



Terms of Reference (TOR)

For the provision of services related to the development assessments, policy guidelines and regulation for solar thermal energy market uptake in São Tomé and Príncipe

UNIDO Project Title:

“Building institutional capacity for a renewable energy and energy efficiency investment programme for São Tomé and Príncipe” (ID 200158)

Date: 4 March 2024

1. General Background Information

The United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability. The mission of UNIDO, as described in the *Lima Declaration* adopted at the fifteenth session of the UNIDO General Conference in 2013 as well as the *Abu Dhabi Declaration* adopted at the eighteenth session of UNIDO General Conference in 2019, is to promote and accelerate inclusive and sustainable industrial development (ISID) in Member States. The relevance of ISID as an integrated approach to all three pillars of sustainable development is recognized by the 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs), which will frame United Nations and country efforts towards sustainable development. UNIDO’s mandate is fully recognized in SDG-9, which calls to “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”. The relevance of ISID, however, applies in greater or lesser extent to all SDGs. Accordingly, the Organization’s programmatic focus is structured in four strategic priorities: Creating shared prosperity; Advancing economic competitiveness; Safeguarding the environment; and Strengthening knowledge and institutions.

Sao Tomé and Príncipe (STP) comprises a total area of 1,001 km², including islands and islets (the two largest islands São Tomé with 859 km² and Príncipe with 142 km², including the adjacent islets). As a Small Island Developing State (SIDS) and least developed country (LDC), 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.

UNIDO in partnership with the General Directorate for Natural Resources and Energy (DGRNE) of the Ministry of Infrastructure and Natural Resources (MIRNA, former MOPIRINA) and the National Designated Authority (NDA) at the Ministry of Planning, Finance and Blue Economy (MPFEA) are implementing the GCF readiness project “Building institutional capacity for a renewable energy and energy efficiency investment programme for São Tomé and Príncipe”. It is being executed in close coordination with the ongoing GEF funded UNIDO project “Strategic program to promote renewable energy and energy efficiency investments in the electricity sector of São Tomé and Príncipe”. It is also linked with the regional activities of the Central African Centre for Renewable Energy and Energy Efficiency (CEREEAC), which was recently established by UNIDO and the Economic Community of Central African States (ECCAS) in Angola, Luanda.

The project contributes to the nation’s 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 ECCAS. The success of the vision 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. Therefore, the GCF project aims to strengthen the capacities of the Government of Sao Tome and Principe (STP) to formulate and implement a paradigm-shift renewable energy (RE) and energy efficiency (EE) investment program, which will enable the country to achieve its climate mitigation targets in the Nationally Determined Contribution (NDC) and the 3rd National Communication on Climate Change (NCCC). Through RE&EE improvements, the country aims at reducing its GHG emissions significantly in comparison to the reference scenario 2012-2030.

The GCF project addresses demand and supply-side barriers which hinder the market introduction of new sustainable energy technology products, services and business models in STP. It includes support for RE&EE policy and regulation, knowledge management, capacity building, as well as investment and business facilitation. The focus regarding renewables lies on specific regulations and practical documents/procedures, which aim to reduce risks for private participation (e.g. IPPs, PPPs, auto-producers, mini-grids) and project finance (equity, concessional and non-concessional finance), particularly in the area solar photovoltaics (PV) and run-off-river micro/small hydro power. The activities in the energy efficiency sector focus particularly on modalities to reduce non-technical grid losses, energy efficiency standards for appliances and transport, as well as efficient cooking.

Moreover, the support also taps on innovative areas such as the application of solar thermal systems. The National Renewable Energy Action Plan (NREAP) and the National Energy Efficiency Action Plan (NEEAP) foresees the development of technical studies, policies, regulation and incentives to facilitate the market uptake of solar thermal systems for the residential sector, clinics, tourism, agriculture and industrial processes. The documents highlight the positive impact regarding the shaping of peak hours and the created added value in terms of local job creation and revenues.

Therefore, in this context, UNIDO is seeking consulting support for the development of a baseline assessment, policy guidelines and a draft regulation to spur the introduction of solar thermal heating and cooling (SHC) technologies in different energy consumption sectors in Sao Tome and Principe. To learn more about UNIDO go to www.unido.org, to learn more about the project "Building institutional capacity for a renewable energy and energy efficiency investment programme for São Tomé and Príncipe" visit the link: <https://open.unido.org/projects/ST/projects/200158>.

2. Specific issues addressed by the assignment

SHC opportunities and challenges in Sub Sahara Africa and SIDS

The African continent is endowed with excellent solar resources potentials. Even in the equatorial regions that experience greater cloud cover, the Global Horizontal Irradiance (GHI) solar resource is among the best on the planet. Beyond this equatorial band, in most northern and southern areas of the continent, the Direct Normal Irradiance (DNI) resource is among the best on the planet.

According to Africa Energy Outlook 2019, it is a policy opportunity for the Sub-Saharan Africa region to harness energy more efficiently in all end-use sectors, particularly building codes for new buildings and more efficient industrial processes, as well as efficiency standards for cooling and heating appliances and systems, as a way to support economic development and offset growing energy demand. The solar thermal system, specifically for heating water for domestic, commercial and industrial use is a very important tool in mitigating the demand for needed electricity in many LDCs and SIDS.

Despite the abundant presence of solar resources on this continent, the market is still limited in terms of solar heating and cooling (SHC) equipment. Despite growing markets in Sub Sahara Africa since 2000, the use of the SHC remains extremely low. The 2023 Solar Heat Worldwide report identifies

relevant installed capacities in Botswana, Burkina Faso, Cape Verde, Ghana, Kenya, Lesotho, Mauritius, Mozambique, Namibia, Nigeria, Senegal, South Africa and Zimbabwe.

Despite convincing economics, the introduction of SHC products and service face manifold barriers which are well studied. Particularly at the level of SIDS, where most of the applications of water heating or steam generation in industrial projects consume fossil fuels (diesel) and electricity. According to scientific studies, a 3 m² area of solar collector corresponds to 2,1 kWh for daily consumption of 150 liters of hot water, which allows, therefore, a saving of 3,400 kWh and avoids the emission of 2300 kg of CO₂ to the environment.

SHC opportunities in Sao Tomé and Príncipe

Henceforth, the clear and enormous need for adoption of solar energy technologies in STP, whose strategic equatorial location with advantageous climatological solar irradiance (potential around 4 kWh/kWp) allows the exploration of solar energy for various purposes. Undertaken technical assessments of UNIDO indicate very promising economics and times of amortisation for solar thermal technologies in comparison the inefficient electric heaters based on the burning of diesel fuels. Currently, the enormous potential of solar thermal is untapped as there are no public institutions (eg. hospitals, schools, public enterprises) that utilize the technology to satisfy their heating/cooling and hot water pumping needs. The same occurs with private enterprises, such as large hotels, industries, or fish processing factories in Sao Tome and Principe. Currently, there are no specific policy mechanisms or incentives in place.

There is no clear data regarding solar thermal potential in STP. Experiences in other countries indicate that it could be relevant to further study the use of solar thermal technologies to heat water and dry agricultural products. The solar drying of cacao and coffee beans is already practice on the island. The measures proposed in the NREAP and NEEAP include conducting studies to fill this information and data gaps. Furthermore, the energy plans recommend that regulations should be established for an energy compensation system for incorporating solar thermal energy in public and private real estate infrastructure projects. Initially, the focus will be on the hotel and tourism sector, where electricity consumption is high, but the measure also covers infrastructure for other purposes such as health, education, government buildings, etc. The legal regime for self-production of electricity already exists in STP and it will be necessary to confirm that it can be applied in the specific case of the hotel sector. The viability of solar thermal energy for water heating shall be studied and therefore, regulated and encouraged.

Solar thermal technologies

In solar thermal technologies, energy is captured through solar thermal panels, also called solar collectors. They are the simplest, most economical, and best-known systems to harness the sun, and are used in homes, hotels, and companies to heat water for showers, swimming pools, heat environments, or even in industrial processes. The panels are simple and have the function of transferring the heat from the solar radiation to the water or fluid that passes through them to be used as a heat source. Below are the most common solar thermal water heating system technologies:

- **Open flat solar collectors**- normally used for heating swimming pools and operating at low temperatures (28 to 30°C). They do not have a transparent cover, nor any type of thermal insulation, the collector body is made of thermoplastic materials, polypropylene, EPDM or special rubbers;
- **Closed plane solar collectors**- used up to an average temperature of 60°C and provide the environmental conditioning for a better transfer of the heat from the solar energy to the water. The closed flat solar collector is basically composed of 5 main characteristic elements, whose performance can vary according to the material used in each element:

- Transparent cover (glass) and a sealing system that produces greenhouse effect, i.e. easy penetration of the sun rays and difficult to get out;
 - Absorbing plate, usually dark in color for better absorption of solar energy for transfer to the tubing;
 - Internal piping (copper pipes) for the flow of the fluid to be heated through the interior of the collector plate;
 - Thermal insulation that allows the heat from the sun radiated into the plate not to be exchanged with the environment at the bottom of the plate;
 - Structural box to give structure to all the elements of the collector.
- **Evacuated tube solar collector**- the system consists of an evacuated tube with two concentric borosilicate glass tubes with their lower ends closed. The edges of the ends are sealed to each other and the vacuum exists only in the annular space between the two tubes, the lower tube is connected directly to the tank. Therefore a battery of 15-40 such tubes is connected directly to the horizontal reservoir, with water circulating in this system by thermosiphon.

In STP, solar thermal applications do not yet benefit similar traction as those of other renewable energy sources such as photovoltaic solar, or hydroelectricity. Solar thermal is most applied for solar water heater uses in urban areas (e.g., houses, hotels, clinics, and hospitals), and solar dryers intended for the conservation of fishing resources, which has the potential to replace the traditional methods of food conservation.

Introducing and promoting the use of solar thermal energy for the production of domestic hot water is an economically viable alternative for households, government sectors and the hotel industry that use electric heating systems. Furthermore, it is added to the need of implementing solar cooling applications for refrigeration and air conditioning. It has the benefits of significantly reducing electricity bills, as well as reducing the national energy demand and generating multiple economic and environmental benefits resulting from the saving of fossil fuels for electricity generation.

3. The scope of the proposed contracted services

The main objective of the UNIDO contracted assignment is to provide the General Directorate for Natural Resources and Energy (DGRNE)/MIRNA with first basic guidance on how to promote market uptake of solar thermal products (components) and services in STP. This requires a proper analysis of the technological alternatives, technical and regulatory guidance for their use, and a regulation to encourage consumers and suppliers to purchase more efficient and cleaner alternatives while generating jobs and local revenues. Thus, the contractor will provide the following services:

1. *Develop a baseline report and assess the status of solar thermal energy utilized in STP that identifies the institutional, regulatory and technical gaps, as well as the feasible and affordable technology options, considering also the creation of local added value in terms of jobs and revenues;*
2. *Develop solar thermal policy guidelines and draft a regulation to incentivise the introduction of solar thermal applications in tourism, health, public, residential and industrial sectors (e.g. agriculture, food production) to facilitate the uptake of solar thermal markets;*
3. *Develop a short concept note for a potential solar thermal project to be proposed to international partners for funding;*
4. *Execute a training on solar thermal best practices and presents the results of previous phases and deliverables of the assignment in a webinar organized by UNIDO.*

The main objective of this consultancy support is to develop a baseline assessment to pave the way for the development of policy guidelines and a regulation to incentive market development of solar thermal applications. Primary and secondary information shall be collated using mixed-method

approaches, including consultations with national stakeholders and energy users to ensure the needs of the STP population are taken into account. Some of the relevant institutions to be consulted would be EMAE, AGER (the national regulator), Ministry of Tourism, Culture, Commerce and Industry (SENAPIQ-STP), and other key stakeholders identified by the contractor in consultations with DGRNE/MIRNA. The work will be complemented by the development of a concept note and capacity-building activities through the conduction of trainings and webinars. The latter to be organized by UNIDO in coordination with the GN-SEC network. The assignment may also build the basis for a regional approach to be facilitated by UNIDO through the newly inaugurated clean energy centre CEREEAC in Luanda, Angola. Specifically, the contractor will perform the following activities and provide the respective deliverables:

3.1. First Phase: Develop a baseline report and assess the status of solar thermal energy utilized in STP that identifies the institutional, regulatory and technical gaps, as well as the feasible and affordable technology options, considering also the creation of local added value in terms of jobs and revenues;

Subactivities:

- Define a mixed method approach to gather key information and data on solar thermal energy utilization, technologies, and most feasible applications for the country;
- Conduct limited fieldwork research to understand the feasibility of the solar thermal applications by consulting as well relevant stakeholders in the area (tourism, health, public, residential and industry sectors as indicated above);
- Gather quantitative and qualitative information linked to solar thermal policies and potential opportunities for the spread of solar thermal solutions based on best practices, mainstreaming gender and youth dimensions;
- Evaluate the impacts of using water heating systems to reduce electricity consumption in tourism, health, public, residential and industrial sectors;
- Develop a baseline assessment that provides the clear status quo and opportunities of solar thermal solutions in the country, including disaggregated data.

3.2. Second Phase: Develop solar thermal policy guidelines and draft a regulation to introduce solar thermal applications in tourism, health, public, residential and industrial sectors (e.g. agriculture, food production) to facilitate the uptake of solar thermal markets;

Subactivities:

With the data and the information collected in the previous phase, the contractor is to develop an action plan and draft a regulation to spur market development on solar thermal solutions by conducting the following:

- Identify the gaps in national policies to spur market development of solar thermal solutions;
- Review international experiences, especially from Sub-Saharan countries, in introducing solar thermal solutions in a sustainable way;
- Understand and identify the local and sectoral needs to identify the feasibility of incorporating or spreading solar thermal technologies, outlining the demand and supply side;
- Map national/regional (public or private) organizations and technical vocational education and training institutes (TVETs) and other capacity-building training centres fostering the adoption of solar thermal that could become key partners of a national solar thermal initiative;
- Define social, environmental and economic benefits of solar thermal applications to help policymakers to identify the far-reaching impacts of solar thermal investment;
- Define policy guidelines to complement the NREAP and NEEAP with their respective package of strategies to uptake the solar thermal market;

- Draft a regulation to spur the introduction of solar thermal technologies in tourism, health, residential, public and industry sectors, by defining incentives and quality infrastructure measures to guarantee the technical quality of commercialized components in the country;
- Identify the most immediate channel to mobilize resources to support the implementation of a new project proposal on solar thermal.

3.3. Third phase: Develop a short concept note for a potential solar thermal project in tourism, health, residential, industry and public sectors to be proposed to international partners for funding;

Subactivities:

- Design a concept proposal in agreement with the UNIDO Headquarters team and the PMU at the national level DGRNE/MIRNA/NDA.
- Develop a short concept note proposal that includes; e.g.; background information, components, activities, logical frameworks, tentative budget.

4. Deliverables, General Time Schedule and payment schedule

All produced end-products need to be provided by the contractor fully edited, designed (incl. graphs) and ready to be developed in Portuguese. The concept note will be the only deliverable to be provided in English. All the documents are subject to rounds of quality reviews and feedback loops, which might take some time and cause longer delays. The documents will be reviewed by UNIDO, DGRNE/MIRNA/NDA and a technical committee comprising local and international experts.

The assignment is of cross-sectoral nature and will require coordination with national stakeholders responsible for energy, environment, health and other concerned sectors in STP. The list of direct beneficiaries includes DGRNE, the NDA, the General Regulatory Authority (AGER), the Sao Tomean Ministries Agriculture and Forestry, Health, gender groups and the Autonomous Region of Principe (RAP). The detailed deliverables of the assignment are explained below:

| Tasks/Activities | Deliverables | Tentative schedule | Location |
|--|--|--|-------------------|
| <p>1. Inception meeting and work plan validation</p> <p>The contractor will provide an inception report, incl. detailed work-time diagram, applied methodology, list of key literature, stakeholders, schedule of consultations, indicative tables of content for the baseline study. The inception report and commencement of the assignment requires approval by UNIDO, DGRNE and NDA. At least two online inception meetings will be required.</p> | <p>Inception report Min. 5 A4 pages in Portuguese incl. detailed activity plan, time schedule, list of key literature, applied methodologies, schedule of stakeholder consultations, indicative tables of content of assessment reports in Portuguese;</p> | <p>One month after the contract signature (2 working days)</p> | <p>Home based</p> |

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| <p>2. Develop a baseline report on solar thermal energy</p> <p>The contractor shall develop a baseline assessment of limited scope for the potential application of different solar thermal technologies. The document shall contain a situational analysis on the current use of heating and cooling systems in tourism, health, industry, residential and public sectors in the country (e.g. current solar drying practices for coffee). Additionally, it will integrate the opportunities and the initial identification of clear pathways to spread the implementation of solar thermal technologies in the abovementioned sectors.</p> <p>The baseline assessment must be supported by a comprehensive data collection exercise to gather qualitative and quantitative information, ensuring at least 40% and 30% participation of women and youth respectively in consultations. Similarly, it should consider consultations with relevant national and international stakeholders working on solar thermal or with a potential role in the area. The data collection will be supported by the local UNIDO team.</p> <p>During the formulation of the report, the contractor is encouraged to present and propose the report structure to the DGRNE/MIRNA and UNIDO HQ coordination teams.</p> | <p>One (1) Max. 20 A4 pages baseline assessment report provided, fully edited and designed, ready to be published in Portuguese.</p> <p>Set of data in xls. or/and csv format provided for integration in the STP energy information system.</p> | <p>Three months after contract signature (15 working days)</p> | <p>Home based and in São Tomé and Príncipe</p> |
| <p>3. Develop solar thermal policy guidelines and draft a regulation</p> <p>Based on the baseline assessment insights, the identification of the policy gaps and the review of international experiences, the policy guidelines shall provide a clear orientation to introduce solar thermal technologies in a sustainable manner, apart from, identifying the roles and responsibilities of the national institutions to incentivize the technology in different sectors.</p> <p>The team shall prepare concise efficient solar thermal policy guidelines that provide recommendations for good implementation of solar thermal pathways in Sao Tomé and Príncipe.</p> <p>Added to the policy guidelines, it shall be drafted a regulation to spur the introduction of solar thermal technologies in tourism, health, public, residential and industry sectors, by defining incentives and quality infrastructure (certification) measures to</p> | <p>One (1) Max. 10 pages A4 policy guidelines of solar thermal energy technologies, fully edited and designed, ready to be published in Portuguese.</p> <p>One (1) regulation to incentivize solar thermal solutions in key sectors, fully edited and designed, ready to be published in Portuguese.</p> | <p>Five months after contract signature (10 working days)</p> | |

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| <p>guarantee the technical quality of commercialized components in the country.</p> <p>The consultancy team will present the deliverables regularly to the established national technical committee as well as in the context of a validation meeting. It is also encouraged to include the effective and active participation of at least 40% of women. The logistics for these meetings will be provided by UNIDO and the local team at DGRNE.</p> | | | <p>Home based and in São Tomé and Príncipe</p> |
| <p>4. Develop a short concept note for a potential solar thermal project</p> <p>Develop a short concept note proposal that includes; e.g.; background information, components, activities, logical framework, implementation scheme, tentative budget. The main information will come from the two previous deliverables.</p> | <p>One (1) max. 5 pages project concept for a solar thermal project in English. All back up information should be attached to the concept note.</p> <p>One PPT pitch deck on the project to be used for engaging potential donors.</p> | <p>Five months after the contract signature (5 working days)</p> | |
| <p>5. Organize and execute an on-site training on solar thermal energy applications for at least 30 experts (at least 40% participation of women is envisaged) and present the results of the assignment in a webinar organized by UNIDO</p> <p>Organization of a one-day physical training workshop in São Tomé on the use of solar thermal energy for at least 30 multisectoral experts with at least 40% women and 30% youth. The logistics for the workshop will be provided by UNIDO and the local team at DGRNE,</p> <p>Present the deliverables of the assignment in a webinar organized by UNIDO on solar thermal market uptake in a joint webinar of the Global Network of Regional Sustainable Energy Centers (participation of at least 40% women and 30% youth envisaged).</p> | <p>One (1) Training workshop report with all media content provided to UNIDO national and HQ teams and ensure key industry stakeholders are in attendance.</p> <ul style="list-style-type: none"> - Launch calls for trainees, and publish through relevant sources, DGRNE and ALER or other websites (in Portuguese). - Deliver one (1) training including support material in Portuguese, and provide a consolidated participant list. Concept note of the training session and agenda. - Conduct structured Portuguese language training delivered in the field or at other locations. | <p>Six months after the contract signature (8 working days)</p> | |

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| | - The training report should contain gender-disaggregated data, including an evaluation of training satisfaction by a structured survey. To be provided in Portuguese. | | |
| <p>5. Stakeholders' consultation</p> <p>Following the draft policy regulations, the contractor will organize the following stakeholders' meeting. The logistics will be provide by UNIDO and the team at DGRNE.</p> <p>a. Validation workshops: of the regulation for solar thermal and the policy guidelines, for the deliberation validation to the NDA, DGRNE, UNIDO and key Ministries and national institutions with relevant mandates (at least 40% of women participation is envisaged)</p> <p>Travel missions to Sao Tome conducted. (Cost item includes flights, accommodation and working days DSA). Mission to RAP-Principe as advised by MIRNA.</p> <p>In case travel is not possible due to a pandemic or not required, UNIDO and the contractor can earmark the time and resources on other capacity building activities.</p> | <p>One (1) Validation Workshop report including media deliverables captured during the workshop, a press release on the MIRNA's websites. Workshop and training sessions could be conducted in the same field visit.</p> <p>One (1) Mission report including mission agenda, objective, and achievements, list of the stakeholders met, including gender-disaggregated data (in Portuguese)</p> | Six months after contract signature (5 working days) | |
| Total | | 45 w/d | |

The activities under this contract shall be completed within a period of six (6) months from the effectiveness of the contract. It is a requirement that the contractor employ at least one local expert 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 | | | | | | Payment Schedule |
|---|--------|---|---|---|---|---|------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| Deliverable 1 – Inception report | | | | | | | 20% |
| Deliverable 2 – Baseline report | | | | | | | 40% |
| Derivable 3 – Policy guidelines and drafted regulation | | | | | | | 30% |
| Deliverable 4 - Short project concept note | | | | | | | |

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| Deliverable 5 – Training, webinar, and stakeholder consultation report | | | | | | | 10% |
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This document will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in Portuguese; an executive summary and key findings shall be provided in Portuguese and English. 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 MIRNMA and UNIDO. Collected data will be distributed through the national energy information system.

Payments will be payable within 30 days upon receipt and acceptance of deliverable and invoice (electronic version) indicating the contract number and instalment requested.

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 MIRNA/DGRNE/NDA in São Tomé and Príncipe. Moreover, the contractor will coordinate closely with other international partners or similar interventions and UNIDO as needed. All draft and final deliverables are subject to approval by UNIDO and MIRNA/DGRNE/NDA. The contractor will coordinate on a day-to-day basis closely with the local UNIDO team at DGRNE/MIRNA. It is the overall responsibility of the contractor to collect reliable quality data through its local team. Relevant subject 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 Energy 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 experts, professional associations, government, trade union, and other stakeholders. The assignment requires close cooperation and coordination with the national key stakeholders working in the solar energy sector of STP, particularly MIRNA, DGRNE, NDA and Forestry Authorities as well as international partners, particularly World Bank, AfDB and UNDP. The contractor shall facilitate the participation of STP in international alliances related to solar thermal.

Coordination with relevant projects

The contractor will closely coordinate with any existing or previous solar thermal interventions or solutions done within the country. The contractor will also closely coordinate with the evolving high-end tourism activities of local entities particularly those addressing the innovative use of solar thermal technology. Additionally, the contractor will coordinate with the UNIDO National Project Team and is encouraged to liaise with relevant stakeholders in Cape Verde (e.g. ECREEE) or Barbados on solar thermal best practices or regional Lusophone stakeholders to encourage “SIDS-SIDS- Lusophone best practices.

6. Available Budget

The available all-inclusive budget for this assignment is **USD 40,000** (fourty-thousand US Dollars), including **USD 4,000** (four thousand USD Dollars) to cover the costs of DGRNE regarding the organization of logistics of meetings and technical committees.

7. Qualification, Evaluation and Language criteria

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

| MINIMUM ELIGIBILITY REQUIREMENTS | | VALUE | SCORE |
|---|--|--------------|------------------|
| 1 | NGOs, energy centers or registered companies with five (5) years of experience in the area of renewable energy consulting, including in solar thermal technologies; (please provide a copy of the <u>Certificate of Incorporation of company</u>). | Yes | qualify |
| | | No | does not qualify |
| 2 | Immediate availability of the contractor; ability to implement the assignment despite the COVID-19 travel restrictions; to ensure proper data collection and the employment of at least one local expert in STP is a requirement. | Yes | qualify |
| | | No | does not qualify |
| 3 | Financial Strength of the company. Please provide the completed and signed UNIDO Financial Statement Form. Profitability Profit Margin Ratio or Return on Assets Ratio should be preferably positive. Solvency A solvency ratio should be preferably more than one (1). In case of negative profit margin ratio or solvency, UNIDO may request additional documents and/or adapt payment terms and conditions. Turnover The average annual turnover for the past three (3) years (or for the period of time the bidder has been in business, if it has not yet reached three (3) years) should be at least 1 time more than anticipated value of the contract. | Yes | qualify |
| | | No | does not qualify |
| 4 | Completed and signed Statement of Confirmation (Annex 1 to the TOR). | Yes | qualify |
| | | No | does not qualify |

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| 5 | Completeness of the technical and separate financial offer (e.g. CVs, track record, legal and financial documents, all-in price incl. all taxes); | Yes | qualify |
| | | No | does not qualify |
| CRITERIA FOR THE QUALITY ASSESSMENT OF TECHNICAL OFFERS | | VALUE | SCORE |
| 1 | Quality and coherence of the overall technical offer, proposed methodology and efficiency of the proposed execution modality; technical offers shall reflect the analytical capacity of the project team and avoid just a repetition of the text in the TOR); the technical offers shall demonstrate the ability of the team conduct training and hold multi-stakeholders dialogues in Portuguese; At least one team member shall have proficiency in Portuguese. The employment of local expert with a relevant contact network is required; sufficient working days for local consultants shall be included in the work-time diagram; | good | 30% |
| | | regular | 15% |
| | | poor | 0% |
| 2 | Over ten (10) years of cumulative work experience and quality track-record of the project team regarding assignments in the area of renewable energy assessments, policies, regulations and project implementation. Qualification and experience of the project team regarding a) solar thermal assessments, policies and regulations b) solar thermal projects implementation in several sectors (e.g. public, industrial, health, tourism) are a strong comparative advantage. The Team Leader has at least a Master's degree in engineering, economics or other relevant discipline and demonstrates at least five (5) years of consulting experience in renewable energy and/or solar thermal energy. The work-time diagram reflects the Team Leader's substantial involvement. | good | 30% |
| | | regular | 15% |
| | | poor | 0% |
| 3 | Provided evidence on more than four (4) technical studies, assessments, publications, policies or regulations related to renewable energy, ideally solar thermal energy. | good | 20% |
| | | regular | 10% |
| | | poor | 0% |
| 4 | More than two (2) years of cumulative work experience of the project team in lusophone countries, SIDS or Sub Sahara Africa. | good | 20% |
| | | regular | 10% |
| | | poor | 0% |
| MAXIMUM SCORE | | | 100% |

In accordance with UNIDO procurement rules the technically acceptable bid with the most competitive (**all-inclusive**) price will be awarded. Only technical proposals with a quality score of 70 or more, while a minimum score for each technical evaluation criterion is no less than the respective regular point (10 or 15 depending on items), will qualify for the commercial evaluation. UNIDO reserves the right to request additional information from bidders if necessary.

Bidders should note that only technically compliant offers/proposals should be further considered for commercial evaluation.

9. Application Procedure

Interested and qualified bidders shall submit their **written proposals in English or 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 solar thermal solutions;
- 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; The bidder should submit the financial offer in the format shown under the Annex (breakdown of the financial proposal). Bidders must have an account in US Dollars in which they provide their financial offer.
- Documents demonstrating the quality of the track-record of the project team with regard to areas such as RE & EE policies, legislation, solar thermal energy projects, trainings and other legal energy frameworks;

Bidders are requested to submit their proposals by registering on the UNIDO e-procurement portal (<https://procurement.unido.org/>). In case of difficulties, submissions could exceptional be sent to Procurement Help Desk at procurement@unido.org.

10. Further information

- GCF-UNIDO Concept Note: <https://open.unido.org/projects/ST/projects/200158>
- GEF-UNIDO CEO Endorsement Document: <https://open.unido.org/projects/ST/projects/150124>
- GEF/GCF Project Website: <https://dgrne.org>
- NREAP, <https://www.gn-sec.net/content/national-renewable-energy-action-plan-sao-tome-e-principe>
- NEEAP, <https://www.gn-sec.net/content/national-energy-efficiency-action-plan-sao-tome-e-principe>
- São Tomé and Príncipe Renewable Energy and Energy Efficiency Status Report [UNIDO- ALER](#)
- World Bank ESMAP: [STP Power Sector Recovery Project](#)
- UNIDO Energy Policy and Data Gap Analysis (2021) for São Tomé and Príncipe
- World Bank, [Energy Access Diagnostic Report Based on the Multi-Tier Framework 2019](#)
- www.unido.org and www.gn-sec.net

UNIDO General Terms and Conditions of Contract (Annex A)

When submitting the offer to UNIDO through UNIDO Procurement Portal, the bidder should confirm the acceptance of UNIDO General Terms and Conditions of Contract including payment terms.

Note to suppliers: A circular economy is an economic system that tackles global environmental challenges like climate change, biodiversity loss, waste, and pollution. It is a framework of four principles, driven by design: eliminate waste and pollution, keep products and materials in use, regenerate natural ecosystems and use of renewable energy.

Bidders are encouraged to display the products' circularity and sustainability compliance with the Economic, Social and Governance principles under the UN Compact (<https://www.unglobalcompact.org/take-action/leadership/integrate-sustainability/roadmap/supply-chain>).