatory point of view. Issues such as the changing global trends towards liberalised energy markets; security of supply; achieving efficiencies; affordability; and access to electricity, amongst others, have introduced a change in the policy trajectory with regards to how Swaziland views electricity supply. Overall, the electricity supply industry in Swaziland can be broadly defined as an industry in transition, informed both by policy imperatives and regulatory reform.

Swaziland used about 46,000 USD from a National Energy Efficiency Awareness Fund to assist funding energy efficiency campaigns and activities which will include raising awareness on energy efficiency and conservation, improving and promoting consumer cooperation towards improving energy efficiency, and promoting sustainable energy supply.

Swaziland 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.



Specific technology[1] 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(ies) to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).

[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)*

Like several other countries in the Southern Africa region, Swaziland's energy policy is at a very high level and lacks detail. It does not address or provide for any energy efficient technologies, have any specific energy efficiency regulations or provide a mandate to enable such regulations. Swaziland is therefore facing critical challenges to achieving market transformation towards energy efficient products including lack of information and awareness, limited labelling of appliances, and an absence of minimum energy performance standards. In coordination with similar projects in neighbouring countries, this project will prioritize energy-efficient refrigerators and distribution transformers in order to meet these challenges.

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
- ☒ 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):

In coordination with similar CTCN projects in neighbouring countries, this TA reviews the potential for increasing the energy efficiency of products in Swaziland by providing a technical market assessment of current conditions and policies. Specific product categories will be reviewed: refrigerators and transformers. Research will be conducted to provide context and insight in relation to the barriers and opportunities along with a set of recommendations intended to support Swaziland in achieving its sustainability goals.

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 Energy Efficient products.

- 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 support in getting the commitment and participation of the relevant stakeholders within the process and in exchanging of best practices regionally.
Request Applicant	The Ministry of Natural Resources and Energy-Energy Department will be responsible for developing the national strategies and development of minimum energy performance standards and labelling.
Please add as many stakeholders and lines as required.	
· Swaziland Energy Regulatory Authority (SERA) · The Electricity Control Board (ECB)	This an independent regulatory authority responsible for the regulation of the electricity, petroleum, natural gas sectors in Swaziland. These regulatory bodies oversee within the energy sector that will include nut not limited to MEPs/BAT
Fridge manufacturers	Ensure that assembled refrigerators conform to minimum performance standards and are appropriately labelled.
The Eswatini(Swaziland) Electricity Company (EEC)	This is the only power utility in the country. Their roles will be but not limited to this will be to: ▪ provide information in formulation of energy efficient strategy in terms of EE appliances. ▪ Implement and integrate energy efficiency standards in their everyday operations.

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, National Adaptation Plans, sectorial strategies and plans, etc.

Swaziland's Nationally Determined Contribution to the United Nations Framework Convention on Climate Change's (UNFCCC's) Paris Agreement aims to reduce it greenhouse gas emissions and build its climate resilience. The energy sector is among the main sector targeted in its mitigation strategies.

Swaziland established The Integrated Energy Planning operational branch of the Department of Energy in May,2009, to develop, implement and maintain a National Integrated Resource Plan (IRP).
The Ministry has established a programme for Energy efficiency in public buildings. Promoting procurement of efficient equipment and appliances in government institutions. The Ministry will work on a strategy to ensure that government utilizes energy efficient equipment. Several activities are already ongoing in line with the various policies and strategic plans in place, such as wind resource assessment, distribution of energy efficient woodstoves, co - generation in sugar mills, and utilization of photovoltaics.

Swaziland 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. Swaziland also joined the International Renewable Energy Agency (IRENA) - a global initiative to promote and reduce barriers to the uptake of renewable energy.

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.). Swaziland mitigation actions in his NDC include: ▪ ***Doubling the share of renewable energy in the national energy mix. This includes electricity generation and reduced consumption of non-sustainable biomass*** ▪ ***Phasing out the use of HFCs, PFCs and SF6 gases.*** (Swaziland NDC page 5)
Technology Needs Assessment	Energy savings and energy efficiency were one of the prioritized sectors under Swaziland TNA Mitigation category: "The energy sector is one of the sectors that are active in climate change mitigation in the country. They have national programmes and projects aimed at promoting and facilitating clean energy options and also have the necessary policy framework for the implementation of such programmes. For the purpose of this exercise, the sector technologies have been categorized into the following subsectors/categories; ○ Power generation, ○ Household energy, and ○ ***Energy savings and energy efficiency "*** (Swaziland's TNA Mitigation, page 15) ▪
National Adaptation Plans	
Nationally Appropriate Mitigation Actions	

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.

Swaziland 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. Swaziland and other participating countries reviewed the use, future trends and energy efficiency

savings of the five leading energy consuming products and prioritized refrigerators and distribution transformers as focus products (besides lighting) to engage funding agencies for the development of policy framework.

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 Mechanisms[2].

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: Mr. Emmanuel Dumsane Dlamini

Date: 29/1/19

Signature:

MINISTRY OF TOURISM AND ENVIRONMENTAL AFFAIRS
PRINCIPAL SECRETARY
29 JAN 2019
P O BOX 2652
MBABANE-SWD

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

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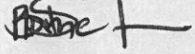
Monitoring and impact of the assistance:

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:	Mr. Bafana Simelane
Date:	29/01/2019.
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.