



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
TERMS OF REFERENCE (TOR)

**For the delivery of specialized on-site renewable energy technology trainings  
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)**

16 April 2024

## 1. INTRODUCTION

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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.

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 3<sup>rd</sup> National Communication on Climate Change (NCCC). Through

RE&EE improvements, the country aims to reduce its GHG emissions significantly in comparison to the reference scenario 2012-2030.

The GCF project addresses demand and supply-side barriers that 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 hydropower. 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.

To learn more about UNIDO go to [www.unido.org](http://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. BACKGROUND AND OBJECTIVE OF THE REQUIRED SERVICES

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As analysed during the design phase of the GCF Readiness intervention, the lack of skills of a broad range of public and private key stakeholders related to the planning, financing, implementation and management of renewable energy and energy efficiency projects and interventions is a major hindering factor for climate mitigation in the energy sector. This is particularly true for the main public institutional players of the energy system (e.g. DGRNE, EMAE, AGER, DGAAC, NDA, RAP).

Capacity building needs are also highlighted in the National Renewable Energy Action Plan ([NREAP](#)) and the National Energy Efficiency Action Plan ([NEEAP](#)) that state the need for capacity building of technical and professional cadres (including the support and coordination of local and foreign universities), information dissemination and awareness raising.

Therefore, UNIDO is seeking support of a contractor or consortium to conduct a series of on-site trainings on key aspects required for a successful management of the energy transition towards renewables and efficiency. The trainings will focus on professionals with strong ties to national public institutions. Regularly received proposals from private sector and the need for a coherent enabling policy and regulatory frameworks to incentivise investments in grid-connected and distributed renewable energy systems and the enforcement of energy efficiency standards, require a good understanding of a broad range of issues.

The training will be complementary to the already conducted or ongoing UNIDO capacity-building activities on solar photovoltaics (PV), small hydropower, clean cooking, solar thermal, efficiency standards for electric appliances and the transport fuel economy. The UNIDO project also facilitated the development of an online training program on sustainable energy solutions for islands, which is available free of charge in Portuguese: <https://training.gn-sec.net>. As much as possible, synergies to the envisaged training activities of the new Central African Centre for Renewable Energy and Energy Efficiency (CEREEAC), jointly established by ECCAS and UNIDO in Luanda, Angola, will be created.

In the past, some specific training activities have been conducted in the context of donor-funded projects such as the Solar Schools project implemented by the NGO “TESE” in 2011 with support from DGRNE, the Ministry of Education and the University of Science of Lisbon, that aimed at increasing access to quality education in off-grid rural areas and mini-grids through the installation of PV systems in schools with ongoing adult literacy courses. There is limited technical capacity to design, evaluate, install and operate on-grid and off-grid renewable energy systems (including hybrids and mini-grids). Moreover, there is a lack of experience in public policymaking and the regulation of the renewable energy and energy efficiency sector. The technical capacity and experience of the national utility to manage the large-scale integration of variable renewable energy technologies and to deal with smart grid and storage solutions is limited.



### 3. SCOPE OF THE CONTRACTED SERVICES AND DELIVERABLES

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Therefore, UNIDO seeks support from a contractor or a consortium to conduct a series of trainings on topics of high priority for a successful energy transition in São Tomé and Príncipe. Due the local context, trainings need to be prepared and conducted in Portuguese or quality interpretation needs to be provided by the contractor (costs not to be covered by UNIDO). Participants of the training shall be allowed to continue to use the materials after the training. **It is assumed that two to three physical training workshops/sessions will be necessary to deliver the indicated five (5) thematic modules below:**

- **Module 1:** Basic training on public policy, regulation, fiscal and non-fiscal incentives to promote the uptake of renewable energy and energy efficiency markets;
- **Module 2:** Basic training on the grid integration of variable renewable energy technologies (with focus on solar PV, run-off-hydropower and bioenergy), smart grid and storage solutions for islands, incl. digitalization aspects;
- **Module 3:** Basic training on project appraisal and design tools to determine the technical feasibility and financial viability of grid-connected and distributed RE projects, as well as energy efficiency interventions by using relevant software (e.g. HOMER, PV system, RETScreen);
- **Module 4:** Basic training on renewable energy project finance, economics and relevant financial analysis software;
- **Module 5:** Gender mainstreaming. This cross-cutting module will be mainstreamed throughout the modules 1 to 4.

Some of the modules might be combined (e.g. module 1 and 2, and module 3 and 4. Other combinations are also accepted) in one training over several days. It is the objective to train in total 150 domestic experts primarily of the main institutional players of the energy sector, as well as the private sector. The project envisages 40% women and 30% youth participation in the trainings. Due to country practice, training workshops shall be undertaken on-site. **It is expected, that two or three missions to Sao Tome are required to deliver the five modules.** Certain modules can be also combined in one workshop if required. Module 5 would be cross-cutting and will be mainstreamed in all other modules.

For cost-efficiency and due to the limited budget, the contractor shall ideally provide the trainings based on an existing curricula or already available materials. However, the materials shall be made available in Portuguese for free use beyond the trainings by the local counterparts or UNIDO. They shall include examples from Sub-Saharan Africa, small island developing states (SIDS) and beyond, in order to integrate innovations within the priority topics (e.g. considering examples of innovations from EU countries in terms of business models, agriculture and energy nexus, etc.). Ideally, the trainings shall be live-streamed by online-media to increase the participation of STP experts from Principe and the CEREAC.

The work will require close coordination with the national stakeholders responsible for energy, policy, capacity building, the regulator, as well as the ministerial focal points. The list of direct beneficiaries includes (but is not limited to) DGRNE, the NDA, the Institute of Gender, the National Water and Electricity Company (EMAE), the General Regulatory Authority (AGER), and the Autonomous Region of Principe (RAP), among others. **It is assumed that the delivery of the training modules requires at least two or three missions to Sao Tome.** More specifically, the foreseen activities and deliverables are further explained in the table below:

Activities	Sub-activities	Deliverable	Timeline	Tentative payment schedule
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<p>1. Development of an inception report, including an assessment chapter to determine the best delivery modality and training needs, and adapt/complement existing curricular and training materials with relevant examples</p>	<p><b>Activity 1.1.</b> Inception meeting with UNIDO and DGRNE, as well as further consultations with important direct beneficiaries of the trainings (e.g. EMAE, AGER, GCF focal point, RAP, Institute of Gender, other ministries) to get necessary data and information to design the trainings. The provided feedback on the needs shall be analysed and considered in the training materials.</p> <p><b>Activity 1.2.</b> The contractor will provide an inception report, incl. detailed work-time diagram, minutes of stakeholder meetings, well-analysed assessment chapter on the training needs, best training delivery methodology, software tools to be used, mechanisms to strengthen gender and youth engagement in the trainings.</p>	<p><b>Deliverable:</b> <i>Inception report</i> in English incl. detailed work-time diagram, minutes of the stakeholder meetings, assessment chapter on the best training delivery methodology, software tools to be used, and mechanisms to strengthen gender and youth engagement in the trainings.</p> <p><b>The deliverable shall be provided in English, in editable and pdf versions.</b></p>	<p>At one (1) month of the contract signature (20 working days)</p>	<p>20% upon approval of the inception report and work plan</p>
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<p>2. Preparation and implementation of the gender-responsive trainings</p>	<p><b>Activity 2.1.</b> Adapt existing training materials on the following thematic modules below and take leadership in the implementation of the on-site capacity-building workshops/sessions. It is assumed that for this first package of on-site trainings, the 1<sup>st</sup> and/or 2<sup>nd</sup> missions will take place to deliver the modules:</p> <ul style="list-style-type: none"> <li>▪ <b>Module 1:</b> Basic training, including training materials and a training guide/toolkits, on the development and application of renewable energy and energy efficiency policies regulation, fiscal and non-fiscal incentives and quality standards;</li> <li>▪ <b>Module 2:</b> Basic training, including training materials and training guide/toolkits, on the grid integration of variable renewable energy technologies (with focus on solar PV and run-off-hydropower), smart grid and storage solutions in island conditions, incl. digitalization aspects particularly targeting experts of EMAE, DGRNE, RAP, among others. The training will focus on technical issues and solutions related to the flexibilization and stabilization of the grid systems in Sao Tome and Principe in light of the NREAP investment pipeline.</li> <li>▪ <b>Module 5:</b> Basic training, including materials, on the mainstreaming of gender equality and youth empowerment</li> </ul>	<p><b>Deliverable:</b> First progress report and annexes.</p> <p>Those annexes are: Training materials and training guides/toolkits, curricular and software, agendas, one report per on-site trainings implemented (as per the 1<sup>st</sup> and/or 2<sup>nd</sup> missions) (incl. disaggregated gender and youth participation), recorded training files, feedback surveys, copies of provided certificates signed by the trainer and UNIDO;</p> <p>Training guides/toolkits are understood as descriptive/explanatory materials that provide further information about module topics. It includes all introductory, technical, financial information, exercises, etc.</p> <p><b>Progress reports shall be provided in English, while annexes that refer to knowledge products shall be provided in Portuguese.</b></p>	<p>At three ( 3 ) months a f t e r contract signature ( 2 0 working days)</p>	<p>30% upon approval of the first progress report and its annexes.</p>
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<p>3. Preparation and implementation of the gender-responsive trainings</p>	<p><b>Activity 2.1.</b> Adapt existing training materials on the following thematic modules below and take leadership in the implementation of the on-site capacity-building workshops/sessions. It is assumed that for this second package of on-site trainings, the 2<sup>nd</sup> and/or 3<sup>rd</sup> missions will take place to deliver the modules:</p> <ul style="list-style-type: none"> <li>▪ <b>Module 3:</b> Basic training, including training materials and training guide, on project appraisal and design tools to determine the technical feasibility and financial viability of grid-connected and distributed RE projects, as well as EE interventions by using tools such as (but not limited to) HOMER, PV syst, RET Screen; the training shall include practical exercises and the participating experts shall have an exam and receive a training certificate;</li> <li>▪ <b>Module 4:</b> Basic training, including training materials and training guide, on renewable energy project financing and economics. The training should enable trainees to analyze projects in a financial and economic view and to understand better the suitability of different financial and risk-mitigation instruments. The training module should include practical case studies from projects in Sub Sahara Africa or small island states.</li> <li>▪ <b>Module 5:</b> Basic training, including materials, on the mainstreaming of</li> </ul>	<p><b>Deliverable:</b> Second progress report and annexes.</p> <p>Those annexes are: Training materials and training guides/toolkits, curricular and software, agendas, one report per on-site trainings implemented (as per the 2<sup>nd</sup> and/or 3<sup>rd</sup> missions) (incl. disaggregated gender and youth participation), recorded training files, feedback surveys, copies of provided certificates signed by the trainer and UNIDO;</p> <p>Training guides/toolkits are understood as descriptive/explanatory materials that provide further information about module topics. It includes all introductory, technical, financial information, exercises, etc.</p> <p><b>Progress reports shall be provided in English, while annexes that refer to knowledge products shall be provided in Portuguese.</b></p>	<p>At five (5) months after contract signature (20 working days)</p>	<p>30% upon approval of the second progress report and its annexes.</p>
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4. Short summary of lessons learned and recommendations to enhance local capacities; and, promotion articles	<p><b>Activity 3.1.</b> The contractor will develop a short summary of lessons learned and provide a set of recommendations for further training or capacity-building modalities in Portuguese.</p> <p><b>Activity 3.2.</b> Furthermore, the contractor will prepare promotional articles on the on-site trainings delivered, ready to be published in English and Portuguese on the GNSEC and DGRNE webpages, respectively.</p>	<p><b>Deliverable:</b> Final progress report and annexes.</p> <p>Those annexes are: Lessons learned and recommendations summary in Portuguese; and, at least one article per conducted on-site training (incl. pictures), ready to be published in Portuguese and English on the DGRNE and GNSEC webpages.</p> <p><b>The progress report shall be provided in English, while annexes that refer to knowledge products in Portuguese.</b></p> <p><b>Articles shall be provided in English and Portuguese.</b></p>	At six (6) months after contract signature ( 5 working days)	20% upon approval of the final progress report and its attachments
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In addition, the contractor will be required to deliver the following:

- **All used raw files and sheets** in editable form (e.g. xls). All files need to be handed over and become property of UNIDO. UNIDO will receive the editable design documents. This will allow UNIDO to incorporate future changes. UNIDO will receive also high-resolution photographs in electronic form showcasing relevant meetings with stakeholders, energy infrastructure or project sites.
- **Feedback surveys to be filled by the participants of training**, as well as scanned copies of the provided certificates to be signed by the trainer and UNIDO/DGRNE.

#### 4. TIME SCHEDULE

The activities under this contract shall be completed within a period of six (6) months from the effectiveness of the contract. It is understood that the process might delay due to local circumstances or longer review times of documents. In case of unforeseen delays, UNIDO and a service provider shall agree on an extension of the contract duration, **without a budget increase**. The tentative plan for implementation of activities and deliverables is as follows:

Deliverables	Months					
	1	2	3	4	5	6
<b>Deliverable 1:</b> Inception report incl. all annexes (e.g. assessment chapter) in English						
<b>Deliverable 2:</b> First progress report in English; and, annexes in Portuguese (training materials and guides, curricula, training report implementation, etc.). At least the reporting on the 1st and/or 2nd on-site trainings delivered.						



<b>Deliverable 3:</b> Second progress report in English; and, annexes in Portuguese (training materials and guides, curricula, training report implementation, etc.). At least the reporting on the 2nd and/or 3rd on-site trainings delivered.	█	█	█	█	█	█
<b>Deliverable 4:</b> Final progress report in English (reporting on all implemented on-site trainings and main insights); and, annexes in Portuguese (e.g. provision of summary on lessons learned and trainings recommendations); and, at least 2 or 3 articles ready to be published in English and Portuguese.	█	█	█	█	█	█

Reports shall be provided in English, while annexes and knowledge products will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in Portuguese. In addition, the contractor will be required to deliver the following:

- 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 and CEREAC (when applicable).
- All used raw files (e.g. Power point presentations, training materials, etc.) and calculation sheets in editable form (e.g. xls). All files need to be handed over and become property of DGRNE and UNIDO. Collected data will be distributed through the national energy information system.

## 5. IMPLEMENTATION, 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 DGRNE and NDA in São Tomé and Príncipe. All draft and final deliverables are subject to approval by UNIDO and DGRNE. The contractor will coordinate on a week-to-week basis closely with the local UNIDO team at MIRN. 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. Relevant information will be shared openly. The contractor requires the employment of a local expert.

### Coordination with local and international stakeholders and programs

All relevant documents developed by the contractor undergo a review and quality assurance by the relevant national and international stakeholders and partners. The contractor will present relevant deliverables to UNIDO and the technical committee (TC). By this opportunity, the contractor will strengthen the expertise of the TC to guarantee the participation of industry, professional associations, government, trade unions, and other stakeholders during the process. The assignment requires close cooperation and coordination with the national key stakeholders of the RE&EE market in STP, particularly DGAAC, EMAE, AGER, MIRN/DGRNE, MPFEA/NDA, AFAP, EMAE, national standard bodies, as well as international partners.

## 6. PERSONNEL IN THE FIELD

To allow effective local coordination, the contractor requires the employment of a local expert in Sao Tome. Together with DGRNE, the local team member will approach national partners to get inputs and information/data for the design of the trainings. The bidders are encouraged to partner with already established local organizations.

## 7. LANGUAGE REQUIREMENTS

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The working language for this assignment will be English and Portuguese. In case the training can only be delivered in English, the contractor will provide interpretation services as part of its offer (not to be covered by UNIDO). The technical and financial offer will be provided in English.

## 8. AVAILABLE BUDGET

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The available all-inclusive budget for this assignment is **USD 79,000** (seventy-nine thousand US Dollars) and shall include all training materials to be delivered to participants.

The contractor through its provided budget shall cover the costs for flights and per diem of its team and translations costs if necessary. **The contractor shall include USD 8,000 in the offer for DGRNE to cover logistical costs for the trainings (e.g., venue).** The local team at DGRNE will assist the consultants in organizing the logistics.

## 9. FURTHER INFORMATION AND ANNEXES

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- 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>
- EE standards and compliance framework for electric appliances in STP: <https://www.gn-sec.net/pt-pt/node/12581>
- National Plan of Capacity Building for Energy Transition (DGRNE)
- São Tomé and Príncipe Renewable Energy and Energy Efficiency Status Report [UNIDO- ALER](#)
- UNIDO Energy Policy and Data Gap Analysis (2021) for São Tomé and Príncipe
- Least-Cost Power Development Plan for São Tomé and Príncipe, Agência Fiduciária de Administração Projetos (AFAP) and World Bank
- [www.unido.org](http://www.unido.org) and [www.gn-sec.net](http://www.gn-sec.net)
- Legal Regime of the Electric Sector" (RJSE), DL 26/2014