



## **Terms of Reference (TOR)**

### **For the provision of services related to development and enforcement of Minimum Energy Performance Standards (MEPS) for lighting and appliances in São Tomé and Príncipe.**

#### **UNIDO Project Title: “Strategic program to promote renewable energy and energy efficiency investments in the electricity sector of Sao Tome and Principe” (ID 150124)**

30 June 2021

## **1. Introduction**

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The Global Environment Facility (GEF) funded project “Strategic program to promote renewable energy and energy efficiency investments in the electricity sector of São Tomé and Príncipe” is implemented by UNIDO in partnership with the Directorate-General for Natural Resources and Energy (DGRNE)<sup>1</sup> of the Ministry of Infrastructure, Natural Resources and Environment (MOPIRINA)<sup>2</sup> and the National Designated Authority (NDA) at the Ministry of Planning, Finance and Blue Economy (MPFEA), and other international partners (e.g. UNDP, WB/AFAP, AfDB). The efforts will be complemented by a Green Climate Fund (GCF) funded UNIDO project “Building institutional capacity for a renewable energy and energy efficiency investment programme for Sao Tome and Principe”, which is currently under final approval.

Sao Tomé and Príncipe (STP) comprises a total area of 1,001 km<sup>2</sup>, including islands and islets (the two largest islands São Tomé with 859 km<sup>2</sup> and Príncipe with 142 km<sup>2</sup>, including the adjacent islets). As a Small Island Developing State, STP faces specific challenges in relation to its size, remoteness from large markets, dependence on a small number of economic sectors, direct investment and remittances inflow, lack of resources, and a significant trade deficit. Moreover, key sectors of the economy are highly vulnerable to natural, climate, and external economic shocks.

The UNIDO project contributes to the Vision 2030 “São Tomé e Príncipe 2030: the country we need to build”, which aims to transform the country into a climate-resilient and vibrant island hub for blue economy business, financial services and tourism, benefitting from the growing regional market of the Economic Community of Central African States (ECCAS). The GEF project is also part of the joint UN efforts to support the graduation of STP from the list of least developed countries (LDCs) by 2024. Faced with a situation of constrained fiscal policy, the Government aims to create the conditions to allow the private sector to become an engine of growth, economic diversification, and poverty reduction. The focus lies on improving the business climate, promoting foreign direct investment, and improving key social and economic infrastructure, including energy.

The success of the Vision 2030 highly depends on a power sector reform and a transformational shift of the entire energy system from a nearly complete fossil fuel import dependency to renewable energy and energy efficiency. Such a transition will lead to a significant reduction of fossil fuel import spending and will free up scarce hard currency resources for social and economic development (e.g. education, health care, transportation, export diversification, SME -small and medium-sized enterprises- development and climate change adaptation). Moreover, it will assist key island industries (e.g. water supply, agriculture, food processing, tourism, fishery, and the wider blue economy) to become more productive and competitive.

In the Nationally Determined Contribution (NDC) of 2015 and the 3<sup>rd</sup> National Communication on Climate Change (NCCC) of 2019, the country has established ambitious climate change mitigation targets for the energy sector. In 2012, around 80% of the emissions were related to the energy sector (incl. transport) and the remaining 20% to agriculture and waste. In the electricity sector, the NDC aims at around 50% renewable energy penetration by 2030, mainly based on run-off-river micro/small hydro power and solar PV.

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Currently, STP has one of the highest power generation costs in Sub Sahara Africa. The power sector remains subsidized and tariffs are not cost-reflective, affecting the macro-economic stability of the country. The national utility (EMAE) is not able to recover its costs. Moreover, STP faces challenges resulting from outdated transmission and distribution systems, an energy generation mix highly dependent on costly diesel, and poor management. As a result, electricity supply is characterized by frequent power cuts and load shedding, forcing businesses and essential social service providers to run on diesel generators.

There are also some isolated diesel generation systems to supply electricity to those that are not connected to the electrical grid. The STP electrification rate is currently estimated at 87% (74% in Sao Tomé, and 100% in RAP) with a total generation capacity of 30.22 MW (2018). Furthermore, more than 20% of the population in remote and rural areas does not have access to reliable electricity services, and the majority of the population has no access to sustainable cooking services and relies on traditional biomass and charcoal.

There has been no significant measurable progress regarding the RE&EE integration over the past decade. The RE baseline remains limited to colonial run-off-river micro/small-hydro power stations, of which only one is partly functional, and small solar PV applications for rural households and productive uses (e.g. irrigation for agriculture, telecommunication and conservation of fish). The baseline regarding EE is low and largely unknown. Past support in the RE&EE sector in STP was rather fragmented and uncoordinated. These efforts have been focused solely on the electricity sector and existing barriers for RE&EE were not addressed in a coherent way and across sectors. The impact of these scattered interventions has been limited.

In STP, the uptake of the RE&EE technology market is hindered by a broad range of demand-side and supply-side barriers, which need to be addressed simultaneously. These are related to institutional capacity, policy and regulation, knowledge management, qualification, entrepreneurship, as well as access to finance and technology. The market introduction of new RE&EE technology products, services and business models requires specific pull and push actions directed to overcome demand (consumers of products and services) and supply-side (suppliers of products and services) barriers.

The GEF/GCF funded UNIDO activities aim to create an enabling environment for the uptake of investments in renewable energy and energy efficiency by addressing the barriers through holistic interventions in the areas of planning, policy and regulation, project facilitation, as well as qualification and certification. UNIDO applies a strong partnership approach to increase the impact of the activities.

*Further project information is available at: <https://open.unido.org/projects/ST/projects/150124> and <https://dgrme.org>*

## **2. Specific issues addressed by the assignment**

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National assessments indicate a significant feasible and viable potential for energy efficiency improvements in Sao Tome and Principe. The island electricity system is characterized by supply- and demand-side losses. Significant saving potential exists in the residential and public sectors since they consumed approximately 52% and 29% of the total electricity consumption (70.4 GWh), respectively, in 2018.

One of the main constraints has been the lack of continuous and adequate maintenance of generation and transmission infrastructure that results in technical losses, which, in turn, negatively impacts the reliability, sustainability, and efficiency of electric power systems. These losses are estimated at around 35%. Moreover, due to the low urban and rural consumer willingness and ability to pay, the utility is facing significant commercial revenue losses – in addition to the non-cost-reflective tariffs, which do not cover the diesel generation costs.

So far, the area of energy efficiency did not get much attention from international support. International efforts were predominantly focused on a general power sector and tariff reform, grid expansion and loss management, as well as renewable energy integration. Demand-side energy efficiency aspects were insufficiently considered in the *Least Cost Power Development Plan* (October 2018), which provides a 50% renewable energy scenario by 2030. The need for additional generation and storage investment might be lower when considering the mitigation of demand, peak loads and generation and distribution losses. Without managing energy efficiency properly, renewable energy investments might have a lower impact as anticipated. The combination of lower capacity factors, technical grid and commercial losses tend to impact the viability of such projects negatively and is a risk concern for project finance.

However, recently several partners have announced energy efficiency initiatives. Some examples are: (i) Replacement of approximately 170 inefficient light bulbs with LED in public lighting and awareness-raising campaigns (EMAE); (ii) Replacement of about 300,000 incandescent light bulbs with LED to reduce 8.5 MW of peak demand and 15 GWh of energy needs, and communication campaigns from a gender perspective to increase invoice collection and fight commercial losses (WB and EIB-European Investment Bank); (iii) Implementation of an energy efficiency program to reduce electricity consumption in buildings and public lighting (AfDB); most of these activities are currently in the start-up phase.

The current cross-sectoral policy and regulatory framework regarding EE remain underdeveloped and incoherent. STP has not established EE targets and standards for generation and transmission/distribution, industrial use, buildings, lighting and appliances, transport and cooking. The Government's *Major Plan Options for 2019* (2018) only states the need to establish EE programs, meaning that the country lacks a clear pathway to foster EE measures on small and large scales. There is no reliable EE data available. UNIDO is currently supporting the Government to draw up a reliable energy balance and to implement an energy information (indicator) system.

The country operates based on several plans and laws, covering different uses of energy and regulations for tariffs and prices. The *Legal Framework of the Electricity Sector* (RJSE), Decree-Law 26/2014, known as the *Basic Law of the Electricity Sector* defines the bases of the system organization. There is also the *Quality of Service Regulation* (Resolution No. 020/CA/2017) published in December 2017, which establishes the technical and commercial quality of service obligations to be satisfied by the national electricity system services. The technical obligations refer to the quality and reliability of the electricity service. However, concrete supply-side and demand-side measures remain unmentioned.

Therefore, under the GEF project, UNIDO is supporting the Government in the development of the National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP). Relevant consulting assignments are ongoing. The NREAP/NEEAP will include quantifiable and feasible overall targets and sub-targets (by sector, thematic area and/or technology) by 2030 and 2050. The scenario will be based on a modeling analysis through the Low Emissions Analysis Platform (LEAP). The NEEAP will consider all dimensions of EE, incl. generation, transmission, distribution, end-use, lighting and appliances, industrial efficiency, transport, energy saving.

The NEEAP will include feasible targets with regard to access to efficient cooking appliances, including improved biomass cook-stoves, charcoal and LPG. It will also focus on transport (e.g. fuel and car standards, electric mobility) and industrial process heat. To build an efficient energy market, the NEEAP looks for addressing the following drawbacks: the lack of awareness about efficient use of energy, the lack of identification of EE potential apart from only replacement of light bulbs, the lack of information, the lack of training, monitoring and auditing, the lack of more efficient equipment, and the absence of energy efficiency standards.

The draft *Energy Policy and Data Gap Analysis* (2021) and NEEAP identify the adoption and enforcement of Minimum Energy Performance Standards (MEPS) for a group of prioritized electric appliances and equipment with high energy intensity, such as air conditioners, refrigerators and industrial equipment, as a “low hanging fruit” and priority action. The work on standards is an important intervention to ensure the long-term sustainability of short-term oriented (emergency) light bulb exchange programs currently starting in the country. Therefore, UNIDO is supporting the Government in the establishment of an implementation and compliance framework for electric appliances, including lighting, air conditioning and refrigeration.

### **3. Objectives, scope and deliverables of the assignment**

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UNIDO seeks consulting support to develop an implementation and compliance framework for electric appliances, including lighting, air conditioning and refrigeration. The assignment has the following scope:

1. Development of a baseline assessment on the market conditions;
2. Development of an implementation and compliance framework (two independent documents);
3. Development of Minimum Energy Performance Standards (MEPS);
4. Conceptualization of a labeling program;
5. Development of a regulation;
6. Execution of a capacity building workshop and webinar.

The assignment is of cross-sectoral nature and will include coordination with the main players of the energy and other concerned sectors (e.g. buildings, climate, finance, main industries). At the institutional level, the STP energy

sector is led by MOPIRINA through the Directorate-General for Natural Resources and Energy (DGRNE), and in the Autonomous Region of Príncipe (RAP), the sector is under the responsibility of the Regional Secretariat for Environment and Sustainable Development. In addition to that and at the local level, the districts only have regulatory powers in the energy field although, informally, they have a very involved role in the design of public policies and regulations of the sector. As regards regulation, the energy sector, in general, is not attached to a specific regulatory body, only the General Regulatory Authority (AGER) is responsible for regulating and supervising the electricity sector, as well as the water and telecommunications sectors and postal services. The generation, transmission, distribution, and commercialization of the electricity service is in charge of the National Water and Electricity Company (EMAE), which supplies electricity to a large part of the population.

Specifically, the consultants will perform the following activities and provide the respective deliverables:

### **3.1. First Phase: Development of a baseline assessment of market conditions of lighting, air conditioners and refrigerators.**

The service provider will carry out a market assessment for three electric appliances in STP: lighting, air conditioners and refrigerators. These products have been selected according to previous local assessment studies and similar initiatives deployed in other African countries. For instance, in an undertaken assessment, Energias de Portugal (EDP) identified the great potential for reducing the electricity consumption of air conditioner equipment. This potential was identified for the island of Príncipe but may also be very relevant on the island of São Tomé, assuming that a similar situation occurs, where there are more public and commercial buildings. Air conditioners are usually considered the first target of the energy efficiency regulations due to their contribution to peak loads. EDP also identified the possibility of replacing common incandescent light bulbs and compact fluorescent light bulbs with LED light bulbs, which consume the equivalent of 10% of the consumption of an incandescent and 40% of a compact fluorescent lamp, respectively. Currently, EMAE with the support of the World Bank is starting to implement an ambitious initiative to phase out incandescent and fluorescent tube lights from the residential sector and public facilities.

The mapping of appliances and their energy performance benchmarking will provide enough information to compare test standards and efficiencies of appliances and to align the appliance market of STP with regional/African/international efficiency levels. This baseline assessment will provide the performance level and growth rate of the market for each type of selected appliance. The assessment will also provide information on the pricing, economics and average lifetime of these appliances. It will also look into how these appliances are used by the consumers within the specific socio-economic and cultural context of STP.

The assessment will include the energy-saving potential for each sub-category of products in the market and will establish a baseline for relative assessment. This evaluation will also involve the market conditions of the above-mentioned products in terms of energy efficiency:

- The identification of the current levels and forecasted trends for efficient products in the national market;
- The identification of specific new technology that will become available (possible manufactured products in the national market since, currently, appliances are all imported);
- The identification of imported products and their characteristics;
- The identification of international standards that could be adapted to national conditions.

In case the NEEAP assignment is still ongoing, the results of the market assessment will be provided to the consultants to further fine-tune the document and scenario modeling.

**Derivable 1:** Report that includes a baseline assessment of market conditions of electric appliances for lighting, air conditioners, and refrigerators. The used raw data and spreadsheets will be provided to UNIDO and MOPRINA.

### **3.2. Second Phase: Development of an implementation and a compliance framework for lighting, air conditioners, and refrigerators.**

First, the service provider will develop an implementation framework to phase out inefficient equipment focused on three products: lighting, air conditioners, and refrigerators. This will involve the evaluation of relevant information to provide clear state of the art of energy efficiency policies and regulations and standards, including the identification of institutions/agencies responsible for the implementation of MEPS and labeling schemes (e.g., DGRNE, AGER, RAP, and local districts, chambers of commerce, relevant associations, ports etc.).

This analysis added to the market assessment conditions will serve the service provider to outline an implementation framework to phase out inefficient equipment (lighting, air conditioners, and refrigerators) and to reinforce energy efficiency policies. The consultant provider should identify the institutional capacity and responsibilities to support the implementation of MEPS and labeling schemes.

The involved parties and relevant institutions will be interviewed for the collection of data/ information and for including their contributions in the final text. The service provider shall hire local consultants to gather opinions/needs of local stakeholders and conduct meetings. A preliminary text will be developed and shared with the relevant stakeholders for review. Their contributions/comments/suggestions shall be included in the final document.

The objective is to support the implementation and monitoring of national initiatives and to drive the STP market transformation through the promotion of efficient use of energy in lighting, air conditioners and refrigerators by adequate harmonized energy efficiency policies, facilitating harmonization or clear alignment of MEPS, enhancing a trade of efficient products, saving energy, and reducing carbon emissions from more efficient products for consumers. Considering the conditions of international markets, especially from Africa, is a requirement to foster trade, adoption of the best practices, and technological comparisons. The implementation and compliance framework will carefully consider the specific socio-economic and cultural island context of STP and ensure aspects of long-term sustainability and inclusiveness. The latter includes aspects regarding the “ability and willingness to pay” and potential opportunities for value creation through local assembling and servicing.

The implementation framework shall include a proposed timeline with more specific items and will entail e.g. when and how/in what way to determine the most important product types and relevant actions for increasing their market up-take. This will include timelines and communication; models and tools for information, awareness-raising, and demonstrations targeting both men and women. Identifying viable and sustainable business models for implementation will be also part of the framework, as well as waste management, recycling, and repairing. The framework will enable STP to identify priority areas and also facilitate supporting the private sector and industry to voluntarily develop the required energy-efficient quality products and services.

The implementation framework will be based on international best practices in the area of lighting, air conditioners, and refrigerators. The service provider will present an outline of the framework for discussion to local parties. Once the outline has been agreed, the full document shall be elaborated. The framework shall also describe the priority areas and approaches towards EE for lighting, air conditioners and refrigerators in STP. The framework will particularly consider best practice within the lusophone language country context (e.g. Portugal, Cape Verde, Brazil).

Second, the service provider is requested to develop a Monitoring, Verification and Enforcement Framework (MV&E). The MV&E Framework will include a compliance certification reporting for suppliers and market surveillance and enforcement procedures for governments. STP has not developed and implemented MV&E practices. Information on applicable MV&E practices for the case of STP will be gathered by the service provider supported by local consultants through meetings held in the first phase of this assignment. This information shall be evaluated to outline the compliance framework. This document will be agreed and approved by the TC committee.

**Derivable 2:** The implementation framework for lighting, air conditioners and refrigerators, and a compliance program document. These are two independent documents. An Annex that includes the information of, at least, one (1) validation workshop, and the used raw data and spreadsheets will be provided to UNIDO and MOPRINA.

### **3.3. Third Phase: Development of Minimum Energy Performance Standards for lighting, air conditioners, and refrigerators.**

The contractor will be responsible for the development of the Minimum Energy Performance Standards – MEPS for lighting, air conditions, and refrigerators.

The MEPS will be based on international best practices and presented for adoption. The elaboration of the MEPS shall consider experiences applied at the regional level (Central Africa, SADC, EAC) and particularly lusophone countries (e.g. Portugal, Cape Verde, Brazil). Testing standards and procedures should be given in MEPS regulations. Provision of regular updates of these standards should be incorporated. The MEPS will carefully consider the specific socio-economic and cultural island context of STP and ensure long-term sustainability and

inclusiveness. The latter includes aspects regarding the “ability and willingness to pay” and potential opportunities for value creation through local assembling and servicing.

Depending on the product, different normative could be taken as a reference. For instance, in lighting: IEC (International Electrotechnical Commission), ANSI (American National Standards Institute), CIE (Commission Internationale de l'Eclairage). And other relevant information could be consulted in IGQPI (Institute for Quality Management and Intellectual Property), CISPR (Comité International Spécial des Perturbations Radioélectriques), IES (Illuminating Engineering Society), ARSO (African Standards), etc.

The development of mandatory MEPS shall be agreed upon with the Technical Committee (TC). The contractor together with the TC will define the adaptation period for the market.

**Derivable 3:** Three (3) harmonized MEPS. At least two validation (2) workshops will be organized and their respective reports shall be presented. The workshops will cover the MEPS and labeling schemes jointly. The used raw data and spreadsheets will be provided to UNIDO and MOPRINA.

### **3.4. Fourth phase: Conceptualization of a labeling program for lighting, air conditioners and refrigerators**

The conceptualization of a labeling program for lighting, air conditioners, and refrigerators will provide informative labels to imported/manufactured products. To do that, as it was indicated before, information at the regional, African and international levels (particularly of lusophone countries) will be taken into consideration in order to contribute to the potential trade in energy markets. The information on the label will be based on the context conditions identified by the service contractor in the first phase. The label framework shall be based on a mandatory comparative labeling and the adaptation period for the market shall be defined. The development of a mandatory labeling scheme shall be agreed upon with the Technical Committee (TC). The labeling program will involve:

a) Design of informative labels for appliances:

This activity will be based on the forecast of the energy efficiency potential of selected appliances and an analysis of the proposed energy labels. The information provided by the energy label will facilitate a simple choice of electric appliances.

b) Selection of a testing procedure for each appliance:

Identification and description of the testing procedure required by the selected appliances. For instance, an air conditioner requires a calorimeter chamber. This activity involves identifying the test procedures to be adopted by STP.

c) Establishment of a labeling threshold and a range for each labeled appliance:

Conduct an energy efficiency analysis of each category of appliances to evaluate the energy efficiency potential and prescribe an appropriate threshold after considering the optimized results.

The labeling program will be based on international best practices and presented for adoption. It shall consider experiences applied at the regional level (Central Africa, SADC, EAC) and particularly lusophone countries (e.g. Portugal, Cape Verde, Brazil).

**Derivable 3:** A labeling program report for the selected appliances imported/manufactured in the country. The report will include the design of the labels, the definition of testing procedures, a labeling threshold, and the definition of a methodology for the program implementation. At least two (2) validation workshops will be organized and their respective reports shall be presented. The workshops will cover the MEPS and labeling schemes jointly.

**3.5. Fifth Phase: Elaboration of a regulation for implementation and compliance of MEPS and a labeling program.**

To ensure and support the implementation and compliance of MEPS and a labeling program, a regulation shall be elaborated following the regulation standards of STP. For that purpose, a template will be shared with the consultant provider as a reference.

**Derivable 4:** A regulation for implementation of MEPS and a labeling program.

Finally and in order to support the efforts on the national level, a three days capacity-building workshop and a webinar will be held. The content of the capacity-building workshop and the webinar will be developed by the service provider. This content will be planned to share the approved implementation and compliance framework, the MEPS, the labeling program and the recommendations for their application, and the regulation to be applied. The focus will be put on the inclusion of gender-responsive approaches. The service provider will be responsible for the design and implementation of the webinar under the approval of UNIDO/MOPIRINA and the project stakeholders. If possible, the workshop will be conventionalized as a train of trainers workshop.

**4. Scope of work, time and payment schedule**

TASKS	DELIVERABLES	EXPECTED WORKING DAYS (WDs) (int./local experts)	TENTATIVE PAYMENT SCHEDULE
<p><i>1. Draft an Inception Report (IP)</i></p>	<p><b><u>Inception report</u></b></p> <p>To be approved by UNIDO and MOPIRINA after consultation with the project team and the project stakeholders (incl. detailed activity plan, time schedule, list of key literature and stakeholders, schedule of stakeholder workshops, meetings and webinar, data collection and methodologies for the development of different products, tables of contents of different derivable and tools to be used, project communication). The inception report will be prepared in Portuguese.</p>	<p>5 WDs</p>	<p>10% upon approved inception project report</p>
<p><i>2. Development of a baseline assessment of market conditions considering the following equipment: lighting, air conditioners, and refrigerators</i></p> <p>As a first step, the consultants will develop a baseline assessment of market conditions for selected electric appliances. During this phase, it is necessary to conduct a data collection field work as well as organize different meetings supported by local consultants.</p>	<p><b><u>1 Baseline assessment</u></b></p> <p>Max. 30 A4 pages in Portuguese, excl. Annexes. This document will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in Portuguese; and, an executive summary shall be provided in Portuguese and English.</p>	<p>30 WDs</p>	<p>20% upon approved baseline report</p>
<p><i>3. An implementation framework. A compliance framework (two independent documents)</i></p>		<p>60 WDs</p>	<p>20% upon approved implementation framework and compliance framework.</p>

<p>3.1. <i>Development of an implementation framework</i></p>	<p><b><u>1 implementation framework</u></b></p>	
<p>The implementation framework aims to phase out inefficient equipment (lighting, air conditioners, and refrigerators) and reinforce energy efficiency policies.</p>	<p>An implementation framework will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in Portuguese.</p>	
<p>3.2. <i>Development of a compliance framework</i></p>	<p><b><u>1 compliance framework</u></b></p>	
<p>The compliance framework will support and guide the implementation of harmonized MEPS and the labeling program, as well as the establishment of national compliance programs.</p>	<p>A compliance framework will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in Portuguese.</p>	
<p>3.3. <i>Organisation of a validation workshop of the implementation and the compliance framework</i></p>	<p><b><u>1 annex that includes the information of (at least) 1 validation workshop</u></b></p>	
<p>The organizers should encourage equal participation of women and men.</p>	<p>This document will be attached, as a unique document, to the final version of the implementation and compliance framework (in Portuguese).</p>	
<p>4. <i>Development of Minimum Energy Performance Standards</i></p>		
<p>4.1. <i>Development of three (3) MEPS for lighting, air conditions and refrigerators</i></p>	<p><b><u>1 MEPS for lighting, 1 MEPS for air conditions, 1 MEPS for refrigerators.</u></b></p>	
<p>The three (3) MEPS will be developed according to the results of the baseline assessment, tanking as a reference regional/African/international standards and local requirements. The MEPS will incorporate comments provided by the project team and the TC members. This product shall be developed in parallel with the labeling program.</p>	<p>The 3 MEPS will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in Portuguese.</p>	<p>40 WDs      30% upon approved MEPS and labeling program</p>
<p>4.2. <i>Organisation of at least 2 workshops, covering the MEPS and labeling schemes jointly.</i></p>	<p><b><u>At least 2 workshop reports</u></b></p>	
<p>The workshops will cover the MEPS and labeling schemes jointly. The organizers should encourage equal participation of women and men.</p>	<p>The (at least) 2 validation reports will provide the results of the workshop including gender and intergenerational aspects (in Portuguese).</p>	
<p>5. <i>Conceptualization of a labeling program</i></p>		
<p>5.1. <i>Development of a labeling program</i></p>	<p><b><u>Labeling program</u></b></p>	<p>40 WDs      See above</p>



<p>The conceptualization of the labeling program shall include the design of the labels, definition of testing procedures, a labeling threshold and the definition of a methodology for the program implementation. This product shall be developed in parallel with MEPS.</p>	<p>The labeling program will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in Portuguese.</p>	
<p><i>4.2. Organisation of at least 2 workshops, covering the MEPS and labeling schemes jointly.</i></p>	<p><b><u>At least 2 workshop reports</u></b></p>	
<p>The workshops will cover the MEPS and labeling schemes jointly. The organisers should encourage equal participation of women and men.</p>	<p>The (at least) 2 validation reports will provide the results of the workshop including gender and intergenerational aspects (in Portuguese).</p>	
<p><i>6. Regulation for the implementation and compliance of MEPS and the labeling program</i></p>		
<p><i>6.1. Elaboration of a draft regulation</i></p>		
<p>To ensure and support the implementation and compliance of MEPS and a labeling program, a regulation shall be elaborated following the regulation standards of STP. For that purpose, a template will be shared with the consultants as a reference.</p>	<p><b><u>One (1) draft regulation in line with the regulation standards of STP</u></b></p>	<p>15 WDs</p> <p>10% upon approved regulation</p>
<p><i>7. Capacity building workshop and webinar in Portuguese</i></p>		
<p><i>7.1. Organise a three day workshop</i></p>		
<p><i>7.2. Organise a webinar</i></p>		
<p>The contractor will organize a three days capacity-building workshop for the TC and parties involved in the different phases of the project (3-hours/day). Moreover, a short webinar to inform the wider public on the action plans will be organized under the GN-SEC framework.</p>	<p><b><u>A Workshop report incl. Agenda, PPT presentations, list of participants, photos and evaluation results</u></b></p>	<p>10 WDs</p> <p>10% upon execution of capacity building workshop and webinar</p>
<p>The contractor will organize a three days capacity-building workshop for the TC and parties involved in the different phases of the project (3-hours/day). Moreover, a short webinar to inform the wider public on the action plans will be organized under the GN-SEC framework.</p>	<p><b><u>A Brief report about the webinar including the agenda, list of participants and evaluation results and suggestions for future activities</u></b></p>	<p>10 WDs</p>
<p><b>TOTAL</b></p>	<p><b>200 WDs (int. and local experts)</b></p>	

The activities under this contract shall be completed within a period of twelve (12) months from the effectiveness of the contract. Due to the COVID-19 crisis, UNIDO and the contractor will adapt the time schedule as required (inception phase). It is a requirement that the contractor employs local expert(s) working from STP (local consulting fees apply) to ensure quality data and local buy-in. The proposed plan for implementation of activities and deliverables:

Deliverables	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Deliverable 1 – Inception report												
Deliverable 2 – Baseline assessment of market conditions												
Deliverable 3 – Implementation framework and a compliance framework												
Deliverable 4 – Development of MEPS												
Deliverable 5 – Conceptualization of labeling programs												
Deliverable 6 – Regulation for the implementation and compliance of MEPS and a labeling program												
Deliverable 7 – Materials of Capacity Building Workshop and webinar												

In addition, the contractor will be required to deliver the following:

- Item **High-resolution photographs (min. 3 MB, at least 20)** – that illustrate the undertaken activities. The consultants will cede all appertaining rights to unlimited use of the respective pictures to UNIDO and the Government of São Tomé and Príncipe.
- Item **All used raw files and calculation sheets** in editable form (e.g. xls). All files need to be handed over and become property of MOPIRNA and UNIDO. Collected data will be distributed through the national energy information system.

## 5. Coordination and Reporting

### Project coordination and communication

The contractor will report to the UNIDO Project Manager and his Team in Headquarters (Vienna) and the National Project Coordinator and his team at MOPIRNA/DGRNE in São Tomé and Príncipe. Moreover, the contractor will coordinate closely with other international partners (particularly UNDP, WB/AFAP and AfDB). All draft and final deliverables are subject to approval by UNIDO and MOPIRNA. The contractor will coordinate on a day-to-day basis closely with the local UNIDO team at MOPIRNA. The local team will support the contractor but it is the overall responsibility of the contractor to collect reliable quality data through its local team. Moreover, the contractor will coordinate with the UNIDO contracted consultants assigned to develop the NEEAP. Relevant information will be shared openly.

### Coordination with local and international stakeholders

All relevant documents developed by the contractor undergo a review and quality assurance by the established national Technical Committee (TC) on EE comprising relevant national and international stakeholders and

partners. The contractor will present relevant deliverables to the TC as requested. By this opportunity, the contractor will strengthen the expertise of the TC to guarantee the participation of industry, professional associations, government, trade union, and other stakeholders. The assignment requires close cooperation and coordination with the national key stakeholders of the EE market in STP, particularly EMAE, AGER, MOPRINA, DGRNE, AFAP, EMAE and DGA, as well as international partners, particularly UNDP, AfDB and WB.

#### Coordination with relevant projects

The contractor will closely coordinate with other starting EE initiatives in STP. This includes particularly the bulb replacement program implemented by WB in partnership with AFAP and EMAE. The envisaged MEPS will ensure the long-term sustainability of these short-term interventions. The contractor will also closely coordinate with the starting EE activities of the AfDB particularly addressing generation, transmission, and distribution losses.

Moreover, the contractor will closely coordinate with the UNIDO team working on the *Energy Efficient Lighting and Appliances in Southern and Eastern Africa - EELA* project, in partnership with the East African Centre for Renewable Energy and Energy Efficiency (EACREEE) and the Southern African Center for Renewable Energy and Energy Efficiency (SACREEE). The EELA project seeks to create market and institutional conditions to transform the market environment to stimulate increased diffusion of efficient lighting products and appliances across all sectors in Southern Africa Development Community (SADC) and East African Community (EAC) regions. It is also worth indicating that the development of regionally harmonized Minimum Energy Performance Standards (MEPS) for lighting and appliances for both SADC and EAC is a key output of the EELA project.

According to a recent report of the EELA project, the SADC and EAC region have already introduced energy efficiency policies for lighting and electric appliances. Some countries have also developed MEPS and labeling schemes. For instance, from the EAC region, Kenya counts with MEPS for lighting, air conditioners, refrigerators, and motors, and with a labeling scheme for the first three mentioned products. Moreover, this country has a testing lab dedicated to lighting. While, in the SADC region, South Africa has an outstanding development in the establishment of MEPS and labeling programs for lighting, air conditioners, refrigerators, and the implementation of a national testing lab for lighting and refrigerators. In South Africa, all regulations are mandatory.

Apart from that, the contractor will coordinate with the UNIDO National Project Coordinator and the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) in Praia, Cape Verde, on the EE standard work on the national and regional level. Since 2010, UNIDO has supported ECREEE in the development and implementation of the ECOWAS Energy Efficiency Policy (EEP) and national action plans. ECREEE has developed several regional MEPS for lighting and appliances. Based on the adopted National Action Plan for Energy Efficiency (PNAEE), Cape Verde has created a national system for energy certification under five axes: equipment and household appliances, IEC, buildings, electricity distribution, and cooling. In the residential sector, two of the main goals were to start labeling fridges, air conditioners, televisions, and light bulbs; and, to replace all lighting, cutting off incandescent light bulbs by 2020 on residential and industrial sectors, and street lighting. Moreover, the intervention on public lighting is considered an important factor to address energy distribution losses. Relevant documents of an implemented GEF-funded UNDP project in Cape Verde are available in Portuguese.

## **6. Qualification, evaluation and language criteria**

Received technical bids need to comply with and will be evaluated according to the following criteria:

	<b>MINIMUM ELIGIBILITY REQUIREMENTS</b>	<b>VALUE</b>	<b>SCORE</b>
1	Immediate availability of the contractor; ability to implement the assignment despite the COVID-19 travel restrictions; to ensure data collection and local buy-in the employment of local experts in STP is a requirement.	Yes	qualify
		No	does not qualify
2	Registered consulting company or institution as a legal entity with at least seven (7) years of public and private consulting experience in the area of energy efficiency, and experience in Sub Sahara Africa (please provide a copy of the <u>Certificate of Incorporation</u> ).	Yes	qualify
		No	does not qualify
3	Financial Strength of the company. Please provide the completed and signed <u>UNIDO Financial Statement Form</u> .	Yes	qualify
		No	does not qualify
4	Completed and signed Statement of Confirmation (Annex 1 to the TOR).	Yes	qualify
		No	does not qualify
5		Yes	qualify

	Completeness of the technical and separate financial offer (e.g. CVs, track-record, legal and financial documents, all-in price incl. all taxes).	No	does not qualify
6	Full proficiency in Portuguese; at least one team member (preferable the team leader is proficient in English).	Yes	qualify
		No	does not qualify
7	The Team Leader holds at least a master's degree in engineering and demonstrates at least fifteen (15) years of consulting experience in the international energy efficiency and renewable energy sector; the Team Leader needs to demonstrate relevant experience with similar complex assignments in Sub Sahara Africa. The expert will convene a team of specialists (that includes at least one Energy Efficiency Expert) which demonstrates a proven track record and relevant experience in projects related to this assignment; The work-time diagram reflects the substantial involvement of the Team Leader.	convincing	qualify
		poor	does not qualify
8	At least one Energy Efficiency Expert with an advanced degree in engineering, science, energy or another relevant discipline is part of the project team. The Energy Efficiency Expert shall have a minimum of seven (7) years of professional consulting experience regarding EE standards for lighting and electric appliances and knowledge on the legal framework of standardization bodies. She/he demonstrates experience with market assessments and the creation of similar national compliance and implementation frameworks. She/he must demonstrate experience in the design and development of project proposals and understand the functioning of energy efficiency systems and markets. The work-time diagram reflects the substantial involvement of the EE expert.	convincing	qualify
		poor	does not qualify
9	One Legal Advisor with an advanced degree in regulation is part of the team. The Legal Advisor should have a minimum of five (5) years of professional experience in energy regulation. She/he must demonstrate experience in the design and development of regulation and legal framework in energy sector, ideally including secondary EE legislation.	convincing	qualify
		poor	does not qualify
10	Track-record and work experience of the <u>proposed project team</u> (not only for the company) in Africa (including Lusophone Africa) is a requirement for the team. The employment of domestic expert(s) in line with local consultancy rates is a requirement; sufficient working days for local consultants are included in the work-time diagram.	Yes	qualify
		No	does not qualify
<b>CRITERIA FOR THE QUALITY ASSESSMENT OF TECHNICAL OFFERS</b>		<b>VALUE</b>	<b>SCORE</b>
1	Quality and coherence of the overall technical offer and efficiency of the proposed execution modality and team set-up; technical offers shall reflect the analytical capacity of the project team and avoid just a repetition of the text in the TOR).	convincing	20%
		regular	10%
		poor	0%
2	Quality of the proposed methodologies to elaborate the deliverables of this assignment; provided references to international best practice examples, which could be adapted are and asset.	good	20%
		regular	10%
		poor	0%
3	Quantity and quality of the provided track-record and work experience of the project team regarding energy efficiency assessments, policies, regulation, standards (particularly MEPS), compliance and implementation frameworks, labelling schemes (please provide examples/evidence of documents co-authored by team members).	good	20%
		regular	10%
		poor	0%
4	Quantity and quality of the provided track-record of written similar assessment reports, energy efficiency assessments, policies, regulation, standards (particularly MEPS), compliance and implementation frameworks, labelling schemes. The bidder shall include evidence on developed reports.	good	20%
		regular	10%
		poor	0%
5	Scope of work experience in Sub Sahara Africa or similar island contexts; work experience in the energy sector of other Portuguese-speaking countries is an asset.	good	20%
		regular	10%
		poor	0%
<b>MAXIMUM SCORE</b>			<b>100%</b>

In accordance with UNIDO procurement rules the technical acceptable bid with the lowest (**all-inclusive**) price will be awarded. Only technical proposals with a quality score of 70% or more will qualify. UNIDO reserves the right to request additional information from bidders if necessary.

## 7. Application Procedure

Interested and qualified bidders shall submit their written proposals in Portuguese:

- Technical proposal (including proposed approach and methodology, work and activity plan, detailed CVs of experts, copies of university degrees, certifications, licenses as well as a proven track record of implemented assignments); the proposal shall refer to best practice examples of similar MEPS processes;
- Separate financial proposal in USD including all costs and taxes (includes a detailed work-time-expert-diagram indicating daily rates for individual team members); offers without clearly stating the all-in price will be rejected;
- Documents demonstrating the quality of the track-record of the project team with regard to areas such as RE&EE policies and secondary legislation, standards for lighting and electric appliances, and legal framework of standardization bodies.

Bidders are requested to submit their proposals by registering on the UNIDO e-procurement portal (<https://procurement.unido.org/>). In case of difficulties, please contact the UNIDO Help Desk at [procurement@unido.org](mailto:procurement@unido.org).

## 8. Further information

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- GEF-UNIDO CEO Endorsement Document, <https://open.unido.org/projects/ST/projects/150124>
- GEF Project Website: <https://dgrne.org>
- Relatório Nacional do Ponto de Situação das Energias Renováveis e Eficiência Energética em São Tomé e Príncipe”, ALER/UNIDO (2020), <https://www.aler-renovaveis.org/en/activities/publications/national-reports/sao-tome-and-principe-renewable-energy-and-energy-efficiency-status-report/>
- UNIDO Energy Policy and Data Gap Analysis (2021)
- Least-Cost Power Development Plan for São Tomé and Príncipe, Agência Fiduciária de Administração de Projetos (AFAP) and World Bank
- EELA project: <https://www.eacreee.org/project/energy-efficient-lighting-and-appliances-eela-project-southern-and-eastern-africa>
- [www.unido.org](http://www.unido.org) and [www.gn-sec.net](http://www.gn-sec.net)



### STATEMENT OF CONFIRMATION

On behalf of (insert name of company or institution): \_\_\_\_\_, I hereby attest and confirm that the company/organization:

- a) Possesses the legal status and capacity to enter into legally binding contracts with UNIDO for the supply of equipment, supplies, services or work.
- b) Is not insolvent, in receivership, bankrupt or being wound up, and not under administration by a Court or Judicial Officer, and that it is not subject to the suspension of its business or legal proceedings for any of the foregoing reasons.
- c) Has fulfilled all its obligations to pay taxes and social security contributions.
- d) Has not, and that its Directors and Officers have not, within the last five years been convicted of any criminal offence related to professional conduct or the making of false statements or misrepresentations as to their capacity or qualifications to enter into a procurement or supply contract.
- e) Pursues zero tolerance policy to all forms of corruption, including extortion and bribery.
- f) That UNIDO, in the event that any of the foregoing should occur at a later time, will be duly informed thereof, and in any event, will have the right to disqualify the company/institution from any further participation in its procurement proceedings.
- g) That UNIDO shall have the right to disqualify the company/institution from participation in any further procurement proceedings, if it offers, gives or agrees to give, directly or indirectly, to any current or former staff member of UNIDO a gratuity in any form, an offer of employment or any other thing of service or value, as an inducement with respect to an act or a decision of, or a procedure followed by UNIDO in connection with a procurement proceeding.
- h) Does not have any conflict of interest such as the following:
  - i. None of the bidder's key personnel is associated - financial, family, employment wise - with concerned UNIDO officials, UNIDO experts/consultants recruited under the relevant project;
  - ii. no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the offer, have been given, received, or promised in connection with the subject ITB;
  - iii. company and/or its affiliates did not participate in the preparation of the concerned procurement process, its design or the bidding documents, including, but not limited to, the technical specifications, terms of reference,

- and the scope of works, being subsequently used by UNIDO;
- iv. the company directly or indirectly controls, is controlled by or is under common control with another bidder;
  - v. receives or has received any direct or indirect subsidy from another bidder;
  - vi. has the same legal representative as another bidder;
  - vii. has a relationship with another bidder, directly or through common third parties (except declared sub-contractors), that puts it in a position to influence the bid of another bidder, or influence the decisions of UNIDO regarding the bidding process;
  - viii. submits more than one bid in the bidding process, for example, on its own and separately as a joint venture partner (except as declared sub-contractor) with another bidder. A bidder's submission of more than one bid (except as declared sub-contractor) will result in the disqualification of all bids in which such bidder is involved; or
- i) The company is not debarred from business with the United Nations and other organizations;

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Place (City and Country): \_\_\_\_\_

Date: \_\_\_\_\_