National Stakeholder Consultation

National Stakeholder Consultation Report on NPR- Eswatini

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UN environment programme

U4E United for Efficiency

GREEN CLIMATE FUND

CTCN UN Climate Technology Centre & Network UNFCCC Technology Mechanism

PEGASYS CHANGING LIVES CHANGING WORLDS

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ABBREVIATIONS

AfDB	African Development Bank
CTCN	UN Climate Technology Centre and Network
DoE	Department of Energy
EEC	Eswatini Electricity Company
ERS	Eswatini Revenue Services
ESERA	Eswatini Energy Regulatory Authority
EU	European Union
GCF	Green Climate Fund
GWP	Global Warming Potential
HEPS	Higher Energy Performance Standard
IMF	International Monetary Fund
IPP	Independent Power Producer
LED	Light emitting diode
MDG	Millennium Development Goals
MEPS	Minimum Energy Performance Standard
MNRE	Ministry of Natural Resources and Energy
MV&E	Monitoring, Verification and Enforcement
NPR	National Policy Roadmap
ODS	Ozone Depleting Substances
PRS	Product Registration System
PWG	Policy Working Group
SADC	Southern African Development Community
SWASA	Eswatini Standards Authority
SZL	Eswatini Lilangeni
TBD	To Be Determined
UA	Units of Account
U4E	United for Efficiency

1 INTRODUCTION

The 'Leapfrogging to Energy Efficient Appliances and Equipment in Eswatini (Refrigerators and Distribution Transformers)' project is delivered by the UN Climate Technology Centre and Network (CTCN) with funding from the Green Climate Fund (GCF) and being implemented under the guidance of the government of the Kingdom of Eswatini (Eswatini). The project is also being implemented simultaneously within 7 other countries of the Southern African Development Community (SADC) region, namely Botswana, Zimbabwe, Namibia, Malawi, Lesotho, Zambia and Tanzania. Eswatini has no independent access to the coast/sea. Therefore, it is heavily reliant on use of South African ports for the import of essential commodities, including electricity, which is purchased from Eskom, the state-owned utility in South Africa. The electrification rate in Eswatini is currently around 84% with universal access to electricity projected by the end of 2022 [1]. The government of Eswatini has embarked on a drive to improve its electricity generation capacity to diminish its dependence on imported power from South Africa and to provide greater security of supply. A National Energy Policy was developed in 2018 to facilitate this process. An Independent Power Producer (IPP) Policy was established under the Ministry of Natural Resources and Energy (MNRE) to increase the utilisation of solar and biomass generation plants. The Lavumisa 10 MW solar plant project is nearing completion while there are 40 MW solar and 40 MW biomass generation plants planned for construction in 2021 [1]. The expansion of the grid will result in an increase of transformers on the network. Any improvement in the technical losses present on distribution transformers will have an immediate impact on energy efficiency improvements for the entire network and has direct cost savings for the country. Refrigeration appliances, in particular household refrigerators are also a major contributor to technical electrical losses. Refrigeration appliances are always operating and therefore consume electrical energy constantly. Therefore, energy efficiency improvements in these appliances have a continuous impact on energy efficiency improvements for the country.

The aim of the project was thus to focus on distribution transformers and household refrigeration appliances and attempt to establish a framework in order to improve the energy efficiency of these appliances. This was done through the establishment of national standards for both refrigerators and distribution transformers and development of Minimum Energy Performance Standards (MEPS) as well as an energy labelling scheme for refrigerators and a label for distribution transformers entering the country. During the project engagements were held with all of the key stakeholders within the country to create a system through which the necessary legislation can be developed related to the implementation of the MEPS and also to create a national implementation plan that will both enable the implementation of the MEPS but also create a framework within Eswatini for future development of related standards and legislation. Furthermore, the project investigated possible financing mechanisms available to assist the implementation of this project and the respective training programmes to enable transition into a self-sustained and managed implementation of the project in the future. Pegasys was contracted by the UNEP through the UN Climate Technology Centre and Network (CTCN) to implement this initiative in Eswatini. The CTCN is overseeing the project together with United for Efficiency (U4E) as a technical partner. This report focuses on the household refrigeration aspect of the project. As part of the project a number of tasks were completed as per the project plan. These include:

1. Development of the Eswatini National Standard on energy efficiency in refrigerators (including MEPS and HEPS)
2. Development of the Eswatini Energy Label (draft)
3. Development of the consumer awareness campaign
4. Development of the recommendations related to the financial supporting mechanisms
5. Development of the MV&E plan
6. Development of the National Policy Roadmap (NPR)

One of the key deliverables of the project is the National Policy Roadmap (NPR). This is effectively the implementation guide for the Eswatini national stakeholders to use in order to implement the project. In order to complete the NPR the complete understanding of the project by the key Eswatini national stakeholders was required. The NPR was therefore drafted and presented to the national stakeholders in a series of workshops. This report outlines the workshops that were presented and the content that was delivered.

2 Background

The electrical energy layout of Eswatini is one in which, at the moment, relies on imports of power from South Africa. The legal, regulatory and standardisation frameworks are generally inexperienced and untried with regard to energy efficiency matters. As a result, the appliances that are installed in Eswatini are not monitored and do not have minimum energy efficiency thresholds. However, there is enthusiasm within the ministries that will be directly involved with the project of the development of the MEPS and the corresponding regulators and primary stakeholders. The cooperation between key governmental departments in Eswatini appears to be smooth and SWASA has experience in standards development and a well-established process for the operation of technical committees. The ERS appears capable of implementing the MEPS at border levels with adequate controls. Additionally, the regulatory framework and the close alignment between the regulators and key ministries in Eswatini could make the policy transition efficient. The general population is largely unaware of the benefits of energy efficiency and much work will need to be undertaken on the public awareness campaigns related to this issue.

However, there are also a number of opportunities for a successful implementation of MEPS in the refrigeration and distribution transformer environment. These are:

- Successful implementation of MEPS in the refrigeration and distribution transformer sectors could open up a pathway to implement similar projects in other sectors and with other appliances (e.g. washing machines and dishwashers, stoves and ovens, air conditioners, etc.)
- Successful training of the customs officials of the Eswatini Revenue Services (ERS) in relation to energy efficiency compliance will make them more capable of enforcing other governmental initiatives related to energy efficiency and quality on a variety of products (e.g. air conditioners, power cables, etc.)
- Establishment of a framework that requires minimum energy performance and outlines higher energy performance of refrigerators, which will enable the local manufacturer Palfridge to compete against imports in an even, structured market
- Development of energy efficient appliances could lead to a green building revolution in Eswatini and align with the national energy policies
- Increasing public awareness related to energy efficiency would be beneficial to the general behaviour of the population towards energy use and could provide general energy saving benefits and an energy conscious behaviour beyond the confines of this project.

In order to start with the development of the MEPS and the national standards it is critical that the process is aligned with the national standards development processes in Eswatini and that there is sufficient engagement across the various levels and types of stakeholders within Eswatini in order to obtain buy in for the project. The buy-in greatly assists the adoption of the standards and their implementation. In order to achieve this a number

of components are required. some of these have been completed as a part of this project. However, many others require implementation, the most important aspects of the project are listed below:

- Development of the national standard
- Development of the energy label
- Development of the regulatory framework
- Development of the implementation plan
- Development of the supporting aspects such as the consumer awareness campaign
- Obtaining financial backing for the implementation of the project

The national standard and the energy label have been developed. However, for the remaining aspects listed above research was conducted and recommendations made. These recommendations are detailed in the various reports and are gathered in the NPR document. This is effectively an implementation plan/guideline for the national stakeholders of Eswatini. This plan was developed through numerous interactions with the national stakeholders in Eswatini. The plan was also presented to the national stakeholders in workshops. The following section outlines the NPR and its contents briefly. There is an NPR report on the matter, which is more detailed. The section after that explains the workshops that were conducted in more detail.

3 NPR Workshops Contents

The NPR was developed during the course of the project. It was developed through the consultative process with the national stakeholders of Eswatini. Initially, the national stakeholders had been identified, informed about the project and invitations sent to them to participate in the PWG. The PWG was then formulated with the terms of reference and a membership. The PWG would represent the national stakeholders in the remainder of the project and would be presented with the national standards and the MEPS that were developed. The MEPS, the energy label and the national standards were developed though SWASA processes and the respective TCs. The feedback of these developments was provided to the PWG. The PWG was also presented with other parts of the project as they were developed and drafted. These included the consumer awareness campaigns and the research on adequate financing mechanisms to support the project. Upon the finalisation of the activities and all of the drafts the various aspects of the project that were completed and those that would be required for implementation were combined into an NPR workshop. The NPR workshop consisted of the following:

- Regional standards and context

Detailed explanation on the regional standards, their impact on Eswatini, the conditions in Eswatini and applicability of the regional standards for both distribution transformers and refrigerators. This include aspects such as the HEPS and whether the regional ones were adequate for Eswatini, the fact that Eswatini has a refrigerator manufacturer unlike most of the countries in the regional project, the background into the suppliers of distribution transformers in South Africa as the main suppliers and their adaptation to the regional standard and the new South African National Standard (SANS 780).

- MEPS, HEPS and energy label

The MEPS and HEPS of the refrigerators were described in detail both in terms of Eswatini and the regional context. Insight was also provided as to the decisions made by some of the other countries implementing the project. The difference with having a refrigerator manufacturer with an accredited laboratory versus the other countries without such manufacturing capabilities was explained in detail. The MEPS for distribution transformers were also explained and the context of the MEPS and losses in various countries around the world and various standards around the word were described. The development of standards to include more stringent losses was explained and the status of the manufacturers and their capabilities explained. The various labels from around the world were outlined and the reason for the bar label, similar to the South African energy label was explained. The distribution transformer label was also presented and explained in detail. The proposed Eswatini Energy labels for both refrigerators and distribution transformers were presented and discussed.

- Implementation key points

The key implementation points for the project were identified and discussed in detail. These included:

- Regulation
- Enforcement of regulation
- Communication between relevant departments and entities
- Consumer awareness
- Financial support
- Training
- Continuous stakeholder engagement

Each of the points above was explained in more detail during the workshop and commented on by the stakeholders. One of the key aspects of the NPR workshops was the assigning of roles and responsibilities to the various institutions within Eswatini. This showed exceptional commitment to the project and an understanding of the detailed activities that are required for its successful implementation.

- MV&E

The details of the MV&E plan were outlined. A lengthy discussion followed related to the various options regarding the implementation of the standards and the labels. For refrigerators it was decided to utilise the PRS and the activities of this process were explained in detail with responsibilities being assigned to each organisation. For distribution transformers the decision was made to focus on the procurement processes as these purchases are governed by a few large buyers (EEC, Ubombo Sugar, Royal Swazi Sugar and others). The procurement process was explained in detail to the stakeholders and training on the methodologies of TCO were repeated for the stakeholders.

- Consumer Awareness

The consumer awareness campaign plans were discussed in detail and aligned with the conditions in Eswatini. Additionally, prices for certain activities, such as TV, radio and billboard advertising were gathered through the process of the workshops and discussions, which thus proved very useful.

- Financial mechanisms

The financial mechanisms were discussed in more detail. There were separate training and workshops on financing mechanisms but it was also important to discuss them during the NPR as some of the organisations with certain responsibilities could understand the budget they require for project implementation. The pure financing mechanisms workshops focused more on the mechanisms to support the purchase of more efficient refrigerators and distribution transformers, whereas the discussions in these workshops focused on the finances required to implement the project/NPR.

The following section outlines the workshops that were delivered to the national stakeholders.

4 Consultation Process

The various aspects of the project and in particular the implementation of the project were discussed at various PWG meetings throughout the project. As the PWG consisted of the major national stakeholders the majority of the content and the planning of the implementation of the project was known to the major organsations relevant to the project in Eswatini.

Upon the completion of the NRP planning and the completion of the planning of the various segments of the project (standards, MEPS, HEPS, energy label development, as well as the development of the consumer awareness campaign and the financing mechanisms) a workshop was organised for the national stakeholders. The workshop was held on the 13th of October 2022. During this workshop the content described above was presented and discussed in detail. The one workshop was held online and following that the international consultants travelled to Eswatini for physical meetings. The one was the question and answer open session on the NPR on the 19th of October and then the policy working group session on the 20th of October where the NPR was discussed in detail again. The two physical sessions were extremely useful. It allowed the national stakeholders to ask questions in person of the international consultants and to get a detailed explanation that might have been difficult over the online system. It also allowed for open discussions on issues between the organisations. This was especially useful during the discussions related to responsibilities of the various organisations related to project implementation. The various organisations offered to assist with numerous aspects of the project. For example the SWASA would assist with the verification of proof of conformity (validity of test reports), the ERS would assist ESERA with the market surveillance by providing inspectors, etc. This type of discussion also helped in estimating the budget required for project implementation. The national stakeholders also discussed the process of regulation development. During these meetings the DoE undertook to drive the process. A lot of input on the regulatory process in Eswatini wqs provided by the various members of the PWG and other national stakeholders. It was indicated that this regulation will be aligned with the National Energy Policy and hence that its development would be easier than most regulations. There had thus been a process that was outlined and the DoE understood the process to follow to implement this.

The physical meetings thus greatly assisted the process and at the end of the workshops there was a clear understanding of the process. Based on the discussions the national stakeholders decided that in the beginning of the implementation of the project they would form a Project Steering Committee (PSC), which would drive the various implementation aspects as decided upon in the NPR.

5 Conclusion

As has been shown in this report the Eswatini National Project related to energy efficiency of distribution transformers and refrigerators has resulted in a number of key developments. Amongst these the most important is the development of the Eswatini National Standards on energy efficiency of distribution transformers and refrigerators. The importance of the development of the national standards, the MEPS and the energy labels is only realised once the implementation of these developments takes place. In order to do this the NPR was developed for Eswatini. The NPR was developed through a collaborative approach with the international and local consultants as well as the national stakeholders of Eswatini. This report outlines the workshops that were held to discuss the key implementation points of the NPR and the decisions that were made by the national stakeholders. Some of the key decisions have been to develop a regulation that will ensure that the MEPS and the energy label are mandatory for refrigerators. Additionally, the implementation of the MEPS and the energy label for distribution transformers would be done through the updated procurement policies of the major buyers, using the TCO model. The NPR workshops also enabled the national stakeholders to assign responsibilities related to project implementation to each other. A decision was made to formulate the PSC to drive the implementation along the guidelines developed in the NPR.

6 References

[1] UNDP, Kingdom of Eswatini, “Sustainable Energy for All Investment Prospectus”, July 2016