



Project Implementation Report

(01 July 2021 – 30 June 2022)

Project Title:	Strategic program to promote renewable energy and energy efficiency investments in the electricity sector of São Tomé and Príncipe
GEF ID:	9897
UNIDO ID:	150124
GEF Replenishment Cycle:	GEF-6
Country(ies):	Sao Tome and Principe
Region:	AFR – Africa
GEF Focal Area:	Climate Change Mitigation (CCM)
Integrated Approach Pilot (IAP) Programs ¹ :	Not applicable
Stand-alone / Child Project:	Stand-alone
Implementing Department/Division:	EAE/ENE/ESI
Co-Implementing Agency:	Not applicable
Executing Agency(ies):	<p>Ministry of Infrastructure and Natural Resources (MIRN) - former Ministry of Infrastructure, Natural Resources and Environment (MOPIRNA), ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)</p> <p>Other Project Partners: ALER (Lusophone Renewable Energy Association), EDP Renováveis, TESE (Association for Development), UNDP (United Nations Development Program), AfDB (African Development Bank)</p>
Project Type:	Medium-Sized Project (MSP)
Project Duration:	48
Extension(s):	<i>No extension so far. Pending to request a first extension for one year.</i>
GEF Project Financing:	USD 1,575,571
Agency Fee:	USD 149,679
Co-financing Amount:	USD 23,351,990

¹ Only for GEF-6 projects, if applicable

Date of CEO Endorsement/Approval:	03/04/2019
UNIDO Approval Date:	05/06/2019
Actual Implementation Start:	05/25/2019
Cumulative disbursement as of 30 June 2022:	1,465,069
Mid-term Review (MTR) Date:	12/02/2022
Original Project Completion Date:	05/25/2023
Project Completion Date as reported in FY21:	05/25/2023
Current SAP Completion Date:	05/25/2023
Expected Project Completion Date:	05/25/2024. <i>Pending to request a first extension for one year.</i>
Expected Terminal Evaluation (TE) Date:	12/25/2023
Expected Financial Closure Date:	12/01/2024
UNIDO Project Manager ² :	Martin Lugmayr

I. Brief description of project and status overview

Project Objective
<p>The project aims to enhance GHG emission reduction and local value creation by promoting the uptake of inclusive renewable energy and energy efficiency technology markets in Sao Tome and Principe. Through integrated interventions in the area of policy and regulation, qualification and certification, technology demonstration and investment facilitation the GEF support creates and enabling environment for large-scale market introduction of these technologies.</p> <p>With the project, the GEF 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. 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, business development and climate change adaption). 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.</p> <p>The project aims at the following Global Environmental Objectives (GEOs) and Development Objectives (DOs):</p> <ul style="list-style-type: none"> • Estimated 312,598 tCO₂e incremental direct GHG emissions reductions over the life-time of facilitated RE&EE projects and measures (tCO₂e) • At least US\$ 6.5 Billion of estimated revenues from fossil fuel savings and sustainable energy sales (products and services) over the life-time of facilitated RE&EE projects and measures • At least USD 8 million of investment in RE and EE projects and business ideas are mobilized and under implementation • Estimated 100 primary and secondary jobs created over the life-time of facilitated RE&EE investments in key economic areas • At least 5 MW of additional RE capacity and avoided electricity capacity additions through peak demand reductions due to EE projects are identified, implemented and facilitated

² Person responsible for report content

- At least 14 000 MWh/year of expected renewable energy generation and energy savings achieved through the facilitated investment projects and measures

Based on this, the core indicators are established as follows:

Project Core Indicators		Expected at CEO Endorsement
6	Greenhouse Gas Emissions Mitigated (metric tons of CO ₂ e)	<p><i>At least 1.83 million tons of CO₂e over projects lifetime:</i></p> <ul style="list-style-type: none"> • Direct: at least 312,598 metric tons of CO₂e • Indirect: at least 1,517,324 metric tons of CO₂e
11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment	<p>At least 75 participants participate in the online training programme: 25 women/50 men</p> <p>At least 100 key stakeholders are trained on sustainable energy issues by qualified trainers: 30 women/70 men</p>

Baseline

São Tomé and Príncipe (STP) is a small country in sub-Saharan Africa, which is part of the Small Island Developing States (SIDS) and, as such, faces specific challenges in relation to its size (1,001 km², 219,161 inhabitants), remoteness from major markets, dependence on a small number of economic sectors, direct investment and remittance inflows, lack of resources and a significant trade deficit. The economic sector consists essentially of the production and export of cocoa, which accounts for about 90% of total export revenues.

The largely informal tertiary sector accounts for about 60% of Gross Domestic Product (GDP), employing 60% of the working population, while the primary and secondary sectors each contribute 20% of GDP (USD 418.6 million in 2019). With regard to agricultural production, STP imports about 15% of the food it needs. However, it faces a rural exodus, with the countryside being abandoned, while traditional and subsistence cultural practices prevail. In addition, key sectors of the economy are highly vulnerable to natural, climatic and external economic shocks.

Industry has a limited share in the national economy, contributing 13.3% to the country's GDP, of which 6.3% is attributed to the construction industry. There is no heavy industry in the country and its current capacity and technological development for transforming raw materials into manufactured goods is low, mainly due to the lack of know-how. The private sector is limited to a few small and medium enterprises (SMEs) in areas such as baking, brewing, distillation of spirits from local produce (rum), palm oil, natural juices from local fruits, mineral waters, paints, soap, coconut oil, manufacturing of building materials, bricks, metal locks, wood processing, shipbuilding, energy production, clothing and furniture production. However, despite the small size of local private industry, STP offers significant business potential in the agri-food

sector, both for processing and adding value to local products, and for meeting the needs of local consumption.

Currently, STP has one of the highest power generation costs in sub-Saharan Africa. The energy sector continues to be subsidized and tariffs are not cost reflective, so the national utility company, Empresa de Água e Electricidade (EMAE), is unable to recover its costs and the country faces challenges resulting from an outdated transmission and distribution system, a power generation mix highly dependent on expensive diesel, and poor management. In addition, grid losses are worryingly high, being about 33% of power generated in 2019, according to EMAE. Losses are associated with inefficiencies in the transmission and distribution networks, accompanied by theft and fraud in the use of electricity.

STP does not yet produce fossil fuels and, therefore, all those consumed in the country are imported, making it dependent on imports and international price fluctuations. The electricity supply is characterized by frequent power cuts and load shedding, forcing businesses and providers of essential social services to run on diesel generators.

Access to electricity services has evolved positively and it is estimated that 84% of the population of São Tomé had access to electricity in 2019. STP's energy policy includes a target of achieving a 100% electrification rate by 2030, thereby ensuring that the entire population has access to reliable electricity services. In the case of grid-connected power generation, the installed generation capacity in 2019 was estimated at 29.7 MW, of which only 19.9 MW had guaranteed availability. Only 1.22 MW is hydropower, the remaining capacity being thermoelectric (fossil fuel). In addition to grid-connected generation, the island of São Tomé had three isolated (diesel) power plants in 2019, with a total installed capacity of 544 kW, of which only 178 kW had guaranteed availability. There are also a number of self-producers, not connected to the power grid, which generate locally for their own consumption, consisting mainly of hotels in the tourism sector.

The majority of the population does not have access to sustainable cooking services and relies significantly on traditional biomass (firewood) and charcoal. It is estimated that about 72% of the population uses solid fuels for cooking, with firewood used by 45.6% of households, followed by charcoal (26.5%) and oil (25.5%), with liquefied petroleum gas (LPG) used by only 1.5%. In addition to firewood, charcoal is also used for cooking and is produced locally. It is estimated that almost 75% of the wood consumed in the country is mostly illegally and irrationally exploited without any regulation or inspection.

There has been no significant measurable progress regarding the RE&EE (renewable energy and energy efficiency) 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 (photovoltaic) applications for rural households and productive uses (e.g. irrigation for agriculture, telecommunication and conservation of fish). 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.

Therefore, 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.

Please refer to the explanatory note at the end of the document and select corresponding ratings for the current reporting period, i.e. FY22. Please also provide a short justification for the selected ratings for FY22.

In view of the GEF Secretariat's intent to start following the ability of projects to adopt the concept of adaptive management³, Agencies are expected to closely monitor changes that occur from year to year and demonstrate that they are not simply implementing plans but modifying them in response to developments

³ Adaptive management in the context of an intentional approach to decision-making and adjustments in response to new available information, evidence gathered from monitoring, evaluation or research, and experience acquired from implementation, to ensure that the goals of the activity are being reached efficiently

and circumstances or understanding. In order to facilitate with this assessment, please introduce the ratings as reported in the previous reporting cycle, i.e. FY21, in the last column.

Overall Ratings ⁴	FY22	FY21
Global Environmental Objectives (GEOs) / Development Objectives (DOs) Rating	<i>Highly Satisfactory (HS)</i>	<i>Highly Satisfactory (HS)</i>
<p>The project started to show major progress during the last year. The GEF project is recognized as a key contribution for the national energy transition, considering the importance of making it inclusive by an equal gender participation in planned activities.</p>		
Implementation Progress (IP) Rating	<i>Moderately Satisfactory (MS)</i>	<i>Moderately Satisfactory (MS)</i>
<p>The project has reflected great progress during the last year across all outcomes and outputs. Some examples include (i) the publication of the National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP) which are the key policy elements for guiding energy planning in the country. Both action plans will be submitted by MIRN to the Council of Ministers to get the respective approval for its officialization and mandatory compliance in the country. (ii) The progress done for the elaboration of the Minimum Energy Performance Standards (MEPS), at this stage a baseline assessment of electric appliances with major impact on the energy load is available, together with an implementation and compliance framework on MEPS. (iii) Furthermore, there is available the conceptualization of an energy database platform to gather strategic information for decision making and to allow the proposal of further project investments.</p> <p>Added to that, the investment projects are progressing well, such as the implementation of the Santo Amaro PV system in Sao Tomé, the studies for grid stability of Príncipe, and the cooperation for installing 1.5. MW of OTEC technology. Moreover, several trainings, webinars and workshops took place within different activities of the project, as well as the implementation of the Women Sustainable Energy Program. All this was only possible with the set up of strategic partnerships with, such as UNDP, AFAB, SIDS DOCK, and Global OTEC, ALER, CIEMAT, CERMI, ITP, etc.</p> <p>A MTR was conducted that demonstrated that 70% of activities were initiated. Finally, the Government continues to commit to supporting ongoing activities, recognizing positive the impact the GEF project is making in the country and at the international level, for instance, during the African Energy Forum, and the UN Ocean Conference in June 2022. Furthermore, in July 2022, the 1st International Sustainable Energy Conference of Sao Tomé and Príncipe will take place in Sao Tomé islands to promote the national objectives and opportunities for investment. This event will gather the national government, representatives of the public and private sectors of Portugal and other international donors.</p> <p>An important achievement in 2021/22 was the approval of the UNIDO led GCF Readiness project “Building institutional capacity for a renewable energy and energy efficiency investment programme for Sao Tome and Principe”, which has a budget of around USD 1 million and will ensure the sustainability and up-scaling of activities, which were started under the GEF project. A The joint GCF/GEF Project Management Unit (PMU) was established and a national UNIDO Program Coordinator located in DGRNE/MOPIRNA has started to coordinate the GCF project implementation in close partnership with the UNIDO Project Manager and his team in UNIDO Headquarters.</p> <p>A first joint GEF/GCF Project Steering Committee was held on 23 November 2021 in Sao Tome. During the event the new GCF funded project was presented and the draft work plan discussed. It was decided</p>		

⁴ Please refer to the explanatory note at the end of the document and assure that the indicated ratings correspond to the narrative of the report

to have joint annual work plans for both projects in future. The GEF Focal Point and the GCF NDA participated in the meeting.

To catch up some of the delays by COVID and to create better synergies to the startin GCF project, UNIDO requests a non-cost project extension of one year.

Further details are provided in section II.

Overall Risk Rating	<i>Moderate Risk (M)</i>	<i>Moderate Risk (M)</i>
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There are no changes in risk rating. STP has started to recover from COVID 19 crisis and economic growth was estimated to be 2.1% of GDP in 2021, although the inflation remains at 9.5% in line with previous years. Furthermore, it is important to highlight that the war in Ukraine is making it difficult to access raw materials for manufacturing electric components, such as medium voltage cells for the PC5.

Nevertheless, UNIDO HQ, PMU at MIRN have close coordination with the contractor, UNDP, AFAB, and the national counterpart for the implementation of the PC5 and the commissioning of the Santo Amaro PV system for September 2022. Moreover, the GEF project is reinforcing current partnerships and establishing new ones, to be also complemented by the new GCF project. In light of this, the 1st Sustainable Energy Conference in Sao Tomé will contribute to attracting additional investments as stated in the energy action plans of the country.

II. Targeted results and progress to-date

Please describe the progress made in achieving the outputs against key performance indicator's targets in the project's **M&E Plan/Log-Frame at the time of CEO Endorsement/Approval**. Please expand the table as needed.

Progress to-date:

Development Impact (ultimate outcome)	KPIs/Indicators	Tracking indicators	Baseline	Targets	Report to date
Enhanced GHG emission reduction and domestic value creation through the uptake of inclusive renewable energy and energy efficiency technology markets	<ul style="list-style-type: none"> Estimated incremental direct emissions reductions (in tCO₂e) over the life-time of facilitated RE&EE projects and measures calculated through the Climate Change Mitigation Tracking Tool; Estimated revenues from fossil fuel savings and sustainable energy 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Although there have been some improvements in providing electricity to the population, in 2018, still a quarter of STP population remains without energy access although STP electrification rate in recent years has increased from 57.9% in 2012 to 74.5% in 2018; 	<ul style="list-style-type: none"> Estimated 312,598 tCO₂e incremental direct GHG emissions reductions over the life-time of facilitated RE&EE projects and measures (tCO₂e) At least US\$ 6.5 Billion of estimated revenues from fossil fuel savings and sustainable energy sales (products and services) over the life-time of facilitated RE&EE 	<p>It is still too early to report on the indicators on impact level. However, major progress in the initiation of the key GEF project activities, whose results will be reflected by the end of 2022.</p> <p>Several assessments were conducted and reports are available: the Energy Policy and Data Gap Analysis report; the Renewable Energy and Energy Efficiency in Sao Tomé and Príncipe – National Status Report; and, the GHG emission of the energy sector in STP. These documents were crucial for the development of the national energy plans recently published in February 2022: The National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP) are in process of submission to the Council of Ministers to emit a compliance regulation.</p>

	<p>sales (products and services) over the life-time of facilitated RE&EE projects and measures in USD</p> <ul style="list-style-type: none"> • Estimated number of primary and secondary jobs created over the life-time of facilitated RE&EE investments in key economic areas • Mobilized investment in RE and EE projects and business ideas under implementation (in USD) • MW of electric capacity of renewable energy investment projects in urban and rural areas developed to financial close and that commenced implementation • Estimated MW of avoided electric generation capacity addition through peak load reduction by implementing standards for efficient appliances as well as other EE measures • MWh/year of renewable energy generation and MWh/year of energy 		<ul style="list-style-type: none"> • Frequent power cuts and extensive outages; • Old transmission and distribution network poorly maintained (Technical and non-technical losses represent around 40% of electricity production in 2016); • Increasing diesel-based decentralized systems to face lengthy blackouts; • Dependence on fuel imports for thermal power grid-connected production (fossil fuel is responsible for more than 90% of the energy mix in 2016) • Small share of RE in the grid-connected energy mix compared to the potential (5,5% hydropower energy from Contador plant). No concrete EE programs under consideration. • STP total RE available capacity (grid connected and off-grid) is 5.16%. • Increasing CO₂e emissions due to dependence on thermal fossil-fuel generation. 	<p>projects and measures</p> <ul style="list-style-type: none"> • At least USD 8 million of investment in RE and EE projects and business ideas are mobilized and under implementation • Estimated 100 primary and secondary jobs created over the life-time of facilitated RE&EE investments in key economic areas • At least 5 MW of additional RE capacity and avoided electricity capacity additions through peak demand reductions due to EE projects are identified, implemented and facilitated • At least 14 000 MWh/year of expected renewable energy generation and energy savings achieved through the facilitated investment projects and measures 	<p>In terms of implementation of projects: in partnership with UNDP, AfDB, EMAE, MIRN and EFACEC, a PV system of 2.2 MWp in Sao Tome is being implemented (USD 8 million). It is being complemented with studies on the electrical grid of Principe to reinforce distribution and transmission systems for the connection of hydro and PV plants under a partnership with EDPR, TESE and GET invest. Added to that, 1.5 MW of a floating OTEC platform is under development with SIDS DOCK and Global OTEC, which represents an investment of USD 30 million. An agreement was already signed at the UN Ocean Conference in June 2022. Moreover, the development of the Minimum Energy Performance Standards was initiated with AERE.</p> <p>It is also worth mentioning that UNIDO has secured additional resources to support GEF project activities through a GCF readiness project with USD 1 million. The GCF project will cover the development and implementation of the investment plan for the country to approach other financiers, project developers and strategic partners working in the sector and provide support to the National Sustainable Energy Platform that engaged strategic local and international partners. The GCF has already started its implementation.</p> <p>Apart from that, in partnership with ALER, the Women Sustainable Energy Platform and its entrepreneurship program, and a capacity-building program for local associations were implemented to keep developing business projects within the energy sector.</p> <p>Moreover, several training workshops were conducted in partnership with ALER, ITP Energised, the Stockholm Environment Institute, and others are envisaged with AERE, EFACEC, CIEMAT. The latter based on the online tool for sustainable energy on islands.</p> <p>DGRNE and MIRN are equipped with a webpage and an energy database platform will be incorporated to make data available for investors and project developers.</p> <p>Finally, the MTR is available and the terminal evaluation is envisaged by December 2023. 70% of the GEF project activities were initiated, presenting valuable progress per outcome.</p>
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	savings achieved through the facilitated investment projects and measures				
Outcomes:	Indicators		Baseline	Targets	
<i>Outcome 1: Accelerated RE&EE market development through improved policy and regulatory framework and effective public-private coordination</i>	<p>Estimated % increase of the demand and supply of sustainable energy products and services in key economic sectors (e.g. power generation and distribution, construction, fisheries and agri-processing, tourism, transport, waste management and water and sanitation) following the introduction of policy changes (baseline 2017) by the end of the GEF project and 10-years post-project period</p> <p>% increase of turn-over of domestic sustainable energy product and service providers after the introduction of policies and incentives (baseline 2017)</p> <p>% increase of satisfaction of sustainable energy businesses with the adapted policy, regulatory and incentive framework after GEF project closure (baseline 2017);</p>		<ul style="list-style-type: none"> The policy and regulatory framework is insufficient to stimulate the uptake of demand and supply in key technology areas; low satisfaction of the private sector with the current policy, regulatory and incentive framework; Currently, the capacities of the Government to steer and coordinate the sustainable energy sector are limited. As there is no prioritisation from public side, international private sector actors with the intention to invest are not well coordinated. 	<ul style="list-style-type: none"> Estimated 20% increase of the demand and supply of sustainable energy products and services in key economic sectors (e.g. power generation and distribution, construction, fisheries and agro-processing, tourism, transport, waste management and water and sanitation) following the introduction of policy changes (baseline 2017) and by the GEF project end and a 10-years post-project period 20% increase of turn-over of domestic sustainable energy product and service providers after the introduction of policies and incentives (baseline 2017) by the GEF project end and a 10-years post-project period 30 % increase of satisfaction of sustainable energy businesses with the adapted policy, regulatory and incentive framework after GEF project closure 	<p>Considerable progress is reported in this outcome:</p> <p>The National Sustainable Energy Platform (NSEP) was established, and 4 coordination meetings have been held in order to discuss developments of the GEF project and energy plans of the country. In this same time, the GEF project is closely aligned with the cross-sectoral coordination activities of the NDC Partnership and the Green Climate Fund (GCF). UNIDO mobilized USD 1 million co-funding from GCF resources to upgrade the policy component of the GEF project. And, the GEF project supported STP in the preparation of an offer to host the new Central African Centre for Renewable Energy and Energy Efficiency (CEREEAC). The CEREEAC project document will be submitted by the end of July 2022 for approval of the UNIDO's EB.</p> <p>The online knowledge portal of DGRNE/MOPIRINA was developed (Home Dgrne DGRNE website) and an energy database platform will be integrated for the government, developers, financiers, etc. to them to have access to key information from the energy sector and cross cutting areas.</p> <p>Moreover, the Energy Policy and Data Gap Analysis and the Renewable Energy and Energy Efficiency in Sao Tomé and Príncipe – National Status Reports are available. Both documents have paved the way to outline the key strategic plans for the country: the National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP) which were published in February 2022. The NREAP and NEEAP will be submitted by MIREN to the Council of Ministers to get the respective approval for its officialization and mandatory compliance in the country.</p> <p>Furthermore, the development of the Minimum Energy Performance Standards was initiated with AERE.</p>

				(baseline 2017);	
Outputs:	Indicators		Baseline	Targets	
<i>Output 1.1: Coherent national sustainable energy policies with RE&EE targets established and under implementation</i>	<p>Number of NSEP and MOPIR/NA/DGRNE Websites established and operational in STP</p> <p>Number of meetings conducted by the NSEP</p> <p>Number and percentage of women participating in the NSEP meetings</p> <p>Number of reports on the policy, legal and regulatory framework gaps and opportunities</p> <p>Number of legal and regulatory workshops carried out</p> <p>Number and percentage of women participating in the workshops</p> <p>Number of sustainable energy plans developed</p> <p>Number of Energy Sector Databases</p>	<ul style="list-style-type: none"> 1 NSEP and 1 MORN/DGRNE Website 4 meetings of the NSEP conducted 1 Report on Legal and Regulatory Framework Gaps, 1 GHG emissions study, 1 report on Renewable Energy and Energy Efficiency in STP – National Report and 1 report on CEREAC status 1 NREAP and 1 NEEAP are available 4 NREAP and NEEAP validation workshops within the NSEP: (i) 18 February 2021; (ii) 18 March 2021 (2nd meeting); (iii) 22 April 2021 (3rd meeting); and, (iv) 22 July 2021 (4th meeting). 1 validation workshop on MEPS; and, 1 workshop for promotion of the energy plans 	<ul style="list-style-type: none"> There are no coherent RE&EE policies in place and established targets, if available, are not based on technical assessments. Moreover, there is a need to increase communication and cooperation amongst all stakeholders involved in the energy sector, including private sector ones. There is no Energy Sector Database in STP, and in fact, information on the energy sector is scarce and spread across the sectors. MOPIR/NA/DGRNE has no website. There is no NEEAP and SEforAll AA developed for STP 	<ul style="list-style-type: none"> 1 NSEP and 1 MOPIR/NA/DGRNE Website created and operational 8 meetings (2 meeting per year) of the NSEP conducted 1 Report on Legal and Regulatory Framework Gaps and Opportunities is developed 2 Sustainable Energy Plans are developed: the NEEAP and SEforAll AA. At least 4 workshops will be carried out on legal and regulatory issues (1 Gap Analysis and Recommendations Workshop; 1 Validation Workshop for the NEEAP and SEforAll AA, 1 Validation Workshop for the Incentive Package and EE standards; and 1 Workshop on the progress of the implementation of the NEEAP, SEforAll AA, incentive package, EE standards and Strategic Plan for the Development of RE in STP) Women are encouraged 	<ul style="list-style-type: none"> National Sustainable Energy Platform (NSEP) <p>To address the coordination challenges, UNIDO has supported the establishment of the National Sustainable Energy Platform (NSEP), which provides a space for regular cross-sectoral coordination and harmonization of donor activities. The first meeting was held on 17 June 2019 in Sao Tome. The second meeting was held by online means in June 2020 due to the COVID-19 crisis. Under the platform, technical committees for RE&EE were established. They review technical documents and regulations and build cross-sectoral synergies. Also, in 2021, the Coordination Committee for the Electricity Sector Transformation Program (CC-PTSE) was established under the leadership of the Prime Minister's Office. Moreover, several sub-committees were created to review documents 4 (four) meetings of NSEP took place already to discuss the advances on the energy plans. There is a regular schedule led by the Government.</p> <p>Finally, 1st SC meeting took place in parallel to the NSEP meeting in June 2019; and, having overcome COVID 19 limitations, in November 2021, the 2nd Steering Committee Meeting took place in Sao Tomé to evaluate the progress of the project and approve the respective work plan. This was also combined with an online meeting to allow the participation of international stakeholders.</p> <p>Major progress on the NSEP will be reflected during 2022 as included in the work plan 2022-2023. A consultancy will be carried out in order to better define the stakeholder's participation and their responsibilities within the investment platform in terms of sustainability and long term operation. The NSEP is expected to ensure regular participation of DGRNE/MORN, DGA/MORN, AGER, EMAE, AFAP, UNDP, ADB, INPIEG (National Institute for the Promotion of Gender Equality and Equity), ALER, representatives of NGOs and civil society organizations, among others.</p> <p>In the same time, the GEF project is closely aligned with the cross-sectoral coordination activities of the NDC Partnership and the Green Climate Fund (GCF). UNIDO mobilized USD 1 million co-funding from GCF resources to upgrade the policy component of the GEF project.</p>

				<p>to participate in the NSEP and in the Workshops. At least 40% of the participants on the NSEP and on workshops should be women.</p> <ul style="list-style-type: none"> • 1 Energy Sector Database is created and available for public consultation 	<p>The GCF Readiness proposal "Building institutional capacity for a renewable energy and energy efficiency investment programme for Sao Tome and Principe" that already started its implementation (April 2022). It was agreed with managing the GEF and GCF project through one common work plan and Project Steering Committee (PSC), during the 2nd SC meeting in November 2021. Furthermore, there is included a specific output in the GCF project to link it with the GEF project on this matter: "Output 1.2.4 Regular meetings of the NCCC, NSEP, CC-PTSE and NDC Partnership are co-organized by DGRNE/MOPIRNA in coordination with the NDA, DGE and AFAP".</p> <ul style="list-style-type: none"> • Website and Energy Sector Database <p>The GEF project is supporting the Ministry to improve its knowledge management and communication within the energy sector in general and particularly with regard to RE&EE. The online knowledge portal of DGRNE/MOPIRNA was developed (Home Dgrne DGRNE website). All project activities are being disseminated through the portal. This also includes information on all other GEF/GCF-funded projects. Three engineers from DGRNE were training on the use of software and management of the website.</p> <p>Attached to this effort, a consultant (GIS and IT consultant) was hired to set up the Energy System Database Platform based on GIS and open tools. The assignment includes the implementation of a GIS based Energy System Database Platform: the data collection, analysis (data treatment and interpretation), design and set up of the platform, including data homogenization, data model design, system architecture design and system development and deployment complete organization and structuring of the existing data. LEAP methodology will be analyzed for its incorporation in the Energy System Database Platform. The system will commit to open data standards, OGC INSPIRE directive rules, and user-friendly guidelines, allowing complete independent management by the DGRNE at MIRN. The assignment also includes training provisions for technicians of DGRNE, EMAE, and other key stakeholders of the GEF project. There is available a generic conceptualization of the Energy Data Platform and in March 2022, a data collection mission and training were carried out in Sao Tomé. Ten (10) technicians from different national</p>
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					<p>institutions - INA-Instituto Nacional de Água, DGRNE-DGA- were trained on GIS and data collection by georeferencing, apart from that, DGRNE was equipped with three GPSs to continue nurturing the database. The Energy System Database Platform will be available and operative by the end of July 2022.</p> <p>Furthermore, there is envisaged data collection activities and georeferencing of the electric grid by the end of July 2022 to complete the data available. Trained technicians will carry out the work. They are closely coordinating with the GIS and IT consultant.</p> <ul style="list-style-type: none"> • Policy, legal and regulatory framework for RE and EE • Gap analysis and recommendations <p>First, a consultant was hired to develop a GHG emission study on the energy sector from 2010 to 2019. The final document is available from June 2021. The GHG inventory quantifies the amount of GHG emissions in the energy sector to determine mitigation measures and track the progress. The GHG emission study was developed based on the IPCC guidelines and the Guide to Good Practices (GBP). It will help to better assess the GHG emission reduction of the GEF project and will contribute to the reliability of the established national GHG emission inventory. According to this study, in 2019, the energy sector emitted 163,03 Gg CO₂ eq. - 0.35% compared to the previous year.</p> <p>In order to disseminate the results of the document, a webinar was carried out in December 2021. The webinar was organised by ALER, in partnership with MIRN, DGRNE and UNIDO, using Zoom as online platform. The event had a total of 44 attendees (58% of the total registers), including 3 speakers. The official Programme, the webinar banner, dedicated newsletter, information about the speakers, their presentations and a full recording of the event are available at the event's webpage here.</p> <p>Second, the Energy Policy and Data Gap Analysis report was undertaken and is available. Aligned to it, four terms of reference (as draft versions) were prepared to hire a consultant to develop during the remaining period of the project:</p>
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					<ul style="list-style-type: none"> - "São Tomé & Príncipe Electrical Network Code"; - "Technical Regulation on the Quality of Electrical Materials Intended for Use in Low Voltage, Medium Voltage and High Voltage Electrical Installations" - "Regulation for Low Voltage Electrical Installations in São Tomé & Príncipe"; and, - "Development and enforcement of Minimum Energy Performance Standards (MEPS) for lighting and appliances in São Tomé and Príncipe". These TORs were readjusted by the UNIDO team. AERE (Alternatives pour L'énergie, les Énergies Renouvelables et L'environnement) was hired to cover related activities and the work is ongoing, further information to be provided later in the document- . <p>Apart from that, a report on Renewable Energy and Energy Efficiency in Sao Tomé and Príncipe – National Status Report is available. This document was prepared by ALER, together with DGRNE, MIRN, UNIDO, and CAMOES (Institute of the National Language of STP).</p> <p>Finally, the CEREAC baseline assessment report, including STP was finalised.</p> <ul style="list-style-type: none"> • National RE and EE policy <p>The National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP) are also available. A consultancy consortium (ITP Energised + ecosphere + SEI Stockholm Environment Institute) was contracted to develop the NREAP and NEEAP through the process: Renewable Energy and Energy Efficiency Action Plans to support the National Vision "São Tomé e Príncipe 2030: the country we need to build".</p> <p>The NREAP and the NEEAP complement the Least Cost Power Development Plan. Both documents seek to combine efforts with regional initiatives and standards, including the:</p> <ul style="list-style-type: none"> - ECOWAS Centre for Renewable Energy Efficiency (ECREEE) through the Global Network of Regional Sustainable Energy Centres (GN-SEC), - Centre for Renewable Energy and Industrial Maintenance of Cabo Verde (CERMI) in terms
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					<p>of Capacity Building actions in the renewable energy and energy efficiency fields,</p> <ul style="list-style-type: none"> - Centre for Renewable Energy and Energy Efficiency for Central Africa (CEREEAC), that will implement a set of regional programmes and initiatives aiming to develop sustainable energy across the region. Moreover, UNIDO has supported the feasibility study and project document development for the creation of the CEREEAC. <p>The NREAP and NEEAP include targets for 2030 and 2050 as well as scenarios developed and defined together with the DGRNE. In light of this, two respective sub-committees will be established within the NSEP.</p> <p>Based on the NREAP, the country will have achieved 72% of RE penetration by 2030, to be maintained until 2050 thanks to the new additions of RE capacities (69 MW until 2050). While NEEAP envisages a demand reduction of 8.7% by 2030 and of 12.9% by 2050 due to reduction in grid losses, the introduction of efficient electric equipment in all consumer sectors, and clean cooking and green transport initiatives.</p> <p>Within this work, an Energy Policy and Data Gap Analysis Report and 4 (four) ToRs were prepared. Also, the consultants carried out a capacity-building workshop and participated in a dissemination webinar on the developed plans (the latter organized by ALER, further information provided later in the document).</p> <p>The training on LEAP was conducted during the week of November 1st to November 5th, 2021. It was delivered by SEI, who are the LEAP software developers. The training mainly involved sessions introducing basic concepts about modeling and LEAP as well as practical exercises for the attendees to conduct themselves. In the last session, the model developed for STP NREAP and NEEAP was explained to the attendees. The training provided respective materials and back-to-back assistance on the software use.</p> <p>A total of 28 attendees were present, including mainly people from the DGRNE/MIRN of STP, but also people from UNIDO, UNDP, DGA, INPIEG, EMAE, AGER, DP, Câmara Distrital de Caué, and RAP. Also a few attendees from Cabo Verde were present. From STP there were 19 people, 9 men and 10 women.</p> <p>Finally, the NREAP and NEEAP will be submitted by MIRN to the Council of Ministers to get the respective approval for their officialization and mandatory compliance in the</p>
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					<p>country. This work is led by the DGRNE at MIRN.</p> <ul style="list-style-type: none"> • Legal and Regulatory Framework Workshops <ul style="list-style-type: none"> - <u>Validation workshop for the NREAP and NEEAP:</u> <p>Validation meetings took place with the NSEP and DGRNE: (i) 18 February 2021; (ii) 18 March 2021 (2nd meeting); (iii) 22 April 2021 (3rd meeting); and, (iv) 22 July 2021 (4th meeting).</p> <ul style="list-style-type: none"> - <u>Validation workshop for the incentive package and EE standards:</u> <p>Under the contract with AERE on energy efficiency standards, several validation workshops are envisaged: 1 on implementation and compliance frameworks for lighting, air conditioning, and refrigerators; 2 workshops on harmonized Minimum Energy Performance Standards (MEPs) and 2 on a labelling program. Currently, AERE has elaborated the baseline assessment of the electric equipment market of STP (for lighting, air conditioning, and refrigerators) joined with representatives of 17 institutions among government, equipment providers and traders, NGOs, private sector and international organizations. Furthermore, they made a draft version of the implementation and compliance frameworks of the MEPS available. The final document will be provided by the end of July 2022.</p> <ul style="list-style-type: none"> - <u>Workshop on the progress of the implementation of the: NEEAP, NREAP:</u> <p>ALER organized a workshop and debate on the NREAP and NEEAP in April 2022. They establish objectives, strategies, and solutions to make the country's energy transition a reality by 2030 and 2050. ALER created the event's webpage here.</p> <p>PMU at DRGNE, MIRN will continue the follow-up on the energy plans implementation and the organization of further discussions/workshops.</p>
Output 1.2: Proposals for sustainable energy legislation, standards and a package of incentives	Number of studies to identify priority changes in energy and non-energy legislation, standards and incentives		<u>Baseline:</u> There is no mechanism to support the development of sustainable energy.	<ul style="list-style-type: none"> • 1 study to identify priority changes in energy and non-energy legislation and incentives 	<ul style="list-style-type: none"> • Development of the package of incentives, secondary legislation and standards <p>A RE&EE Policy and Data Gap Analysis was undertaken and is available.</p>

<i>developed, and their implementation facilitated</i>	<p>Number of proposals for new legislation, standards and incentives developed</p> <p>Percentage % of the proposals that are adopted and commence implementation</p> <p>Number of qualification and certification standards for products and services in priority areas established and under implementation</p>			<ul style="list-style-type: none"> • At least four (4) proposals for new legislation and incentives are developed • At least 50% of the proposals are adopted and commence implementation • At least two (2) standards for qualification and certification in priority technology areas are established and under implementation (e.g. PV, hydro, solar-thermal, EE in appliances); 	<p>The NREAP and NEEAP are available and will be submitted to the Council of Ministers to make it official through a national regulation/law. Both documents include recommendations for energy sector development in terms of improvements to secondary legislation, standards and incentives for renewable energy. Based on the recommendations four proposals for RE legislation and incentives will be formulated.</p> <p>These activities will benefit from mobilised additional GCF Readiness support. It will focus on the formulation and enforcement of specific regulations, incentives and practical procedures, which aim to reduce risks for private participation (e.g. IPPs, PPPs, auto-producers), project finance (equity, concessional and non-concessional finance) and FDI. The implementation of the GCF project started its implementation in April 2022. The support includes the following:</p> <ul style="list-style-type: none"> ○ Technical assistance for the practical application of the RE legislation regarding the pipeline of utility-scale IPP projects in the area of solar PV and SHP; ○ Strengthening of the technical capacities of the utility on smart grid, storage and SHP management; ○ A net-metering regulation, practical guidelines and model templates for small-scale renewable energy auto-producers in urban and rural contexts (e.g. SHS, prosumers, mini-grids); ○ A regulation and practical guidelines for the introduction of solar-thermal applications in key industries. <p>At this stage, there is an ongoing process for the "Translation of the UNIDO Small Hydro Power Guidelines and Mini-Grid Toolkit into Portuguese" to be utilized by MIRN, EMAE and other key organizations at local level. Furthermore, TORs for EV and fuel standards are under preparation for contracting consultants/consortia through open competition by the end of July.</p>
<i>Output 1.3: EE standards for electric appliances are developed and their implementation facilitated</i>	<p>Number of baseline studies undertaken</p> <p>Number of EE standards developed</p> <p>Estimated avoided</p>	<ul style="list-style-type: none"> • 1 general baseline assessment on the residential sector is available; 1 general baseline assessment on the commercial sector is 	<ul style="list-style-type: none"> • There are no specific targets or standards for EE in place in STP. Currently, no other international partner is working on that. 	<ul style="list-style-type: none"> • One baseline study on EE appliances undertaken • At least one EE standard for appliances developed and its implementation facilitated 	<ul style="list-style-type: none"> • Development of EE standards for electric appliances • Monitoring of the implementation of the EE standards for electric appliances <p>The PMU team at MIRN has conducted a general baseline identification of the market conditions in the commercial and residential</p>

	<p>electric generation capacity addition through peak load reduction by implementing standards for efficient appliances over a period of ten (10) years</p>	<p>available; 1 detailed baseline assessment on market conditions is available (lighting, air conditions and refrigerators).</p>		<ul style="list-style-type: none"> Estimated 1 MW of avoided electric generation capacity addition through peak load reduction by implementing standards for efficient appliances over a period of ten (10) years 	<p>sectors. Both reports are available (June, 2021) and the focus is on refrigerators, lighting and air conditioning.</p> <p>As indicated above, in October 2021, AERE was hired to provide services related to the development and enforcement of Minimum Energy Performance Standards (MEPS) for lighting and appliances (air conditioning and refrigerators) in São Tomé and Príncipe. The assignment includes the following components:</p> <ul style="list-style-type: none"> - Development of a baseline assessment of the market conditions; - Development of an implementation and compliance framework (two independent documents); - Development of Minimum Energy Performance Standards (MEPS); - Conceptualization of a labeling program; - Development of a regulation; - Execution of a capacity-building workshop and webinar. <p>The baseline assessment is available and among the barriers identified are: i) Absence of specific regulations on the application of the RJSE rules. Lack of a specific political and regulatory framework for sustainable energy projects; ii) Weak coordination among the entities directly involved in the sector; iii) High customs duties associated with the import of goods; The lack of a standard Power Purchase Agreement (PPA) and a transparent tariff regime for production activities in general and renewable energy in particular, leads to uncertainty in guaranteeing investments and cost recovery. Tariffs are set at the discretion of the government since AGER is not yet acting in accordance with the regulations of the electricity sector, etc.</p> <p>AERE has conducted two consultative missions, and a third was planned for the first week of July 2022. For the elaboration of the baseline assessment, there was a participation of 23% of women in consultations. Currently, draft versions of the compliance and implementation frameworks are available. Final documents to be ready by the end of July 2022, while the elaboration of the MEPS has already started.</p>
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<p><i>Output 1.4: Strengthening STP and raising awareness to become a hub for sustainable energy and island technology demonstration</i></p>	<p>Number of conducted assessments and potential offers to host the Central African Centre for Renewable Energy and Energy Efficiency (CACREEE) in STP;</p> <p>Number of SEforAll campaigns to increase international awareness on STP as interesting place to invest in sustainable energy (RE and EE)</p> <p>Number of investment workshops and international sustainable</p>	<ul style="list-style-type: none"> • 1 assessment conducted on CEREEAC • 3 webinar on GHGs emissions study, energy plans and energy case studies • 17 sessions/workshops within the WSEP • 2 requests on sustainable energy solutions: 1 on PV and 1 on OTEC 	<ul style="list-style-type: none"> • Internationally, the investment opportunities of STP are not well known. STP is not considered as a place to test sustainable energy island solutions. • The efforts to increase tourism are not well coordinated with the sustainable energy efforts (e.g. eco-tourism). • STP does not host any relevant international (energy) 	<ul style="list-style-type: none"> • Assessment and potential offer to host the Central African Centre for Renewable Energy and Energy Efficiency (CACREEE) in STP; • SEforALL campaign increases domestic and international awareness on STP as interesting place to invest in sustainable energy (to be organized in conjunction with activity 2.2.2) • Investment workshop in Lisbon and international sustainable 	<ul style="list-style-type: none"> • Establishment and facilitation of the implementation of the awareness raising campaign "SEforAll for STP" <p>Major progress has been achieved under this output. The GEF-project supported STP to prepare an offer to host the newly established Centre for Renewable Energy and Energy Efficiency for Central Africa (CEREEAC). The process was spearheaded by UNIDO under the Global Network of Regional Sustainable Energy Centres (GN-SEC) program.</p> <p>On 3 June 2021, in Brazzaville, the Republic of Congo, the eleven Ministers of Energy of the Economic Community of Central African States (ECCAS) approved a Renewable Energy Roadmap and the creation of the Centre for Renewable Energy and Energy Efficiency for Central Africa (CEREEAC) as a specialized institution. During the meeting, it was agreed on hosting the center in</p>

	<p>energy conferences and expos organized</p> <p>Number of requests to test sustainable energy island solutions in STP</p>		<p>organisation.</p>	<p>energy conference and expo organized (to be organized in conjunction with activity 2.2.2)</p> <ul style="list-style-type: none"> At least two (2) requests to test sustainable energy island solutions in STP 	<p>Luanda, Angola. STP participated in all CEREEAC meetings.</p> <p>The CEREEAC will operate under the ECCAS umbrella and advise Angola, Burundi, Cameroon, Chad, Central African Republic, Democratic Republic of Congo, the Republic of Congo, Equatorial Guinea, Gabon, Rwanda and Sao Tome and Principe on critical issues of the energy and climate transition. As part of the economic integration efforts of ECCAS, the CEREEAC will work towards an integrated and inclusive market for sustainable energy products and services in Central Africa. Therefore, all achievements under the GEF project will be in future also disseminated and used by the CEREEAC. The project document will be submitted for approval to the EB (Executive Board) of UNIDO by the end of July 2022.</p> <p>For the implementation of a SEforALL campaign, a strategic partnership with ALER (Lusophone Renewable Energy Association) was established. The partnership includes the publishing of regular articles on the STP energy transition and investment opportunities, the organisation of three (3) webinars, the implementation of a women sustainable energy program, the organisation of an RE&EE investment workshop and conference, capacity building and mentoring program for local renewable energy associations, a business training for sustainable energy entrepreneurs in STP. Under this partnership, the three webinars took place:</p> <ul style="list-style-type: none"> - Webinar "Greenhouse Gas Emissions Inventory in the Energy Sector in São Tomé and Príncipe" on December 14th 2021. The event had a total of 44 attendees (58% of the total registers), including 3 speakers; - Webinar "Reference Case Studies in Renewable Energies in São Tomé and Príncipe, Guinea-Bissau and Cape Verde" on March 9th 2022. The webinar was organized based on the "Series of case studies on sustainable energy projects in São Tomé and Príncipe, Cape Verde and Guinea Bissau report". The event had a total of 68 attendees (58% of the total registers) including 9 speakers; - Webinar "National Renewable Energy and
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					<p>Energy Efficiency Action Plans for São Tomé and Príncipe" on April 21st 2022.</p> <p>Moreover, the "Women Sustainable Energy Program - WSEP" aims to empower women in order to promote gender equality and equity in the development of the energy sector, in accordance with the Gender and Energy Compact promoted by UNIDO, GWNET and ENERGIA.</p> <p>The WSEP was designed to be 100% online, with nationalities from São Tomé and Príncipe, Cape Verde and Guinea Bissau. The target participants were women over 18 with an entrepreneurial profile and a project idea related to Sustainable Energy. The activities included webinars and workshops, talks with inspiring women, as well as mentoring and networking sessions for the development of skills. The program involved 17 online sessions: six sessions on women empowerment, four on capacitation on renewable energy, one on entrepreneurship and a startups Workshop, followed by six weeks with local mentors and support sessions from ALER and other partners, dedicated to the development of the project business plans. The WSEP will be finalized by the end of July and an award session for the best business idea will take place at the conference in STP.</p> <p>Apart from that, STP will participate in the following events, the Africa Energy Forum 2022 from 21-24 of June 2022; and, in July 2022, the 1st Sustainable Energy Conference is taking place in São Tomé for higher dissemination of investment opportunities.</p> <p>Furthermore, UNIDO, SIDS DOCK and a private developer continue the cooperation for the development of a utility-scale Ocean Thermal Energy Conversion Plant (OTEC). The first floating OTEC Platform (1.5 MW) is being developed in partnership with the United Kingdom (UK) company Global OTEC and is expected to be deployed in 2024, helping to unburden the people of São Tomé and Príncipe from importing expensive and dirty fossil fuels, and provide a demonstration for scaling up across small islands, coastal cities and Least Developed Countries (LDCs). The activity is being implemented under the umbrella of Ocean Energy Industry Platform currently established by UNIDO in partnership with SIDS DOCK. In April 2022, a workshop took place in São Tomé, gathering</p>
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					<p>the key stakeholders of the initiative (Global OTEC, SIDS DOCK) together with the government (MIRN, Ministry of Education) and national universities to define the roadmap of this year.</p> <p>By the end of June 2022, at the UN Ocean 2022 Side Event, an agreement was signed to develop a PPA for the development and deployment of 1.5 MW of floating OTEC on Sao Tomé island. https://www.un.org/en/conferences/ocean2022</p>
Outcomes:	Indicators		Baseline	Targets	
<p><i>Outcome 2: Increased investments in sustainable energy infrastructure and businesses</i></p>	<p>Mobilized investment in RE and EE projects and business ideas that commence implementation by the end of the GEF project duration (in USD)</p> <p>Estimated % increase of sustainable energy investments in projects and business ideas by the GEF project end and a 10-years post-project period (baseline 2017)</p>	<ul style="list-style-type: none"> Approximately, USD 40 million mobilised 	<p><u>Baseline:</u></p> <p>Very low investments in RE&EE since many years. Investments were limited to small-scale solar home systems and bioenergy systems. RE penetration decreased over the years due to the lack of maintenance of hydro power stations. Moreover, domestic sustainable energy technology suppliers and service providers are nearly inexistent.</p>	<p><u>Targets:</u></p> <p>At least USD 8 million of investment in RE and EE projects and business ideas are mobilized and commence implementation by the end of the GEF project duration</p> <p>Estimated % increase of sustainable energy investments in projects and business ideas by the GEF project end and a 10-years post-project period (baseline 2017)</p>	<p>Substantial progress has been achieved under the component:</p> <p>Currently, the GEF project is supporting the development and implementation of several utility-scale projects in partnership with EMAE, private investors and international partners. This includes a PV system of 2.2 MWp in Sao Tome by the recondition of a switching station. The total estimated investment is of USD 8 million. For it, a partnership with UNDP, AfDB, EMAE, MIRN and EFACEC was established.</p> <p>Among other initiatives are the evaluation studies for reinforcement of the electric power grid of Principe through a partnership with EDPR. It also includes the evaluation of connection hydro and PV projects to be implemented by the government.</p> <p>1.5 MW of a floating OTEC platform is under development with SIDS DOCK and Global OTEC. The investment volume is around USD 30 million and first funding was mobilised from private risk capitalists. Studies are currently undertaken. The second phase of the projects considers a capacity of 8.5 MW. The project was promoted during the UN Ocean Conference (June 2022) where an agreement was signed for the deployment of the abovementioned capacity through a PPA.</p> <p>There is an additional GCF readiness project (USD 1 million) that will support the implementation of activities of the GEF project, through the design and implementation of a National Sustainable Investment Plan. Apart from that, the country was showcased in the Africa Energy Forum (June 2022, Brussels), as well as in the UN Ocean Conference (29 June, 2022), and the 1st International Sustainable Energy</p>

					<p>Conference of Sao Tomé and Príncipe is taking place in July 2022 in Sao Tomé island. It will count on the participation of international private investors, representatives of the government of STP and Portugal, international cooperation agencies (e.g. UNIDO, UNDP) and multilateral organizations (e.g. AFDB).</p> <p>Apart from that, in partnership with ALER, the Women Sustainable Energy Program -WSEP and an entrepreneurship program were implemented to develop business ideas on energy; and 5 case studies on successful energy initiatives were developed and promoted within the country and internationally to highlight lessons learned and attract the interest of further investments.</p> <p>Detailed information of the achieved results is shown below.</p>
Outputs:	Indicators		Baseline	Targets	
<p><i>Output 2.1. The STP RE and EE Status Report and the GIS-based National RE Resource Mapping identifying high-impact priority sites are developed and disseminated</i></p>	<p>Number of STP RE and EE Status Reports developed and disseminated</p> <p>Number of GIS-based National RE Resource Maps developed and disseminated</p>	<ul style="list-style-type: none"> 1 STP RE and EE report available 	<p><u>Baseline:</u></p> <p>There are no STP RE and EE Status Reports and GIS-based National RE Resource Map developed for STP.</p>	<p><u>Target:</u></p> <p>One (1) STP RE and EE Status Report developed and disseminated</p> <p>One (1) technical GIS-based National RE Resource Map developed and disseminated in engaging in RE and EE project development</p>	<p>- A Status Report of RE and EE in STP and the GIS-based National RE Resource Mapping identifying high-impact priority sites are developed and disseminated</p> <p>The Renewable Energy and Energy Efficiency in São Tomé and Príncipe - National Status Report was published in November 2020. This publication was led by ALER – Lusophone Renewable Energy Association and supported by UNIDO and the Institute for Cooperation and Language and sponsored by EDP Renováveis. A baseline chapter on STP was also developed in the context of the consultative preparatory process of the Central African Centre for Renewable Energy and Energy Efficiency (CEREEAC). The baseline report is available and the project document will be submitted to the UNIDO's EB by the end of July for approval.</p> <p>The document is available online (https://www.aler-renovaveis.org/en/activities/publications/national-reports/sao-tome-and-principe-renewable-energy-and-energy-efficiency-status-report/)</p> <p>Further information on the CEREEAC: www.cereeac.org</p> <p>Apart from that, as indicated before, a consultant (on GIS and IT) was hired to set up an Energy Data Based Platform based on GIS means that will be incorporated into the DGNRE</p>

					website, making data available for the government and national and international stakeholders.
<p><i>Output 2.2. A National Sustainable Energy Investment Plan (NSEIP) is developed and presented to investors and financiers in at least two (2) investment forums</i></p>	<p>Number of NSEIP developed</p> <p>Amount of investments in priority sustainable energy projects identified and promoted by the NSEIP (in USD)</p> <p>Number of investment forums carried out</p>		<p>Baseline:</p> <p>There is no NSEIP in place in STP.</p> <p>So far, no investment forums on sustainable energy (RE/EE) have been organised.</p>	<p>Target:</p> <p>One (1) NSEIP with investment volume of at least US\$30 million developed and publicly available on the MIRN/DGRNE website</p> <p>NSEIP presented to at least 50 financiers and investors in key events (in conjunction with output 1.4)</p>	<ul style="list-style-type: none"> - Development of the National Sustainable Energy Investment Plan (NSEIP) - Presentation of the NSEIP to potential investors and financiers in at least two (2) investment forums <p>The STP Minister of Energy was invited to participate and speak at the high-level launch event "Mission Transforming Island Lives! The Network of Regional Sustainable Energy Centres for Small Island Developing States", which was organized under the umbrella of the Global Network of Regional Sustainable Energy Centres (GN-SEC), by UNIDO, SIDS DOCK and UN-OHRLLS. The event took place on the margins of the High-Level SAMOA Pathway Midterm Review on 27 September 2019 at United Nations Headquarters.</p> <p>During the event, ECREEE and UNIDO presented an elevator pitch on a "South-South Sustainable Energy Investment Program for the Lusophone SIDS Cabo Verde, Guinea-Bissau and São Tomé & Príncipe" to the participating Ministers from SIDS and development partners. UNIDO is following up with interested donors to support the program.</p> <p>After finalized NREAP and NEEAP, the development of the NSEIP will start. Under the strategic partnership with ALER, both key events are being organized to showcase investment opportunities in STP: the Africa Energy Forum - AEF 2022 from 21-24 of June 2022; and, in July 2022, the 1ST Sustainable Energy Conference of the country is taking place in São Tomé.</p> <p>During the AEF, STP promoted the National Action Plan for Renewable Energies (NREAP) and the National Action Plan for Energy Efficiency (NEEAP) as key strategical policies for São Tomé and Príncipe and promoted the different initiatives and projects foreseen until 2030. There were 20 minutes of Country Focus sessions for São Tomé and Príncipe. Furthermore, ALER's Executive Director attended the Conference alongside the São Tomé and Príncipe representatives, co-organizing the Country Focus session, and facilitating high-level</p>

					<p>meetings and contacts during the Conference.</p> <p>Furthermore, the GCF new project tackles the development of a National Sustainable Investment Plan based on a real project and feasibility data to be presented to developers, financiers and investors among them the GCF project preparation facility or another financing window. It will bundle RE&EE investment opportunities for concessional finance and build a bridge to foreign direct investors and existing international/regional risk mitigation instruments.</p>
<p><i>Output 2.3. Demonstrate viability and feasibility of innovative renewable energy and energy efficiency investment projects</i></p>	<p>Installed capacity (in MW) of renewable energy investment projects in urban and rural areas developed to financial closure and their implementation is facilitated.</p> <p>MWh/year of expected renewable energy generation and energy savings achieved through the facilitated investment projects</p> <p>% of implemented renewable energy investment projects generating sufficient revenues to meet the operational expenses and financial obligations</p>		<p><u>Baseline:</u></p> <p>Currently there is only one grid-connected small hydro project in operation in STP (1.92 MW of installed capacity of which 1.5 MW is operational); the Contador hydropower plant.</p> <p>In rural areas there are either only diesel based mini-grids or solar home systems solutions.</p> <p>Around 40% of the generated electricity is lost through grid losses (technical and commercial) and there are no projects in place to reduce them.</p> <p>There is an opportunity to reduce peak demand through the development of EE projects and implementation of behavioural change actions.</p>	<p><u>Target:</u></p> <p>Renewable energy investment projects in urban and rural areas with a capacity of 5 MW or more are developed to financial closure and their implementation is facilitated.</p> <p>At least 14 000 MWh/year of expected renewable energy generation and energy savings achieved through the facilitated investment projects</p>	<p>- Innovative RE and EE projects (small hydro, solar, wind and/or bioenergy) with a total installed capacity of at least 5 MW are developed to financial closure and their implementation is facilitated</p> <p>UNIDO, EDP Renováveis and GETInvest have partnered to facilitate the implementation of 4 MWp of a modular PV power plant in Principe, where UNIDO committed to the reinforcement of the electrical grid. A contract between UNIDO and EDPR was signed on June 10, 2020. However, there was disagreement on the tariff conditions between EDPR and the Government.</p> <p>In this regard, EDPR has been engaged to only study the network needs and adaptation required in Principe, including the connection of the Small hydropower plant Papagaio, developed by the AfDB. Currently, the PMU STP team is proposing additional activities to complement the contract, including grid stability analyses that simulate the incorporation of a new hydro power plant named "Parrot" of 1 MW and a PV system to be implemented by the government (between 2 – 4.7 MWp), TORs are available.</p> <p>UNIDO has established a partnership with UNDP and AfDB to support the implementation of the Santo Amaro PV power plant of 2.2 MWp in two phases: i) a first phase comprises the installation of 550 kWp by UNDP; and, (ii) the second phase considers the installation of 1,640 kWp by AfDB. Both systems will be connected to a power coupling station named PC5.</p> <p>The GEF project will provide support in the expansion and reconditioning</p>

					<p>of the PC5 to allow both PV systems to be connected to the grid. The GEF project support involves civil work for the expansion of the PC5, acquisition of new MV (medium voltage) cells, electrical connections, and configuration of the SCADA system. In this line, EFACEC has been contracted to conduct the reconditioning of the PC5 switching station to allow the interconnection and the power injection of the 2-phase construction of the envisaged 2.2 MW Solar PV plant. At the moment, civil works are taking place to expand the room that will allocate the equipment and medium voltage cells are being manufactured. The commissioning of this project is planned to September 2022. This project is closely coordinated with UNDP and AfDB, EMAE and DGRNE.</p> <p>Furthermore, a consultant was hired to study the situation of Diogo Vaz, a hydro power plant located in São Tomé. A concept note was developed for the rehabilitation of an SHPP (small hydro power plant) (April 2021). The initial analysis involves the installation of a water intake on Rio Anambo and two turbines to operate a capacity of about 100 kW and generate approximately 0.8 GWh annually.</p> <p>Finally, 1.5 MW of a floating OTEC platform is under development with SIDS DOCK and Global OTEC. The investment volume is around USD 30 million and first funding was mobilised from private risk capitalists. Studies are currently undertaken. The second phase of the projects considers a capacity of 8.5 MW. This initiative was promoted by UNIDO during the Global Ocean Energy Alliance (GLOEA) at the UN Ocean Conference (June 29th, 2022), where an agreement was signed for the development of a PPA: Launching the Global Ocean Energy Alliance (GLOEA) at the UN Ocean Conference, 29 June 2022 Global Network of Regional Sustainable Energy Centers (GN-SEC)</p> <p>- Preparation of case studies and dissemination</p> <p>Under the partnership with ALER, the following case studies were developed and promoted through a webinar in March 2022:</p> <ul style="list-style-type: none"> - (Solar photovoltaic (PV) system in the DGRNE building in São Tomé and Príncipe; - Solar photovoltaic (PV) system in a fisherman's cooperative in São Tomé and Príncipe;
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<p><i>Output 2.4. Based on existing instruments, a Financing Facility is established and supports priority sustainable energy projects and business ideas</i></p>	<p>Number of Sustainable Energy Financial Facilities in place in STP (STP-SEFF)</p> <p>Number of calls for proposals of the STP-SEFF</p> <p>Number of sustainable energy investment projects or business ideas that receive support from the STP-SEFF.</p>		<p><u>Baseline:</u></p> <p>There are no financial mechanisms or dedicated financial schemes in place in STP for sustainable energy project development, investment and entrepreneurship. Due to the limited market and the lack of support for SMEs, there are hardly domestic businesses operating in the sustainable energy sector.</p>	<p><u>Target:</u></p> <p>One (1) STP-SEFF is established and operation in STP</p> <p>At least two (2) calls for proposals are carried out by the STP-SEFF</p> <p>At least five (5) sustainable energy investment projects or business ideas receive support from the STP-SEFF.</p>	<ul style="list-style-type: none"> - Creation of a Financing Facility for Sustainable Energy Projects and business ideas, and facilitation of calls for proposals under the facility <p>The project manager in STP has held several meetings with local commercial banks. It is envisaged to start this activity this year. Furthermore, the National Sustainable Investment Plan will be developed through the new GCF readiness project to approach developers, financiers and other potential donors (even within the GCF schemes, e.g. Project preparation facility or Simplified Approval Process).</p> <p>Apart from that and under the contract with ALER, the Women Sustainable Energy Program -WSEP was developed and implemented. The "Women Sustainable Energy Program" aims to empower women in order to promote gender equality and equity in the development of the energy sector, in accordance with the Gender and Energy Compact promoted by UNIDO, ENERGIA and GWNENET. This involves activities such as, webinars and workshops, talks with inspiring women, as well as</p>

					<p>mentoring and networking sessions that will allow the development skills. This program started in February and is taking place until June 2022, with weekly sessions led by ALER with the support of other partners, such as Territórios Criativos and the Association of Mozambican Women in Energy (MWE).</p> <p>22 women participated in the program, three from Guine-Bissau, eleven from Cape Verde and eight from São Tomé and Príncipe. During the WSEP implementation, project ideas have been developed by the candidates, covering the following areas:</p> <ul style="list-style-type: none"> - PV for pumping water - PV for tourism business - PV for public lighting - PV for ice production and fish preservation - PV and energy efficiency in market and restaurant - Energy of waves - Biogas - Batteries to complement wind production - Refrigerated electric transport - Energy for communities - Training and employment - Awareness <p>These project ideas come with business models to support the participants to continue with their implementation beyond the WSEP and stand out the participation of women in the energy sector. The award session for the best business idea under this program will take place at the 1ST Sustainable Energy Conference in São Tomé and Príncipe in July 2022.</p>
Outcomes:	Indicators		Baseline	Targets	
<p><i>Outcome 3: Enhanced domestic public and private sector capacities to plan, implement, operate and innovate sustainable energy products and services in island contexts</i></p>	<p>% increase of qualified (and % of certified) domestic experts working in the national sustainable energy sector in line with established standards (with indication of female % percentage)</p> <p>% increase of qualified (and % of certified) experts working in relevant energy</p>	<ul style="list-style-type: none"> • 1 capacity building assessment report is available • 1 capacity building plan is available • 13 institutions were trained: DGRNE, AGER – General Regulatory Authority, DGA – Directorate General for the Environment, EMAE, DP – Planning Department, 	<p><u>Baseline:</u></p> <p>Limited capacity of key stakeholders (e.g. project developers, policy makers, utility, finance institutions, academia)</p> <p>No training programs on the planning, installation, operation and maintenance of RE systems tailored to practitioners needs</p>	<p><u>Target:</u></p> <p>20% increase of qualified (ideally certified) domestic experts working in the national sustainable energy sector (40% female envisaged)</p> <p>20% increase of qualified (ideally certified) experts working in relevant energy institutions (40% female envisaged)</p> <p>10% increase of qualified (ideally certified) experts working in public</p>	<p>Major progress has been achieved under the component:</p> <p>As part of the STP RE&EE Status Report, the CEREEAC Baseline and Needs Assessment, and other conducted analyses, priority qualification and certification gaps were identified.</p> <p>A cooperation with the Center for Renewable Energies and Industrial Maintenance (CERMI) was established. CERMI developed an assessment of capacity building needs. Based on it, UNDP in cooperation with DGRNE and PMU STP developed the national capacity building plan, which is also taken as reference to provide trainings and organize capacity building workshops through the GEF project.</p>

	<p>institutions (with indication of female % percentage) in line with established standards</p> <p>% increase of qualified (and % of certified) experts working in public or private R&D activities (with indication of female % percentage) in line with established standards</p> <p>% increase in the use of domestic contractors and services throughout the value chain of RE&EE investments</p>	<p>SRADS/RAP –Regional Secretary for Environment and Social Development -), National Renewable Energy Associations (NREA), AENER - Santomean Renewable Energy Association and APERAS,, UNIDO, UNDP, INPIEG, Cámara Distrital de Caué, and RAP.</p> <ul style="list-style-type: none"> 39 technicians trained with CERMI; 22 women into the WSEP, 2 representatives from local associations. Into the LEAP training: 29 participants, of which 10 were women. 10 technicians were trained in GPS and georeferencing 3 engineers trained in management of the DGRNE website. 	<p>No certified domestic experts in STP working in the national sustainable energy sector and or relevant energy institutions.</p> <p>No qualification, certification and accreditation standards for RE&EE products and services</p> <p>Low involvement of the domestic private sector in sustainable energy activities (mainly imported)</p>	<p>or private R&D activities (40% female envisaged)</p> <p>20% increase in the use of domestic contractors, services and content throughout the value chain of RE&EE investments</p>	<p>Several partnerships have been established in order to conduct trainings as planned, among key stakeholders are ALER, CIEMAT, AERE, CERMI, ITP Energised, Stockholm Environment Institute, EFACEC. Several local institutions have been trained.</p> <p>The Women Sustainable Energy Program and a capacity-building program for local associations were implemented together with ALER.</p> <p>CIEMAT will provide trainings based on the online tool for sustainable energy on islands. Other thematic areas will be covered by the above-indicated stakeholders.</p> <p>The component will be further upscaled through the developed USD 1 million GCF Readiness program. The proposal includes online and on-site trainings in line with the identified gaps (e.g. smart grid and storage, EE standards, clean cooking, EV, SHP).</p> <p>Detailed information on the achieved results is shown below.</p>
Outputs:	Indicators		Baseline and Targets	Risks and assumptions	

<p><i>Output 3.1. Improved qualification, certification and accreditation framework on sustainable energy</i></p>	<p>Needs assessment conducted to identify priority qualification, certification and accreditation gaps to be addressed for products and services</p> <p>Monitoring plan and implementation methodology established (considering gender disaggregated objectives);</p> <p>Implemented Qualification, Certification and Accreditation Frameworks on Sustainable Energy</p>	<ul style="list-style-type: none"> • CEREAC Baseline and Needs Assessment available • 1 needs assessment report on capacity building is available • 1 national capacity building plan available • 1 capacity building plan for RE association implemented • 13 institutions : DGRNE, Directorate General for the Environment, EMAE, DP – Planning Department, SRADS/RAP –Regional Secretary for Environment and Social Development -), National Renewable Energy Associations (NREA), AENER - Santomean Renewable Energy Association and APERAS,, UNIDO, UNDP, INPIEG, Cámara Distrital de Caué, and RAP. • 39 technicians trained with CERMI; 22 women into the WSEP, 2 representatives from local associations. Into the LEAP training: 29 participants, of which 10 were women. 10 technicians were trained 	<p><u>Baseline:</u></p> <p>In STP there are no qualification, certification and accreditation framework and standards for sustainable energy products and services established.</p> <p>Currently, no organisation offers certified trainings in technology areas with growth potential (e.g. PV, hydro, solar-thermal, EE appliances);</p>	<p><u>Target:</u></p> <p>Needs assessment to identify priority qualification, certification and accreditation gaps to be addressed for products and services;</p> <p>Monitoring plan and implementation methodology established (considering gender disaggregated objectives);</p> <p>At least one (1) Qualification, Certification and Accreditation Framework on Sustainable Energy is implemented</p>	<p>- Capacity and training needs assessment</p> <p>As part of the STP RE&EE Status Report, the CEREAC Baseline and Needs Assessment and other conducted analysis priority qualification and certification gaps were identified.</p> <p>A cooperation with the Center for Renewable Energies and Industrial Maintenance (CERMI) in Praia, Cape Verde, was established. As part of the partnership, CERMI developed a report with recommendations for the strengthening of the qualification and certification framework in STP. Together with UNDP, the DGRNE and STP PMU are MIREN developed the capacity building plan for the country.</p>
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		in GPS and georeferencing. 3 engineers trained in management of the DGRNE website.			
<p><i>Output 3.2. Enhanced qualification and innovation capacities of public institutions in sustainable energy priority areas</i></p>	<p>Training needs assessment for MIRN/DGRNE, EMAE, AGER and other authorities undertaken</p> <p>Number of institutions and % respective staff trained in RE priority areas (e.g. hydro power, grid-connected PV)</p> <p>Number of institutions and % of staff trained on EE priority areas (e.g. monitoring and verification of standards for appliances)</p> <p>Number of gender-awareness trainings for MOPIRNA/DGRNE, EMAE, AGER.</p>	<ul style="list-style-type: none"> 1 capacity building assessment available 1 capacity building plan available 13 institutions were trained: DGRNE, AGER – General Regulatory Authority-, DGA – Directorate General for the Environment-, EMAE, DP – Planning Department, SRADS/RAP – Regional Secretary for Environment and Social Development -, National Renewable Energy Associations (NREA), AENER - Santomean Renewable Energy Association and APERAS, UNIDO, UNDP, INPIEG, Cámara Distrital de Caué, and RAP. 39 technicians trained with CERMI; 22 women into the WSEP, 2 representatives from local associations. Into the LEAP training: 29 	<p><u>Baseline:</u></p> <p>There are no special training programmes on on-grid/off-grid RE systems and to enforce, monitor, and verify standards on efficient electric appliances. There is urgent need for increased knowledge in growth areas such as hydro, PV and solar-thermal;</p>	<p><u>Target:</u></p> <p>At least one training needs assessment for MOPIRNA/DGRNE, EMAE, AGER and other authorities undertaken</p> <p>At least 20% of MOPIRNA/DGRNE, EMAE, AGER staff is trained on RE priority areas trained (e.g. hydro power, grid-connected PV)</p> <p>At least 20% of MOPIRNA/DGRNE, EMAE, AGER staff on EE priority areas trained (e.g. monitoring of standards for appliances)</p> <p>At least one (1) gender-awareness trainings for MOPIRNA/DGRNE, EMAE, AGER.</p>	<ul style="list-style-type: none"> Develop and facilitate the implementation of a special capacity building programme for MIRN/DGRNE, EMAE, AGER and other authorities on integration and management of on-grid/off-grid RE systems and enforcement, monitoring, and verification of standards on efficient electric appliances <p>There is available a Capacity Building Plan for Energy Transition for the country that was developed by UNDP together with DGRNE based also on the needs assessment on capacity building developed by CERMI. Through the coordination with PMU STP and in partnership with UNDP, trainings provided under the GEF project are aligned to the mentioned plan.</p> <p>Under the same partnership with CERMI, between November and December 2020, 5 trainings were carried out. The activity was co-funded by UNDP. The trainings were held in STP and covered different topics: 15 technicians trained in Technical and Economic Feasibility Analysis of Projects with a duration of 32 hours; ii) 4 technicians trained in Energy Audits with a duration of 32 hours; iii) 5 technicians trained in Power management with a duration of 40 hours; iv) 6 trained people in Hygiene, Safety and Health at Work with a duration of 28 hours; v) 10 technicians trained in Geographic Information Systems and Spatial Analysis with a duration of 80 hours. 39 technicians from different institutions were trained (DGRNE, AGER – General Regulatory Authority-, DGA – Directorate General for the Environment-, EMAE, DP – Planning Department, SRADS/RAP – Regional Secretary for Environment and Social Development-).</p> <p>Furthermore, under the contract with EFACEC is envisaged to train 10 technicians from EMAE and MIRN for the connection of the new PV system to the grid. The training will</p>

		<p>participants, from which 10 were women. 10 technicians were trained in GPS and georeferencing. 3 engineers trained in management of the DGRNE website.</p>		<p>involve the operation and configuration of the new installed equipment, including dependencies on the operation of the PV and the possibility of doing further changes to the configuration.</p> <p>Based on an online training tool developed by CIEMAT (Online Capacity Building Program on Sustainable Energy for Islands), described in the next output, a train of trainers workshop will take place in September 2022. The workshop will allow 25 participants to gain expertise in delivering e-learning courses. Profiles expected to participate in this training involve: Training managers and coordinators, Subject matter teachers, Learning facilitators. In addition, 25 additional participants with the following profile: IT staff, Training managers and coordinators, Subject matter teachers, Learning facilitators, will acquire knowledge in LMS Moodle Management. Both trainings will ensure the sustainability of the online training/tool based on replication.</p> <p>Similarly, CIEMAT together with CERMI will provide a face to face training on PV systems. Technicians and institutional representatives will participate in this course. The call started in June 2022 and will take place in parallel to the 1st International Sustainable Energy Conference in STP.</p> <p>Moreover, a training on MEPS and labelling is planned with AERE, as indicated before, to the end of 2022: Execution of a capacity-building workshop and webinar. Here is envisaged the participation of the Technical Committees of the GEF project.</p> <p>With ALER, other trainings were conducted:</p> <ul style="list-style-type: none"> - Mentoring and training Programme for RE Associations (described in detail in output 3.4.) - Online training for sustainable energy entrepreneurs and start-ups within the WSEP <p>This latter training implied the organization of an online business training for sustainable energy entrepreneurs and start-ups to reach at least 30 entrepreneurs ensuring a strong women participation. The workshop took place from 26 to 27 of April. The Workshop had 30 participants: the candidates from the Women's Energy Program and two</p>
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					<p>representatives of the National Associations of RE, and the remaining spots were occupied by entrepreneurs that applied to the training program.</p> <p>The Entrepreneurship and Startups Workshop (WESUP) had an intensive training program, using the Startup Academy Plan methodology, a tool that offers the entrepreneur a global view of his business model (planning, implementation and evaluation of projects at all stages of development).</p> <p>In the same line and under the development of the NREAP and NEEAP, a LEAP training was delivered by the Stockholm Environment Institute together with ITP Energised. The training took place in November 2021. A total of 28 attendees were present, including mainly people from the DGRNE/MIRN of STP, but also people from UNIDO, UNDP, DGA, INPIEG, EMAE, AGER, DP, Câmara Distrital de Caué, and RAP. Also a few attendees from Cabo Verde were present. From STP there were 19 people, 9 men and 10 women.</p> <p>Finally, UNIDO developed comprehensive quality guidelines for the planning, installation and operation of SHP systems. With support of the GEF project, the guidelines are being translated into Portuguese. A training will be conducted in 2022.</p> <p>Moreover, in partnership with the Alliance for Rural Electrification (ARE), UNIDO developed the Clean Energy Mini-Grid Policy Development Guide, including practical annexes. With support of the GEF project, the guide is being translated into Portuguese and will be made available to STP key stakeholders by conducting trainings in 2022.</p>
<p><i>Output 3.3. On-line training program on sustainable energy solutions for islands is developed in Portuguese and applied by capacity building institutions and experts in São Tomé</i></p>	<p>Number of on-line training programmes developed and under implementation</p> <p>Number of institutions including the tool in the curricula</p>	<ul style="list-style-type: none"> One online tool available 	<p><u>Baseline:</u></p> <p>There is no online training programme on sustainable energy solutions for islands in Portuguese available.</p> <p>There is no Best Practice Guide for the development of Sustainable Energy Solutions in</p>	<p><u>Target:</u></p> <p>At least one (1) online training programme on sustainable energy solutions for islands in Portuguese is developed and under implementation</p> <p>At least five (5) training institutions or trainers include</p>	<ul style="list-style-type: none"> Develop and implement a special on-line training programme in sustainable energy solutions <p>The Online Capacity Building Program on Sustainable Energy for Islands has been developed by UNIDO and SIDS DOCK in partnership with the CIEMAT (Spanish Centre for Research in Energy, Environment and Technology). The program was translated into Portuguese and was introduced in STP. The program has</p>

and Príncipe, Cabo Verde and Guinea-Bissau	<p>Number of participants undertaking the online training programme</p> <p>% of women attending the online training course</p> <p>Number of Best Practice Guides for the development of Sustainable Energy Solutions in Islands available in Portuguese</p>		<p>Islands available in Portuguese.</p>	<p>the tool in the curricula</p> <p>At least one (1) Best Practice Guide for the development of Sustainable Energy Solutions in Islands is developed in Portuguese</p> <p>At least 75 participants participate in the online training programme</p> <p>At least 40% of the target stakeholders are women</p>	<p>been developed by fulfilling CIEMAT's quality criteria in terms of scientific and technical expertise, Information and Communication Technologies (ICT) tools, methodological and pedagogical resources.</p> <p>The program includes nine online modules, which describe and analyze the following technologies and energy issues: Solar Photovoltaics, Solar Thermal and Ocean Energy technologies, Bioenergy, Energy Efficiency and Thermal Optimization in buildings, Mini-grids and Energy Storage in Insular Power Systems, E-mobility and an overview on Energy, Climate Change Mitigation and Resilience in island regions. All modules are available online in Portuguese and are free of charge (https://training.qlsec.net/course/index.php?categoryid=1).</p> <p>CIEMAT will provide one train of trainersworkshop (e-learning course + moodle platform course) in September 2022 with 25 participants with the following profiles professionals, researchers and universities. This would allow the course to be included in the curricula. Also, a face-to-face training on PV systems for 25 people will take place in July 2022 in parallel to the 1st International Sustainable Energy Conference of STP.</p>
Output 3.4: Capacity support is provided for the operationalization of the National RE Associations	<p>Business plan for the national RE associations;</p> <p>Number of registered members of the associations;</p> <p>Percentage of the administrative and operational costs of the associations covered by the generated revenues by end of the GEF project duration;</p>	<ul style="list-style-type: none"> capacity building program implemented with RE associations. 1 representative per association participated on the face-to-face training. 	<p><u>Baseline:</u></p> <p>There is a need for the National RE Associations to build their capacities on the field and on their activities.</p>	<p><u>Target:</u></p> <p>One (1) Business plan for the national RE associations;</p> <p>At least 15 registered members in each of the associations after five (5) years of operation;</p> <p>Revenues cover 100% the administrative and operational costs of the associations by end of the GEF project duration</p>	<ul style="list-style-type: none"> Develop and implement a capacity building training programme to enhance the capacity of the National RE Associations <p>São Tomé and Príncipe has two National Renewable Energy Associations (NREA), AENER - Santomean Renewable Energy Association and APERAS - Association for the Promotion of Renewable Energy and Sustainable Environment of São Tomé and Príncipe. Both were created a few years ago, but still have few members and are not fully established.</p> <p>Under the contract with ALER, both organizations participated in a mentoring and training programme. The Capacity Building Programme was tailored to the Santomean NREA, to support them in assessing their status and set up an activity plan to increase their management capacity and be fully operational. The training took place between 31st</p>

					<p>January and the 4th of February 2022 in Lisbon.</p> <p>The Training Programme was designed to provide comprehensive guidance and practical sessions to help strengthen both NREA organization and activity. It included services, membership, good governance, and the definition of measures and plans to assure their sustainability over the long term.</p> <p>Associations also participated in the "Online training for sustainable energy entrepreneurs and start-ups" organized by ALER (April, 2022).</p>
<p><i>Output 3.5. At least five (5) capacity building institutions and fifteen (15) certified trainers engage in capacity building courses on RE and EE issues</i></p>	<p>Number of trained institutions</p> <p>Number of certified trainers participating in training workshops</p>		<p><u>Baseline:</u></p> <p>There is no train-the-trainer programme on sustainable energy solutions in place in STP.</p> <p>No certified domestic experts in STP working in the national sustainable energy sector and/or relevant energy institutions</p>	<p><u>Target:</u></p> <p>One Train-the-trainers programme developed and implemented at CERMI facility</p> <p>At least five (5) capacity building institutions are trained</p> <p>At least fifteen (15) certified trainers are trained</p>	<ul style="list-style-type: none"> Train-the-trainers on the modules developed <p>The Online Capacity Building Program on Sustainable Energy for Islands was developed and published. The program was translated into Portuguese and was introduced in STP. The program has been developed by fulfilling CIEMAT's quality criteria in terms of scientific and technical expertise, Information and Communication Technologies (ICT) tools, and methodological and pedagogical resources.</p> <p>With CIEMAT: there is envisaged a train of trainers workshop for 25 participants (E-learning + LMS moodle management) in September 2022, as well as a face-to-face training on PV systems (July 2022).</p>
<p><i>Output 3.6. Improved capacities of key stakeholders through national and sub-regional trainings, by train-the-trainer approaches and training missions</i></p>	<p>Number of key stakeholders trained on sustainable energy issues by qualified trainers</p> <p>Number of domestic sustainable energy companies and start-ups that receive business training;</p> <p>% of women participating in the training sessions</p>	<ul style="list-style-type: none"> 13 institutions were trained: DGRNE, AGER – General Regulatory Authority-, DGA – Directorate General for the Environment-, EMAE, DP – Planning Department, SRADS/RAP – Regional Secretary for Environment and Social Development -, National Renewable Energy Associations (NREA), AENER - Santomean Renewable Energy 	<p><u>Baseline:</u></p> <p>Limited capacity of key stakeholders (e.g. project developers, policy makers, utility, finance institutions, academia, businessmen or businesswomen, professionals etc.)</p>	<p><u>Target:</u></p> <p>At least one hundred (100) key stakeholders are trained on sustainable energy issues by qualified trainers</p> <p>At least thirty (30) domestic sustainable energy companies and start-ups receive business training;</p> <p>At least 40% of the trained stakeholders are women</p>	<ul style="list-style-type: none"> Train 100 national stakeholders on sustainable energy issues <ul style="list-style-type: none"> With CERMI: between November and December 2020, 5 trainings were carried out in areas linked to energy power systems and maintenance. With CIEMAT: there is envisaged a train of trainers workshop for 25 participants (E-learning + LMS moodle management) in September 2022, as well as a face-to-face training on PV systems (July 2022). With ALER, other trainings were conducted: i) Mentoring and training Programme for RE Associations (described in detail in output 3.4.); and, ii) Online training for sustainable energy entrepreneurs and start-ups. With ITP Energised and Stockholm Environment

		<p>Association and APERAS,, UNIDO, UNDP, INPIEG, Cámara Distrital de Caué, and RAP.</p> <ul style="list-style-type: none"> 39 technicians trained with CERMI; 22 women into the WSEP, 2 representatives from local associations. Into the LEAP training: 29 participants, from which 10 were women. 10 technicians were trained in GPS and georeferencing 			<p>Institute together: LEAP training in November 2021.</p> <p>Other further trainings are envisaged with EFACEC on commissioning a PV system; and, with AERE on MEPS and labelling. Other trainings are planned on hydro power guidelines and the Clean Energy Mini-Grid Policy Development Guide developed by UNIDO.</p>
Outcomes:	Indicators		Baseline	Targets	
<p><i>Outcome 4: Continuous monitoring and evaluation (M&E) of the implementation of the GEF project conducted in accordance with established GEF and UNIDO procedures and guidelines</i></p>	<p>Number of project activities implemented according to work plan</p> <p>Number of expected results achieved</p> <p>Number of M&E methodologies and plan developed and implemented</p>	<ul style="list-style-type: none"> 70% of activities were initiated. 	<p><u>Baseline:</u></p> <p>The project is developed in a challenging context.</p> <p>There is a need to continuously track progress of project implementation, to ensure that the project is on track and achieves its final results.</p>	<p><u>Target:</u></p> <p>One (1) M&E methodology and plan is established and used throughout the project implementation</p> <p>At least 4 Annual Project Implementation Reports are compiled and delivered to UNIDO's project manager during the course of the project by the PMU</p> <p>At least 60% of the activities are implemented according to the Workplan at the mid of the project</p> <p>100% of the expected results are achieved at the end of the project</p>	<p>The MTR of the GEF project was conducted and is available from February 2022, the document was submitted to the donor. The TORs for the final evaluation are available and the procurement process is planned for January 2023.</p> <p>Activities are coordinated by UNIDO HQ together with PMU STP at MIRN, two SC meetings were held.</p> <p>The team has implemented measures to improve the monitoring of the project. Two technical and financial reports are available and the work plan 2022-2023 was approved during the 2nd SC meeting in November 2021.</p> <p>About 70% of the activities foreseen at project endorsement have been initiated. Several activities were affected by the COVID 19 pandemic.</p>
Outputs:	Indicators		Baseline	Targets	

<p><i>Output 4.1. Mid-term review and terminal evaluation executed</i></p>	<p>Number of project's mid-term reviews and terminal evaluations executed</p> <p>Number of project activities implemented according to work plan</p> <p>Number of expected results achieved</p>	<ul style="list-style-type: none"> • 1 MTR available • 70% of activities were initiated. 	<p><u>Baseline:</u></p> <p>There is a need to track progress of project implementation to ensure that the project is on-track to meet its main outcomes and outputs.</p> <p>There is a need to evaluate at the end if the project was successful in yielding the expected results and impacts</p>	<p><u>Target:</u></p> <p>At least 60% of the activities are implemented according to the Workplan at the mid of the project</p> <p>100% of the expected main results are achieved at the end of the project;</p>	<ul style="list-style-type: none"> • Mid-term review • Terminal evaluation <p>MHYD was hired to develop the MTR of the GEF project. The document is available from February 2022 and was submitted to GEF. The same company also developed the TORs for final evaluation, the procurement process will be launched by November 2023 since it is expected to request a project extension for one additional year.</p> <p>According to the MTR, about 70% of the activities foreseen at project endorsement have been initiated. Several activities were affected by the COVID 19 pandemic. It also contains recommendations for monitoring and project management, which are described in section VIII, "Implementation Progress".</p>
<p><i>Output 4.2. Project's progress monitored, documented and recommended actions formulated</i></p>	<p>Number of M&E methodologies and plan developed and implemented</p>	<ul style="list-style-type: none"> • Two technical and financial reports available. • Two work plans, current one from 2022 – 2023. 	<p><u>Baseline:</u></p> <p>There is a need to track progress of project implementation to ensure that the project is on-track to meet its main outcomes and outputs.</p> <p>There is a need to evaluate at the end if the project was successful in yielding the expected results and impacts</p>	<p><u>Target:</u></p> <p>One (1) M&E methodology and plan is established and used throughout the project implementation</p> <p>At least 4 Annual Project Implementation Reports are compiled and delivered to UNIDO's project manager during the course of the project by the PMU</p>	<ul style="list-style-type: none"> • M&E Framework design • M&E Framework implementation <p>UNIDO and MIRN have formalized a contract for the Project Management Unit to function within the DGRNE. The DGRNE has to coordinate with the PMU at the headquarters (Vienna) the activities to be carried out as well as follow the recommendations of the GEF Steering Committee. There is a National Project Coordinator who has to manage the first three components of the project with an annual schedule and budget.</p> <p>The first SC meeting was held on 17 June 2019 in Sao Tome. Furthermore, under the NSEP platform, technical committees for RE&EE were established. They review technical documents and regulations and build cross-sectoral synergies. Also, in 2021, the Coordination Committee for the Electricity Sector Transformation Program (CC-PTSE) was established under the leadership of the Prime Minister's Office. Moreover, several sub-committees were created to review documents 4 (four) meetings of NSEP took place already to discuss the advances in the energy plans. There is a regular schedule led by the Government.</p> <p>Finally and having overcome COVID 19 limitations, in November 2021, the 2nd Steering Committee Meeting took place in Sao Tomé to evaluate the progress of the project and approve the respective work plan. This was also combined with an online meeting to allow the participation of international stakeholders.</p>

					<p>Progress reports from PMU STP to UNIDO HQ are according to the agreement between MIRN and UNIDO. Two technical and financial reports are available. Work plan 2022-2023 is available and was approved by the SC in November 20221.</p> <p>Weekly meetings are held between PMU STP and UNIDO HQ for coordination and monitoring.</p> <p>It is important to highlight that MTR contains relevant recommendations for project monitoring: <i>"The project is progressing in line with its objectives steadily but monitoring and evaluation activities need reinforcement. The large number of activities and the dispersion of information complicate the monitoring of project progress and can result in communication problems with stakeholders. Processes need to be structured to enhance efficiency in activities. There are annual reports and work schedules that are carried out by the PMU and use standardized UNIDO templates. However, the urgent adoption and implementation of a quality management system and a Project schedule with monthly updates is recommended"</i>.</p> <p>Therefore, in order to improve the monitoring, there was agreed that PMU STP will provide UNIDO with monthly technical and financial reports, including indicators. These means were taken from May 2022.</p> <p>Finally, three Project Implementation Reports have been prepared and submitted to the donor.</p>
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III. Project Risk Management

1. Please indicate the overall project-level risks and the related risk management measures: (i) as identified in the CEO Endorsement document, and (ii) progress to-date. Please expand the table as needed.

	(i) Risks	(i) Risk level	(i) Mitigation measures	(ii) Progress to-date	New defined risk ⁵
1	Institutional and Political Risks: Political instability can drive the project off-track	Moderate	Although in the last couple of years STP has known political stability (STP has had a stable Government since 2014 up until today), before that there has been some political instability (between 1991 and 2014 STP has had 17 prime-ministers always supported by weak party coalitions). If political instability returns there is a risk that it will impact the GEF/UNIDO project development and implementation. Nevertheless, the impact on the project should	Currently, the project does not face major political challenges. It has full buy-in and the Government appreciates the "twinning" execution approach which delegates increasingly funding and technical operations to the PMU in the Ministry. UNIDO and MIRN secured additional funds to upscale the	<input type="checkbox"/>

⁵ New risk added in reporting period. Check only if applicable.

			<p>not be high as most of the activities are not expected to be impacted. The development of larger infrastructure investments may be affected due to the needed trust from investors.</p> <p><i>Probability: Low</i></p> <p><i>Mitigation Measures:</i></p> <ul style="list-style-type: none"> The GEF/UNIDO project was established in close partnership with the Government but also the utility and regulator from the very beginning. The GEF/UNIDO project will be implemented in cooperation with international partners with influence (e.g. WB, EIB, AfDB). The GEF/UNIDO project builds on SIDS-SIDS cooperation between Cabo Verde, STP and Guinea-Bissau. <p>Larger infrastructure investment projects will be developed in close cooperation with known international partners/organisations and investors (e.g. EDP Renováveis).</p>	<p>impact of the GEF project through GCF Readiness project. The implementation of the GCF project is envisaged for July 2022.</p> <p>MIRN, through the DGRNE, is providing support to the establishment of additional partnerships in the framework of the GEF project (e.g. UNDP, AfDB).</p>	
2	<p>Institutional and Political Risks: Lack of Government commitment towards RE and EE can drive the project off-track</p>	Moderate	<p>The commitment of the Government of STP to RE and EE might change, and this can hinder the project implementation. Moreover, there may be some reluctance from the Government and stakeholder's (e.g. utility) in integrating and articulating the project findings into national policy as well as to implement the established policies, regulations and investment and capacity building frameworks.</p> <p><i>Probability: Moderate - Low</i></p> <p><i>Mitigation Measures:</i></p> <ul style="list-style-type: none"> The GEF/UNIDO project has been developed based on the request from the Government of STP which has expressed its willingness and aim to develop and deploy sustainable energy (RE/EE) technologies in its energy sector. Under PC1, the project will establish the NSEP to continuously discuss and guide the sustainable energy development in the country as well as to promote cooperation among projects in the area. As such, the recommended strategy derived from these discussions will have a high level of ownership and therefore is expected to be articulated within the national political framework. In addition, in PC1 an Energy Sector Database and Website will be developed to inform interested energy sector stakeholders as well as the public in general about the energy sector, including sustainable energy development and relevance, as well as to inform on the activities and progress achieved by the different GEF/UNIDO project components. The GEF/UNIDO project under its PC3 includes capacity building and awareness raising activities for stakeholders to get more involved in sustainable energy development. 	<p>The Government continues to be strongly committed. There is even more pressure to go to renewables and energy efficiency as there are tensions on the fossil fuel debt payments and preferential terms with Angola.</p> <p>Among examples are: the implementation of a PV system of 2.2 MWp; the development of MEPS on lighting, air conditioning and refrigeration, equipment that implies high electricity consumption and increases the peak load.</p> <p>For Principe, there are also ongoing studies on grid stability for reinforcement of the electrical grid (transmission and distribution level) to reduce energy losses and evaluate the impact of additional installed capacity (hydro and PV).</p> <p>Several trainings were conducted and others are envisaged to strengthen the expertise of local institutions in energy issues, business development, e-learning and moodle platform, grid connection and commissioning, among others.</p>	<input type="checkbox"/>

3	Involvement Risk: Sector stakeholders do not participate/engage actively in the project	Low	<p>Due to the lack of information and awareness in sustainable energy technologies, there is a risk that there will be no active participation from stakeholders. However, the project aims at addressing this barrier. In addition, the very high cost of traditional energy (fossil fuel based) in the country means that organizations are looking for and considering new alternatives such as RE to reduce the dependence on fossil fuels. The level of interest and collaboration shown by enterprises during the PPG phase leads to legitimately expect strong participation.</p> <p><i>Probability:</i> very low. During the PPG stage, energy sector stakeholders as well as stakeholders from other sectors were contacted and involved in the definition of the GEF/UNIDO project. The general response was of strong support and interest to participate in the project.</p> <p><i>Mitigation Measures:</i> A well-structured national dissemination/awareness raising campaign demonstrating the viability of the investment projects and outlining the opportunities during project implementation combined with an active dialogue and involvement of associations at the national and local level during the whole project duration (e.g. through the NSEP) will ensure the desired stakeholder response and involvement in the project.</p>	Up to now no such problems were faced. Key stakeholders are committed to participating in different activities of the GEF-project. In addition, they have committed to providing support for the new GCF project.	<input type="checkbox"/>
4	Technical Risks: Delay in the development of investment projects can hinder the availability of results	Moderate	<p>The sustainable energy systems are not technically viable in the areas where they are installed, and the business models proposed do not allow beneficiaries to invest in the technology.</p> <p><i>Probability:</i> Low.</p> <p><i>Mitigation Measures:</i> The GEF/UNIDO project was designed to facilitate knowledge exchange/ cooperation with Cabo Verde and Guinea Bissau where already similar projects were implemented. In addition, the capacity-building programmes proposed involve the delivery of information and training specifically addressing and with the aim of clarifying these types of risks.</p>	<p>1) UNIDO, EDP Renováveis and GET Invest have partnered to facilitate the implementation of 4 MWp of a modular PV power plant in Príncipe, where UNIDO is committed to the reinforcement of the electrical grid. A contract between UNIDO and EDPR was signed on June 10, 2020. However, there was disagreement on the tariff conditions between EDPR and the Government.</p> <p>EDPR has complied with evaluations on the electrical grid within the contract with UNIDO. In order to complement this assignment and replace activities linked to the construction of a PV system, initially envisaged, the PMU STP team made new TORs available for grid stability analyses of Príncipe that simulate the incorporation of a new hydro power plan named "Parrot" of 1 MW and a PV system to be implemented by the government (between 2 – 4.7 MWp).</p> <p>2) Referred to the PV system of 2.2 MWp of Sao Tomé, several technical meetings are handled with UNDP, AfDB, EFACEC (contracted by UNIDO and responsible</p>	<input type="checkbox"/>

				for reconditioning the switching station), and JGH Group (contracted by UNDP for the installation of the PV generator), UNIDO, EMAE, DGRNE/MIRN and PMU STP at MIRN to ensure the coordination of activities. The commissioning of this system is envisaged for September 2022.	
5	Financial Risk: Incentive and financial support systems are insufficient.	Moderate	<p>There is a technical risk associated with the development of the investment projects due to reduced experience in the country in its development and implementation projects.</p> <p>There are no noteworthy technical risks associated to the policy measures and capacity building activities proposed by the GEF/UNIDO project. All of them are well proven interventions, tested by national experiences and in many other countries.</p> <p><i>Probability: Low.</i></p> <p><i>Mitigation Measures:</i></p> <ul style="list-style-type: none"> • Execution of activities to be implemented under PC2 will be carried out with the support from international experts/companies with demonstrated and successful past experience (e.g. EDP Renováveis). • Only mature and proven small to medium scale RE technologies are being proposed to be installed as investment projects. • Capacity building and enabling activities will pay special attention to further defining the existing baseline in order to develop effective tailored and well-targeted training programmes and curricula. • The status of projects will be regularly reviewed, and any necessary corrective actions will be promptly taken. <p>Investment project results and lessons learnt will be widely disseminated.</p>	<p>Up to now, no such problems were faced.</p> <p>UNIDO is working closely with UNDP and AfDB and private project promoters on the investment projects. Among examples is the implementation of the Santo Amaro PV plant of 2.2 MWp. This PV system will hybridize the current diesel generation power plant.</p> <p>In addition to that, a contract agreement with EDP Renováveis will be amended to reinforce grid update and stability works for Príncipe, also considering the connection of a PV system and the Parrot hydropower plant.</p>	<input type="checkbox"/>
6	Socio-economic and environmental risks Some of the sustainable energy investment projects might have some socio-economic and environmental impacts	Low	<p>Private financiers do not partner in business initiatives (incl. supporting the mechanisms package, co-finance of investment projects etc.) for beneficiaries' access to financing. In addition, the ability of companies to invest in sustainable energy projects will impact the replication of the investment projects and the long-term market for sustainable energy solutions in STP. Access to finance in STP is possible but at very high interest rates. Also, there is no experience in STP on the involvement of the local finance sector in providing financing for this type of projects.</p> <p><i>Probability: Low to moderate.</i></p> <p><i>Mitigation Measures:</i></p>	<p>Up to now, no such problems were faced.</p> <p>There have been established several partnerships to support the energy sector.</p> <p>Among remarkable alliances are the ones established with: UNDP, AfDB, EMAE, and DGRNE/MIRN; SIDS DOCK, OTEC, and DGRNE/MIRN; ALER; CIEMAT, CERM, DGRNE/MIRN.</p>	

			<ul style="list-style-type: none"> • Early dialogue with grant providers was initiated during the PPG stage and will continue throughout the GEF/UNIDO project implementation stage. • During the GEF/UNIDO project, the STP-SEFF will be established to support the development of sustainable energy projects. This will be designed and implemented with support from ECREEE that has supported the development of similar financial facilities in Cabo Verde and in Guinea-Bissau and that manages and operates its own financial facility for the ECOWAS region (EREF) • One of the key advantages to invest in sustainable energy is the offset of either grid electricity or diesel fuel – both of which are very expensive and dependent on third parties in STP. As part of the training in PC3 life cycle analysis will be taught to show the lifetime benefits of sustainable energy projects, particularly in a volatile fossil fuel market. Demonstrating these benefits is expected to lead to further investment in sustainable energy projects. • For scaling up/replicating investment projects additional technical assistance will be provided. <p>Training will also be provided to local financial institutions so that they fully understand the risks and benefits of sustainable energy projects and provide appropriate financial mechanism.</p>	Partnerships go from capacity-building activities to the implementation of renewable energy projects to mitigate socio-economic and environmental risks of the country through the implementation of clean technology and knowledge sharing.	
7	Climate Change Risk: Negative impacts of climate change	Low	<p>Some of the envisaged sustainable energy investment projects might have some limited negative social, economic and environmental impacts for a limited number of stakeholders.</p> <p><i>Probability: Low.</i> During the PPG phase, an Environmental and Social Management Plan (ESMP) (Annex N) was developed to guarantee that environmental and social elements are integrated into the project design and their impacts monitored. This Plan was carried out in close consultation with relevant stakeholders including governmental and civil society organizations as well as the private sector in line with GEF and UNIDO policy.</p> <p><i>Mitigation Measures:</i></p> <ul style="list-style-type: none"> • ESMP developed. This plan will be implemented throughout the implementation of the GEF/UNIDO project. • In all investment projects to be implemented under PC2 the environmental and social impacts will be identified and corrective/mitigation measures adopted if necessary. <p>The investment projects that will be supported under the hydro power sector, are run-off-river projects with a small impact on the environment. No big dams will be supported through this project.</p>	<p>So far no major challenges have occurred.</p> <p>The initial analyses for a hydro power system (Diego Vaz) implementation are considering innovative technology and engineering designs to avoid environmental impacts on the selected area. Its implementation would reduce diesel consumption for electricity generation.</p> <p>Projects linked to construction, e.g. PV system of 2.2 MWp, do not generate any related impact since they will be located close to the current facilities of the counterpart (e.g. to the diesel general plant of Sao Tomé).</p> <p>Furthermore, the overall environmental benefit of implementing the NREAP and NEEAP is to significantly reduce GHG emissions in the power sector and to achieve the target of 27% emission reduction by 2030 set in the NDC (2021).</p>	<input type="checkbox"/>
8	Oil Market Prices Risk:	Moderate	To support the Government on increasing sustainable energy production and supply (low	The macroeconomy is uncertain since prices are being impacted	<input type="checkbox"/>

	Low prices of oil / continued low prices of oil make RE projects and business not viable		<p>carbon development pathway), the GEF/UNIDO project will identify and support the development of RE and EE investment projects. The availability of water resources, which are potential resources for RE investment projects, could be affected by climate variability.</p> <p><i>Probability: Low to Moderate</i></p> <p><i>Mitigation measures:</i></p> <ul style="list-style-type: none"> Feasibility studies will address the potential impact of climate change on the life-cycle of the identified sustainable energy projects. There is a need to estimate the changes in the river flows regarding hydropower development. In general, the increased use of RE will have positive impacts and increase the ability of the domestic population to adapt to climate change. The sustainable energy investment projects will also integrate an impact mitigation strategy to address any potential impacts identified during the project feasibility analysis. <p>An organised schedule and project monitoring will assist in the identification of delays and reprogramming of activities execution.</p>	<p>by rising fuel levels and food product prices in the international market due to the war in Ukraine and its shocks in food supply chain⁶.</p> <p>To alleviate the country to address its energy and economic vulnerability, the GEF project is establishing several partnerships to fund sustainable energy initiatives as explained before, to be complemented by the new GCF project (already started its implementation).</p>	
9	<p>Impact of COVID-19 crisis</p> <p>Project delays due to supply-chain interruptions, economic downturn and lock-downs</p>	Moderate	<p>STP has been significantly impacted by supply-chain interruptions, the touristic downturn and partial lock-downs. Currently, no travel to STP are possible. Long-term economic impacts due to the reduced touristic revenues can be expected. There might be also impacts on investment projects, due to the reduced ability of private promoters to provide equity to RE investment projects. The pandemic has already caused some delays in the execution of meetings and consultancy assignments.</p> <p><i>Mitigation measures:</i></p> <ul style="list-style-type: none"> The “twinning” approach put emphasis on local execution and a strong Project Management Unit (PMU) in MOPIRINA. This allows continuity of all project activities. The project switched mainly to online meetings. Major deliverables, which require stakeholder consultations, will be finalised in 2021. It can be expected that the pandemic will have lost its impact by then. Procurement of consultancies will put major emphasis on mixed international and local project teams. 	<p><i>“Despite the socio-economic impact of Covid-19, the country has continued its path forward towards the achievement of the Sustainable Development Goals. The country is also on its way to graduate from the Low Development Country status to a middle-income country, as its development achievements...”</i></p> <p><i>“...In 2021, the Santomean authorities continued their efforts to preserve macroeconomic stability in a context where the effects of shocks associated with the health and economic crisis, caused by the COVID pandemic, continued to persist”.</i></p> <p>Inflation remains at 9.5% in line with previous years. Nevertheless, economic growth was estimated to be 2.1% of GDP in 2021⁷.</p> <p>Because of this situation, some activities have been delayed in the project. However, its implementation is under control and has achieved greater progress during 2021, to be continued during 2022 and 2023. To compensate the delays, it is envisaged to request a project extension of one year. All mitigation measures were implemented in practice.</p>	<input checked="" type="checkbox"/>

⁶ 2021 UN Annual Results Report: Sao tomé and Príncipe.

⁷ 2021 UN Annual Results Report: Sao tomé and Príncipe.

				Currently, most meetings are turned to face-to-face meetings.	
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2. If the project received a sub-optimal risk rating (H, S) in the previous reporting period, please state the actions taken since then to mitigate the relevant risks and improve the related risk rating. Please also elaborate on reasons that may have impeded any of the sub-optimal risk ratings from improving in the current reporting cycle; please indicate actions planned for the next reporting cycle to remediate this.

Not applicable

3. Please indicate any implication of the **COVID-19** pandemic on the progress of the project.

The COVID-19 crisis has impacted the project implementation moderately (see added risk above). For better explanation, because of the COVID19 crisis, the country faced strict preventive measures, which made it necessary to postpone envisaged field works by international consultants and even by locals. It affected the collection of reliable data to develop, for instance, the energy plans (NREAP and NEEAP). Mitigation measures were taken to carry out several activities through online meetings or reduced field visits.

However, it is also worth indicating that the COVID19 caused energy and telecommunications crisis because of the higher demand for services and lack of quality facilities and infrastructures, making it difficult to ensure reliable communications with local and international stakeholders, especially during the half of 2021.

Under the above-described scenario and the possible economic long-term impacts on potential RE investment projects, since private promoters could have issues to provide equity as planned, in the PIR 2021, it was envisaged to extend the project for one year, whose official request will be done during this year and it is being reported in this PIR 2022.

From the second half of 2021, activities started to come back to normality. Currently, several meetings and trainings are being held in person. For instance, in November 2021, the 2nd SC meeting of the project was held in person with the participation of some international stakeholders by online means. Apart from that, consultants are organizing field missions, e.g. to gather data and provide trainings on GIS under the setting up of the Energy Database platform; a training on PV systems is envisaged for July 2022 in Sao Tomé and will be provided by CIEMAT and CERMI; the 1st International Sustainable Energy Conference in STP for RE investments will take place in July 2022 in Sao Tomé, and, several consultations were held in person by AERE to gather key data under the MEPS assignment.

4. Please clarify if the project is facing delays and is expected to request an **extension**.

The COVID pandemic caused significant bottlenecks for the project and particularly some activities related to capacity building an investment projects got delayed. Moreover, the war in Ukraine is affecting the electric power market, for instance, in the acquisition of raw materials for the development of electronic components that are affecting the implementation of the PC5 project, especially for the manufacturing of the medium voltage cells. This is also affecting the allocation of additional RE investments as envisaged in the project document. The approval of the UNIDO led GCF Readiness project “Building institutional capacity for a renewable energy and energy efficiency investment programme for Sao Tome and Principe” was delayed and started only in the course of 2022. **To build better synergies and to sustain/replicate GEF project results it is important to extend the project for another year. The extension was approved during the 2nd SC meeting in November 2021 (see minutes).**

5. Please provide the **main findings and recommendations of completed MTR**, and elaborate on any actions taken towards the recommendations included in the report.

The Mid Term Review of the project is available and the following aspects are highlighted:

- **Relevance:** The project was designed in a consistent manner with the objectives of the Government of São Tomé and Príncipe. The Government of STP aims to reach a percentage of renewable energy of 50% in the year 2030 and reduce GHG emissions for the same period. The components of this project aim to strengthen the country's resilience and help the Government achieve its objectives. The needs of São Tomé and Príncipe were transcribed in the Project through the diversification of the proposed activities, as well as in the variety of participating counterparts.
- **Design:** The project design is in line with the country's development needs, considering the low percentage of renewable energy production in the country compared to the existing potential and the need for investments in improving energy efficiency.
- **Effectiveness:** In terms of budget expenditures, the Project has 73% of the budget disbursed but that is still not in the same percentage of goals achieved. The activities started represent 70% of the total foreseen in the design of the project. There are other complementary activities that have been carried out and that reinforce the strategies to achieve the objectives.
- **Sustainability:** There is a strong commitment on the part of the Government, evidenced by the ambitious target of 50% of renewable energies by the year 2030. On the other hand, energy efficiency goals are also on the Government's agenda and will be clearly promoted. for the activities foreseen in this project.

Moreover, the MTR contains relevant recommendations for project monitoring: *“The project is progressing in line with its objectives steadily but monitoring and evaluation activities need reinforcement. The large number of activities and the dispersion of information complicate the monitoring of project progress and can result in communication problems with stakeholders. Processes need to be structured to enhance efficiency in activities. There are annual reports and work schedules that are carried out by the PMU and use standardized UNIDO templates. However, the urgent adoption and implementation of a quality management system and a Project schedule with monthly updates is recommended”.*

Therefore, in order to improve the monitoring, there was agreed that PMU STP will provide UNIDO with monthly technical and financial reports, including indicators. These means were taken from May 2022.

IV. Environmental and Social Safeguards (ESS)

1. As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

☐ Category A project

☒ Category B project

☐ Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not escalated to Category A or B).

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
(i) Risks identified in ESMP at time of CEO Endorsement	Impact of RE installations (solar PV plant at airport, small hydropower systems) on visual aesthetics (if any)	Assessment of visibility of RE installations from different ground locations to ensure minimal visibility and blockage of natural views and access points (beach, roads etc), if any	<p>So far no major challenges occurred.</p> <p>In partnership with UNDP and AfDB, the implementation of a solar PV project of 2.2 MWp is being facilitated. The GEF project is covering the expansion and reconditioning of a coupling station to connect the PV system (500 kWp + 1,640 kWp). The implementation of this project has initiated civil works and is following constructive and environmental standards in order to prevent any negative impact. This project is also being implemented in current facilities of the diesel power plant that reduces risks.</p>
	Impact on water uses and access from the different communities surrounding the small hydropower plants to be rehabilitated or constructed	Thorough assessment of water flows and availability (offer) versus water demand from the community (domestic uses, agricultural use)	<p>There is a concept note for the implementation of a small hydro power plant, Diogo Vaz, located in Sao Tomé. Innovative technology has been considered to avoid negative impacts on the environment and communities. The initial analysis involves the installation of a water intake in Rio Anambo and two turbines to operate a capacity of about 100 kW and generate approximately 0.8 GWh annually. The feasibility study has been postponed since the envisaged area to construct a hydropower system is currently under concession to a private party dedicated to cacao production. No further progress is reported on it.</p> <p>However, there is envisaged to incorporate a new hydropower plant "Parrot" to the electric power system of Principe, and as indicated before, the impact of connecting this project will be evaluated in a stability study through an amendment of the contract with EDPR. This evaluation is out of causing any environmental damage.</p>
	The construction of RE installations affect the wildlife habitat, flora and fauna (tropical forest fauna, river aquatic fauna and fish populations, etc.)	Assessment of the project's impact on wildlife habitat, flora and fauna will be considered as part of the detailed feasibility studies.	RE investment projects are initiated. The reconditioning of the PC5, part of the implementation of a PV system of 2.2 MWp, has been initiated with civil works. The project is following constructive and environmental standards in order to prevent any negative impact. There is close coordination with the national counterpart for close supervision (DGRNE/MIRN and EMAE).

	Personnel is not acquainted with the operation and maintenance of new equipment	All staff involved will receive training on the operation and maintenance (O&M) of the RE / EE systems installed	<p>39 technicians were trained in topics such as power management, hygiene safety and health at work, and GIS and spatial analysis by CERMI.</p> <p>With EFACEC, it is envisaged to train 10 technicians from EMAE and MIRN for the connection of the new PV system to the grid.</p> <p>CIEMAT will provide trainings on PV systems for grid and off-grid connected configurations, including also topics on technical quality and operation and maintenance under IEC standards (IEC-62446 e IEC TS 62257-9-5:2018).</p>
	The construction and operation of RE installations impact on human quality of life due to e.g. noise or vibrations	Assessment of the project's impact on human quality of life will be conducted and considered.	This is still too early.
	Low participation rates of women during project implementation	Project activities include tailored actions to encourage women participation and involvement	<p>Special efforts to include women groups in technical review meetings are undertaken. The GEF project is in charge of ensuring their participation.</p> <p>Additionally, the GEF project has hired a woman as Project Administrator with a background in electrical engineering and PhD in Photovoltaic Solar Energy to support project implementation.</p> <p>Women have 20% of representation in the Technical Committee of the GEF project.</p> <p>Moreover, the "Women Sustainable Energy Program - WSEP" was implemented to empower women in order to promote gender equality and equity in the development of the energy sector, in accordance with the Gender and Energy Compact promoted by UNIDO, GWNET and ENERGIA. 22 women participated in the program, three from Guinea-Bissau, eleven from Cape Verde and eight from São Tomé and Príncipe. They also joined the training on entrepreneurship and startups. Both activities are organized together with ALER.</p>

V. Stakeholder Engagement

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes** regarding engagement of stakeholders in the project (based on the Stakeholder Engagement Plan or equivalent document submitted at CEO Endorsement/Approval).

The National Sustainable Energy Platform (NSEP) was established, which provides a space for regular cross-sectoral coordination and harmonization of donor activities. The first meeting was held on 17 June 2019 in São Tomé. The second meeting was held online means in June 2020 due to the COVID-19 crisis. Under the platform, technical committees for RE&EE were established. They review technical documents

and regulations and build cross-sectoral synergies. Also, in 2021, the Coordination Committee for the Electricity Sector Transformation Program (CC-PTSE) was established under the leadership of the Prime Minister's Office. Moreover, several sub-committees were created to review documents. 4 (four) meetings of NSEP took place already to discuss the advances in the energy plans. The National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP) are available from February 2022 and will be submitted by MIRC to the Council of Ministers for the emission of a respective regulation for their compliance.

UNIDO is also facilitating international partnerships. The GEF project activities were included in the work program of the NDC Partnership. UNIDO has facilitated the accession of STP to the Small Island Sustainable Energy and Climate Resilience Initiative (SIDS DOCK). The agreement was signed in September 2019. UNIDO is also facilitating south-south cooperation with Cape Verde on RE&EE issues. Close cooperation with the UNIDO-GEF energy expert in Praia was established. STP is also benefiting from a strategic partnership with CERMI in Cape Verde.

In September 2019, the Minister of Energy was invited to participate and speak at the high-level launching event "Mission Transforming Island Lives! The Network of Regional Sustainable Energy Centres for Small Island Developing States", which was organized under the umbrella of the Global Network of Regional Sustainable Energy Centres (GN-SEC), by UNIDO, SIDS DOCK and UN-OHRLS. The event took place on the margins of the High-Level SAMOA Pathway Midterm Review at United Nations Headquarters. During the event, ECRREE and UNIDO presented an elevator pitch on a "South-South Sustainable Energy Investment Program for the Lusophone SIDS Cabo Verde, Guinea-Bissau and São Tomé & Príncipe" to the participating Ministers from SIDS and development partners.⁸

The GEF project also contributes to better integration of STP into the regional energy cooperation of the Economic Community of Central African States (CEMAC). UNIDO is currently supporting CEMAC in the development of the Centre for Renewable Energy and Energy Efficiency for Central Africa (CEREEAC) as a specialized institution. The GEF project supported STP in the preparation of an offer to host the centre. In June 2021, in Brazzaville, the Republic of Congo, the eleven Ministers of Energy of the Economic Community of Central African States (ECCAS) approved a Renewable Energy Roadmap. During the meeting, it was agreed on hosting the center in Luanda, Angola. The CEREEAC will operate under the ECCAS umbrella and advise Angola, Burundi, Cameroon, Chad, Central African Republic, Democratic Republic of Congo, the Republic of Congo, Equatorial Guinea, Gabon, Rwanda and Sao Tome and Principe on critical issues of the energy and climate transition. The project document of the CEREEAC will be submitted for approval of the UNIDO's EB in July 2022.

Between April 9th and 15th, 2022, São Tomé and Príncipe hosted the SIDS DOCK delegation to start taking action on ocean energy, in order to strengthen the global response to the threat of climate change. This initiative is being supported by SIDS DOCK, the international organization for Sustainable Energy and Climate Resilience of Small Island Developing States, UNIDO and the Global OTEC. During this mission, it was aimed to establish national contacts and promote dialogue on ocean energy in an Energy vision for São Tomé e Príncipe, and the expected results aimed to sign the memorandum of understanding between EMAE - São Tomé and Príncipe Water and Electricity Company and Global OTEC, and sensitize Governments and the population to the appropriation and exploitation of maritime potential. Further information can be found here: <https://www.aler-renovaveis.org/en/communication/news/dialogue-on-ocean-energy-reaches-sao-tome-and-principe/>. The project was promoted during the UN Ocean Conference where an agreement for a PPA was signed (June 2022).

Additionally, a SEforALL campaign to raise national and international awareness about STP as an interesting place to invest in sustainable energy already started. An investment seminar and an international conference on sustainable energy are being organized under the partnership with ALER: i) The Africa Energy Forum 2022 will be held 21 - 24 June in Brussels under the theme 'Africa for Africa: Building Energy for the Just Transition'. In this event, STP were promoted the National Action Plan for Renewable Energies (NREAP) and the National Action Plan for Energy Efficiency (NEEAP) as key strategical policies for the

⁸ <https://www.gn-sec.net/event/samoa-pathway-high-level-luncheon-mission-transforming-island-lives-network-regional>

country, as well as the country will promote the different initiatives and projects foreseen until 2030. The H.E. Honourable Osvaldo D'Abreu Minister of MIREN attended this event together with the Project Coordination of STP and other authorities. ii) In July 2022, the 1st International Sustainable Energy conference of STP is taking place in Sao Tomé for higher dissemination of investment opportunities. ALER's associates, international institutions and Portugal's DGEG are invited to attend the forum.

Within the same partnership, the Women Sustainable Energy Program - WSEP" was implemented to empower women in order to promote gender equality and equity in the development of the energy sector, in accordance with the Gender and Energy Compact promoted by UNIDO, GWNEN and ENERGIA. ALER has also implemented trainings on entrepreneurship and start ups with the WSEP, local associations and entrepreneurs.

Apart from that, partnerships have been established with UNDP, AfDB, EFACEC for the implementation of a PV power plant of Santo Amaro of 2.2 MWp. The joint efforts are making progress and the commissioning of this PV system is planned for September 2022. Another partnership was established with EDP Renováveis and TESE for grid update and expansion in Príncipe, this will also involve the analysis of connecting new renewable energy power (hydro and PV).

Other alliances were established. For instance, with CIEMAT and CERMI for capacity building on i) e-learning and moodle platform based on the online tool on sustainable energy for islands and ii) photovoltaic technology; with AERE for developing MEPS on high impact demand products, that also involves training sessions on their implementation and compliance.

2. Please provide any feedback submitted by national counterparts, GEF OFP, co-financiers, and other partners/stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

So far, the project has received good feedback from local counterparts and international partners. The local PMU in DGRNE/MOPIRINA has a strong role to coordinate the entire RE&EE sector and creates synergies between the various donor activities (e.g. particularly AfDB, WB, UNDP and UNIDO), NGOs, research centres, public sector, local associations (AENER, APERAS), and private parties. Together with UNIDO, the Government submitted a GCF Readiness proposal that was approved and envisaged its kick-off in July 2022. The GCF project aims to increase the impact of the GEF project.

In addition, during the 2nd SC meeting, several national and international organizations provided positive feedback on the GEF project activities, like those provided by AGER, recognizing the valuable work on training local technicians, and by UNDP: "remarking the synergies established between the GEF project and other energy initiatives being implemented in the country, e.g. Promotion of Environmentally Sustainable and Climate Resilient Hydroelectric Electricity and Integrated Approach in Sao Tomé and Príncipe, GEF project", among others. Further details can be found in the 2nd SC meeting minutes.

3. Please provide any **relevant stakeholder consultation documents**

Please list here the documents which will be submitted in addition to the report, e.g.:

- The online knowledge portal of DGRNE/MOPIRINA is available at: [Home Dgrne | DGRNE website](#). All project activities are disseminated through the portal.
- The Online Capacity Building Program on Sustainable Energy for Islands is available at: <https://training.gn-sec.net/course/index.php?categoryid=6> in Portuguese and free of charge.
- 9897_Elevator Pitch Investment Program for Sao Tome and Principe
- 9897_1ST SC meeting minutes (June, 2019)
- 9897_Contract No. 3000081095 for the provision of technical and monitoring services for the grid-connection works related to a modular utility -scale solar PV generation plant on the islands grid of STP. 10 June 2020.

- 9897_ Renewable Energy and Energy Efficiency in São Tomé and Príncipe - National Status Report (November, 2020) <https://www.aler-renovaveis.org/en/activities/publications/national-reports/sao-tome-and-principe-renewable-energy-and-energy-efficiency-status-report/>
- 9897_Contract No. 3000082051 for the Development fo Renewable Energy and Energy Efficiency Action Plans in support of the National Vision “Sao Tomé and Príncipe 2030: the country we need to build” (July, 2020)
- 9897_Contract No. 3000085141 for the provision of services related to the implementation of the Multisectoral Training Plan for the Energy sector in Sao tomé and Príncipe (November, 2020)
- 9897_Report on Capacity Building Renewable Energy and Energy Efficiency in the Energy Sector (December, 2020)
- 9897_Energy Policy and Data Gap Analysis (March, 2021)
- 9897_Contract No. 3000087970 for the provision of services related to strategic partnership to promote renewable energies in Sao Tomé and Príncipe and sotuth-south cooperation with other lusophone countries (March, 2021).
- 9897_Inventary of GHG emissions in Energy Sector 2010-2019.
- 9897_Co-financing letter for the project Development of an Ocean Thermal Energy Conversion (OTEC) Floating Platform in STP (August, 2021)
- 9897_Contract No.3000094235 for the provision of services relating to conducting the Mid-Term Review (MTR) of the GEF Project “Strategic program to promote renewable energy and energy efficiency investments in the electricity sector of São Tomé and Príncipe” (September, 2021)
- 9897_Contract No.3000090882 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. (October, 2021)
- 9897_Evaluation of AENER (Santomean Renewable Energy Association) (November, 2021)
- 9897_2nd STC meeting_meeting minutes (November, 2021)
- 9897_Evaluation of APERAS (Association for the Promotion of Renewable Energy and Sustainable Environment of São Tomé and Príncipe) (December, 2021)
- 9897_Contract No.3000095044 for the provision of services related to the expansion and reconditioning of the power coupling stations PC5 solar photovoltaic system of Santo Amero, Sao Tomé Island (January, 2022)
- 9897_NREAP. National Renewable Energy Action Plan (February, 2022): <https://www.gn-sec.net/content/national-renewable-energy-action-plan-sao-tome-e-principe-0>
- 9897_NEEAP. National Energy Efficiency Action Plan (February, 2022): <https://www.gn-sec.net/content/national-energy-efficiency-action-plan-sao-tome-e-principe-0>
- 9897_Mid Term Review (February, 2022)
- 9897_Inception report – Energy Database Platform (February, 2022)
- 9897_TORs for terminal evaluation – draft (February, 2022)
- 9897_WSEP Women Sustainable Energy Platform concept note (March, 2022)
- 9897_WESUP Workshop on Entrepreneurship and Startups programme – concept note (March, 2022)
- 9897_STP Case studies (March, 2022):
 - Solar photovoltaic (PV) system in the DGRNE building in São Tomé and Príncipe; [PV System of the General Directorate of Natural Resources and Energy in São Tomé](#);
 - Solar photovoltaic (PV) system in a fisherman's cooperative in São Tomé and Príncipe; [PV System of the Messias Alves Beach Fishermen and Palaiês Association, São Tomé and Príncipe](#);

- Planalto Norte Min-Grid in Cape Verde; [Planalto Norte Mini-grid, Cape Verde](#);
 - Power Plant in Porto Novo's Desalination Plant in Cape Verde; [Renewable Energy in Porto Novo's Desalination Plant, Cape Verde](#);
 - Bambadinca Mini-Grid in Guinea Bissau; [Community Energy Service - a mini-grid in Bambadinca, Guinea-Bissau](#);
 - Solar Home Systems for rural development in Guinea-Bissau; [Solar Home Systems for rural development of Guinea-Bissau](#).
- 9897_Contract No. 3000098152 For the provision of services related to train the trainers actions within the GN-SEC Online Capacity Building Program on Sustainable Energy for Islands (March, 2022)
 - 9897_ Call for the training on PV systems: <https://agenda.ciemat.es/event/3961/>
 - 9897_Didactic guide delivering Elearning courses (March, 2022)
 - 9897_Didactic guide LMS Moodle Management (March, 2022)
 - 9897_Baseline assessment of market conditions of lighting, air conditioners and refrigerators (April, 2022)
 - 9897_PC5 Power coupling station_inception report (May, 2022)
 - 9897_Implementation framework on MEPS – draft version (June, 2022)
 - 9897_Compliance framework on MEPS – draft version (June, 2022)
 - 9897_Workshop on PV systems_syllabus (June, 2022)

VI. Gender Mainstreaming

1. Using the previous reporting period as a basis, please report on the **progress achieved on implementing gender-responsive measures and using gender-sensitive indicators**, as documented at CEO Endorsement/Approval (in the project results framework, gender action plan or equivalent),.

“During the development of the project, some challenges were encountered in achieving the set gender targets. Corrective measures are already being implemented by the Project Management Unit. Additionally, joint work has been initiated with INPAIG - NATIONAL INSTITUTE OF GENDER EQUALITY of STP in order to improve the project”.

The gender mainstreaming strategy is under implementation. In all relevant procurements and studies, the gender dimension is considered as an important aspect (e.g. NREAP, NEEAP, MEPS and labeling program).

The Sustainable Energy Status Report for Sao Tome and Principe (November 2020) includes a chapter on gender. Aligned to this, the elaboration of the NREAP and NEEAP has been counting on the participation of INPAIG of STP. The participation of this Institute has been defined in the Energy Policy and Data Gap Analysis (March 2021).

As part of the strategic partnership with ALER, the Women Sustainable Energy Program was implemented in order to promote gender equality and equity in the development of the energy sector, in accordance with

the Gender and Energy Compact promoted by UNIDO, GWNET, and ENERGIA. The program involved 17 online sessions: six sessions on women empowerment, four on capacitation on renewable energy, and one on entrepreneurship and startups, followed by six weeks with local mentors and support sessions from ALER and other partners, dedicated to the development of the project business plans. The WSEP is under finalization. Under this program, they were also able to develop further project ideas with their respective business models. The best project proposal will be awarded publicly. Further information is available here: <https://www.aler-renovaveis.org/en/activities/projects/sustainable-energy-programme-for-women/>

Moreover, under the development of the Energy and Database Platform, it was achieved participation of 30% of women in a training on GIS and georeferencing.

Apart from that, further trainings (e.g. with CIEMAT and CERMI) also pursue at least 40% of participation of women, and through the implementation of the new GCF readiness project, other trainings will complement the activities of the GEF project and reinforce the commitments on gender equality promotion.

VII. Knowledge Management

1. Using the previous reporting period as a basis, please elaborate on any **knowledge management activities / products**, as documented at CEO Endorsement / Approval.

The project has put a strong emphasis on strengthening sustainable energy knowledge management within the sector and particularly DGRNE/MOPIRNA. A Sustainable Energy Status Report and the Energy Policy and Data Gap Analysis on Sao Tome and Principe, and the GHG emissions study are available.

UNIDO supported DGRNE/MOPIRNA to develop a concept for its energy information system, as well as the update of its energy balance by the application of the LEAP tool for energy planning. The NREAP and the NEEAP were published in February 2022. The energy plans involve mitigation and adaptation measures based on national policies and initiatives promoted by UNIDO and other cooperation organizations in the country. All results are based on the LEAP analysis.

Similarly, 6 cases studies were published to promote and highlight successful RE initiatives in the country: Solar photovoltaic (PV) system in the DGRNE building in São Tomé and Príncipe; Solar photovoltaic (PV) system in a fisherman's cooperative in São Tomé and Príncipe; Planalto Norte Min-Grid in Cape Verde; Power Plant in Porto Novo's Desalination Plant in Cape Verde; Bambandinca Mini-Grid in Guinea Bissau; and, Solar Home Systems for rural development in Guinea-Bissau. Moreover, under the elaboration of the MEPS, there are available: the Baseline Assessment of Market Conditions of Lighting, Air Conditioners and Refrigerators, and draft versions of the compliance and implementation frameworks. Furthermore, there is available a first version of the Energy and Database Platform conceptualization, the design is currently under development.

Grid stability and detailed technical and costs assessments on the grid adaptation of Principe are available. It is envisaged further analysis with the incorporation of a hydro and PV plant to evaluate their impact on the grid stability and in general on the power system of Principe.

The Online Capacity Building Program on Sustainable Energy for Islands has been developed by CIEMAT (Spanish Centre for Research in Energy, Environment and Technology) in partnership with UNIDO and SIDS DOCK. The program has been developed by fulfilling CIEMAT's quality criteria in terms of scientific and technical expertise, Information and Communication Technologies (ICT) tools, and methodological and pedagogical resources. The development of the program was co-funded by the Spanish Agency for International Development (AECID), the Norwegian Government and the Austrian Development Agency (ADA). The program includes nine online modules, which describe and analyze the following technologies and energy issues: Solar Photovoltaics, Solar Thermal and Ocean Energy technologies, Bioenergy, Energy

Efficiency and Thermal Optimization in buildings, Mini-grids and Energy Storage in Insular Power Systems, E-mobility and an overview on Energy, Climate Change Mitigation and Resilience in island regions. All modules are available online in the Portuguese language and are free of charge (<https://training.gn-sec.net/course/index.php?categoryid=1>).

Furthermore, among the provided training the following areas were: i) Technical and Economic Feasibility Analysis of Projects; ii) Energy Audits; iii) Power management; iv) Hygiene, Safety and Health at Work; v) Geographic Information Systems and Spatial Analysis. 39 technicians from different institutions were trained (DGRNE, AGER –General Regulatory Authority-, DGA – Directorate General for the Environment-, EMAE, DP – Planning Department, SRADS/RAP–Regional Secretary for Environment and Social Development-).

10 technicians from EMAE and MORN were trained in GIS and georeferencing, achieving participation of 30% of women. With the support of ALER, it was implemented the WSEP (22 women trained in empowerment, renewable energy, entrepreneurship and startups) and the training program with national associations. There are available: the WSEP concept note, the Workshop on Entrepreneurship and startups (WESUP) concept note, and evaluations of APERAS and AENER (local associations).

Apart from that, there are envisaged trainings with CIEMAT and CERMI (e.g. e-learning and moodle platform based on the sustainable energy online tool, and PV systems), with AERE on MEPS, with EFACEC on power systems and SCADA. Similarly, it is envisaged to make the following documents available in Portuguese for the country: the hydro power guidelines and the the Clean Energy Mini-Grid Policy Development Guide developed by UNIDO.

Moreover, the GEF project supported DGRNE/MOPIRINA to establish an interactive web-based knowledge portal, which is disseminating the generated knowledge of all GEF/GCF funded activities. Furthermore, it is envisaged the incorporation of an Energy Database Platform to the website.

2. Please list any **relevant knowledge management mechanisms / tools** that the project has generated.

- a) The online knowledge portal of DGRNE/MOPIRINA is available at: [Home Dgrne | DGRNE website](#). All project activities are disseminated through the portal.
- b) The Online Capacity Building Program on Sustainable Energy for Islands is available at: <https://training.gn-sec.net/course/index.php?categoryid=6> in Portuguese and free of charge.
- c) 9897_ Renewable Energy and Energy Efficiency in São Tomé and Príncipe - National Status Report (November, 2020) <https://www.aler-renovaveis.org/en/activities/publications/national-reports/sao-tome-and-principe-renewable-energy-and-energy-efficiency-status-report/>
- d) 9897_Energy Policy and Data Gap Analysis (March, 2021)
- e) 9897_Evaluation of AENER (Santomean Renewable Energy Association) (November, 2021)
- f) 9897_Evaluation of APERAS (Association for the Promotion of Renewable Energy and Sustainable Environment of São Tomé and Príncipe) (December, 2021)
- g) 9897_NREAP. National Renewable Energy Action Plan (February, 2022): <https://www.gn-sec.net/content/national-renewable-energy-action-plan-sao-tome-e-principe-0>
- h) 9897_NEEAP. National Energy Efficiency Action Plan (February, 2022): <https://www.gn-sec.net/content/national-energy-efficiency-action-plan-sao-tome-e-principe-0>
- i) 9897_Mid Term Review (February, 2022)
- j) 9897_ Inception report – Energy Database Platform (February, 2022)
- k) 9897_WSEP Women Sustainable Energy Platform concept note (March, 2022)
- l) 9897_WESUP Workshop on Entrepreneurship and Startups programme – concept note (March, 2022)

- m) 9897_STP Case studies (March, 2022):
- Solar photovoltaic (PV) system in the DGRNE building in São Tomé and Príncipe; [PV System of the General Directorate of Natural Resources and Energy in São Tomé](#);
 - Solar photovoltaic (PV) system in a fisherman's cooperative in São Tomé and Príncipe; [PV System of the Messias Alves Beach Fishermen and Palaiês Association, São Tomé and Príncipe](#);
 - Planalto Norte Mini-Grid in Cape Verde; [Planalto Norte Mini-grid, Cape Verde](#);
 - Power Plant in Porto Novo's Desalination Plant in Cape Verde; [Renewable Energy in Porto Novo's Desalination Plant, Cape Verde](#);
 - Bambadinca Mini-Grid in Guinea Bissau; [Community Energy Service - a mini-grid in Bambadinca, Guinea-Bissau](#);
 - Solar Home Systems for rural development in Guinea-Bissau; [Solar Home Systems for rural development of Guinea-Bissau](#).
- n) Call for the training on PV systems: <https://agenda.ciemat.es/event/3961/>
- o) Call for national/regional training institutes in SIDS or islands to participate in train the trainer workshops of "Online Capacity Building Program on Sustainable Energy Solutions for islands":
- Train the Trainer Workshop in English: <https://agenda.ciemat.es/event/3906/>
 - Train the Trainer Workshop in Portuguese: <https://agenda.ciemat.es/e/TTT>
- p) 9897_Didactic guide delivering Elearning courses (March, 2022)
- q) 9897_Didactic guide LMS Moodle Management (March, 2022)
- r) 9897_Baseline assessment of market conditions of lighting, air conditioners and refrigerators (April, 2022)
- s) 9897_PC5 Power coupling station_inception report (May, 2022)
- t) 9897_Implementation framework on MEPS – draft version (June, 2022)
- u) 9897-Compliance framework on MEPS – draft version (June, 2022)
- v) 9897_Workshop on PV systems_syllabus (June, 2022)

VIII. Implementation progress

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes achieved/observed** with regards to project implementation.

a. Achievements:

The Project Management Unit (PMU) was established in the General Directorate for Natural Resources and Energy (DGRNE)⁹ of the Ministry of Infrastructure, Natural Resources and Environment (MOPIRNA)¹⁰ and the local project team comprising a Project Coordinator, Technical Assistant and Administrative Assistant was recruited. MOPIRNA/DGRNE has provided the office facilities as committed. A project kick-off meeting was held in 2019. The 2020-2021 annual project work plan and budget is under implementation.

So far, the applied “twinning”¹¹ execution modality of UNIDO has worked well. The strong ownership-oriented approach, transfers gradually more and more administrative, financial and technical responsibilities to the DGRNE/MOPIRNA. At the beginning of the project, the limited fiduciary and technical capacities of DGRNE have not allow immediate full transfer of funding and technical work. To address these gaps, UNIDO undertook an institutional capacity assessment (executed by KPMG) of the Ministry. Technical duties are regularly transferred to the local PMU.

A cooperation with the Center for Renewable Energies and Industrial Maintenance (CERMI) in Praia, Cape Verde, was established. As part of the partnership, CERMI developed a short paper with recommendations for the strengthening of the qualification and certification framework in STP. Under the same partnership, between November and December 2020, 5 trainings were carried out: i) Technical and Economic Feasibility Analysis of Projects; ii) Energy Audits; iii) Power management; iv) Hygiene, Safety and Health at Work; v) Geographic Information Systems and Spatial Analysis. 39 technicians from different institutions were trained (DGRNE, AGER –General Regulatory Authority-, DGA – Directorate General for the Environment-, EMAE, DP – Planning Department, SRADS/RAP–Regional Secretary for Environment and Social Development-). The approach is based on the principles of genuine partnership, shared responsibilities and execution, flexibility, institution-to-institution peer learning and mentoring.

Moreover, in partnership with the Alliance for Rural Electrification (ARE), UNIDO developed the Clean Energy Mini-Grid Policy Development Guide, including practical annexes. With support of the GEF project the guide is being translated into Portuguese and will be made available to STP key stakeholders by conducting trainings this year. UNIDO is currently also translating the International Guidelines for the development and operation of small hydropower plants in Portuguese. It will be the basis for future capacity building activities.

Furthermore, for the implementation of a SEforALL campaign a strategic partnership with ALER (Lusophone Renewable Energy Association) was established. The partnership includes the publishing of regular articles on the STP energy transition and investment opportunities, the organisation of three (3) webinars, the implementation of a women sustainable energy program with 22 participants, the organisation of an RE&EE investment workshop and conference – African Energy Forum- (taking place in June and July, 2022), capacity building and mentoring program for local renewable energy associations, a business training for sustainable energy entrepreneurs in STP. The GEF project is working on keep increasing the interest and participation of women in related energy initiatives in the framework of the nexus of the SDG7 and the SDG5, and the Gender and Energy Compact promoted by UNIDO, GWNET and ENERGIA.

UNIDO, SIDS DOCK, and Global OTEC and the MIRN established a partnership for the development of a utility-scale Ocean Thermal Energy Conversion Plant (OTEC). The private developer is currently raising the required equity for the demonstration project. It would be the first demonstration in a SIDS. The activity would be implemented under the umbrella of Ocean Energy Industry Platform currently established by UNIDO in partnership with SIDS DOCK. During the UN Ocean Conference (June 2022), the OTEC project was promoted and an agreement was signed for establishing a PPA to support the installation of 1.5 MW.

Furthermore, the Online Capacity Building Program on Sustainable Energy for Islands is available in Portuguese and free of charge (<https://www.gn-sec.net/content/online-capacity-building-program-sustainable-energy-islands>). The GEF-project keeps focusing on strengthening the financial, administrative, and technical capacities and skills of DGRNE/MOPIRNA. Therefore, new trainings are taking place this year with support of CIEMAT, with main focus on PV technology (July 2022) and the

⁹ Direção Geral dos Recursos Naturais e Energia (DGRNE)

¹⁰ Ministério das Obras Públicas, Infraestruturas, Recursos Naturais e Ambiente (MOPIRNA)

¹¹ Defined as institutional peer to peer learning

train of trainer's course based on the online capacity-building tool (September 2022). It will allow the whole package of the online training course to be included in the curricula of local Universities.

The implementation of RE projects is ongoing thanks to partnerships with UNDP, AfDB, EMAE, DGRNE/MIRN, as well as EDPR and EFACEC. With UNDP, AfDB, EMAE, DGRNE/MIRN, it is envisaged the deployment of 2.2. MWp (550 kWp + 1,640 kWp), and through the GEF project, the power coupling station will be reconditioned to connect the two PV generators to the grid. The civil work has already started and the electric design is under revision by EMAE and the PMU STP. While, with EDPR, the GEF project will be focused on the electrical grid expansion and update in Principe island and the evaluation of connecting other additional RE projects (e.g. hydro power and PV system) to the power system of Principe. In the same line, a consultant has been hired to study the situation of Diogo Vaz, a hydro power plant located in Sao Tomé. The analysis involves the installation of a water intake on Rio Anambo and two turbines to operate a capacity of about 100 kW and generate approximately 0.8 GWh annually.

A Sustainable Energy Status Report and the Energy Policy and Data Gap Analysis on Sao Tome and Principe, and the GHG emissions study are available. The NREAP and NEEAP are available, as well as 6 cases studies: Solar photovoltaic (PV) system in the DGRNE building in São Tomé and Príncipe; Solar photovoltaic (PV) system in a fisherman's cooperative in São Tomé and Príncipe; Planalto Norte Min-Grid in Cape Verde; Power Plant in Porto Novo's Desalination Plant in Cape Verde; Bambandinca Mini-Grid in Guinea Bissau; and, Solar Home Systems for rural development in Guinea-Bissau.

On the other hand, the lighting standard component is ongoing and closely aligned with and ensures the sustainability of a World Bank (WB) funded light bulb exchange emergency program, which will generate short-term impacts. It involves the development of standards for selected electric appliances with a labelling program. There are available: the Baseline Assessment of Market Conditions of Lighting, Air Conditioners and Refrigerators; and, draft versions of the compliance and implementation frameworks. This work is under the established partnership with AERE.

The Energy Database platform will be integrated into the DGRNE/MIRN webpage to make relevant data public for investors, financiers, and donors. There is already available a concept note on its design. In this framework, 10 technicians were trained with a participation of 30% of women.

Furthermore, the Mid Term Review of the project is available and the following aspects are highlighted:

- **Relevance:** The project was designed in a consistent manner with the objectives of the Government of São Tomé and Príncipe. The Government of STP aims to reach a percentage of renewable energy of 50% in the year 2030 and reduce GHG emissions for the same period. The components of this project aim to strengthen the country's resilience and help the Government achieve its objectives. The needs of São Tomé and Príncipe were transcribed in the Project through the diversification of the proposed activities, as well as in the variety of participating counterparts.
- **Design:** The project design is in line with the country's development needs, considering the low percentage of renewable energy production in the country compared to the existing potential and the need for investments in improving energy efficiency.
- **Effectiveness:** In terms of budget expenditures, the Project has 73% of the budget disbursed but that is still not in the same percentage of goals achieved. The activities started represent 70% of the total foreseen in the design of the project. There are other complementary activities that have been carried out and that reinforce the strategies to achieve the objectives.
- **Sustainability:** There is a strong commitment on the part of the Government, evidenced by the ambitious target of 50% of renewable energies by the year 2030. On the other hand, energy efficiency goals are also on the Government's agenda and will be clearly promoted. for the activities foreseen in this project.

An important achievement in 2021/22 was the approval of the UNIDO led GCF Readiness project "Building institutional capacity for a renewable energy and energy efficiency investment programme for Sao Tome and Principe", which has a budget of around USD 1 million and will ensure the sustainability and up-scaling of activities, which were started under the GEF project. A The joint GCF/GEF Project Management Unit (PMU) was established and a national UNIDO Program Coordinator located in

DGRNE/MOPIRNA has started to coordinate the GCF project implementation in close partnership with the UNIDO Project Manager and his team in UNIDO Headquarters.

A first joint GEF/GCF Project Steering Committee was held on 23 November 2021 in Sao Tome. During the event the new GCF funded project was presented and the draft work plan discussed. It was decided to have joint annual work plans for both projects in future. The GEF Focal Point and the GCF NDA participated in the meeting. By pooling funds and human resources with the GEF project, the Readiness support can be delivered more effectively and with higher impact for the benefit of the country.

b. Bottlenecks:

In 2020, the implementation of the project slowed down due to the severe impact of the global COVID-19 outbreak. The economy of Sao Tome and Principe has been highly impacted by supply-chain interruptions, touristic downturn and temporary lock-downs. Envisaged project meetings could not be held, and many of them were undertaken by online means. The first Project Steering Committee (PSC) could not be held as planned and was shifted to a later stage in close consultation with the GEF OFP. Therefore, the 1ST SC meeting took place in June 2019, and the 2nd SC meeting was held in November 2021.

Furthermore, the MTR confirms the following: *“due to the delays accumulated in the implementation of the Project over time, it is recommended a review of its structure and planning. The delays experienced so far can mainly be attributed to the pandemic situation of COVID 19, which affected several activities that had to be rescheduled and/or cancelled”*. The MTR also concluded that *“the Project is ambitious in its strategy in wanting to move forward at the same time with all three components in parallel (regulation, investment and capacity building). It is considered audacious to want to promote investment in sustainable energy at the same time as preparing the national plan for renewable energy and energy efficiency and training national technicians in these activities. Nonetheless, the project was designed in conjunction with other investment projects in STP (e.g. GEF-UNDP; WB; AfDB) and some activities are reinforced and carried out jointly, which facilitates the progress of the projects”*.

Apart from that, the war in Ukraine is affecting the production of electronic equipments, and in turn, the manufacture of medium voltage cells for the reconditioning of the PC5 to connect the PV system of Santo Amaro to the grid.

2. Please briefly elaborate on any **minor amendments**¹² to the approved project that may have been introduced during the implementation period or indicate as not applicable (NA).

Please tick each category for which a change has occurred and provide a description of the change in the related textbox. You may attach supporting documentation, as appropriate.

<input type="checkbox"/>	Results Framework	NA
<input type="checkbox"/>	Components and Cost	NA
<input type="checkbox"/>	Institutional and Implementation Arrangements	NA
<input type="checkbox"/>	Financial Management	NA
<input type="checkbox"/>	Implementation Schedule	The project is pending to request an extension of one additional year as agreed during the 2nd

¹² As described in Annex 9 of the *GEF Project and Program Cycle Policy Guidelines*, **minor amendments** are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5%.

		SC meeting in November 2021 (up to 05/25/2024).
<input type="checkbox"/>	Executing Entity	NA
<input type="checkbox"/>	Executing Entity Category	NA
<input type="checkbox"/>	Minor Project Objective Change	NA
<input type="checkbox"/>	Safeguards	NA
<input type="checkbox"/>	Risk Analysis	NA
<input type="checkbox"/>	Increase of GEF Project Financing Up to 5%	NA
<input type="checkbox"/>	Co-Financing	NA
<input type="checkbox"/>	Location of Project Activities	NA
<input type="checkbox"/>	Others	NA

3. Please provide progress related to the **financial implementation** of the project.

The project expenditures (excl. PPG grant) amount to USD 1,514,304.79. A first execution agreement with DGRNE/MIRN to cover the operational PMU costs and first local technical activities was signed. A contract with EDP Renováveis was signed for the grid expansion and update of Príncipe. A consultancy contract on the development of the NREAP and NEEAP was signed with ITP. A senior SHP expert was contracted to evaluate several SHP project. Contracts with ALER and CERMI were signed for capacity building. A consultant was contracted to develop the website of DGRNE/MOPIRNA and a concept for the STP information system.

Moreover, a contract with AERE was signed for the elaboration of MEPS. A contract with an ISA consultant was signed for the development of the Energy Database Platform, and a contract with an e-mobility expert. A contract with EFACEC was signed for the reconditioning of a coupling station (PC5). There is a contract with CIEMAT for capacity building based on the sustainable energy online tool for e-learning and moodle modules and PV system topics.



PROJECT DELIVERY REPORT

Project:	150124 - STRATEGIC PROGRAM TO PROMOTE RENEWABLE ENERGY AND ENERGY EFFICIENCY INVESTMENTS IN THE ELECTRICITY SECTOR OF SAO TOME AND PRINCIPE	Project Manager:	Martin Lugmayr	Project Validity Status:	21.12.2017 - 25.05.2023 Implement
Project Theme:	Energy and Environment	Country:	S.Tome&Principe	Region	Africa
Grant	Grant Description	Fund	Currency	Grant Status	Grant Validity
2000003777	SAO TOME-PRINCIPE	GF	USD	Closed	21.12.2017 - 21.12.2018
2000004152	SAO TOME_ELECTRICITY	GF	USD	Authority to implement	25.05.2019 - 25.05.2023

	Description	Released Budget Current Year (a)	Obligations Current Year (b)	Disbursements Current Year (c)	Expenditures Current Year (d=b+c)	Total Agreement Budget (e)	Released Budget (f)	Obligations + Disbursements (g)	Funds Available* (h=f-g)	Support Cost (i)	Total Expenditures (j=g+i)
2000003777		USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
150124-0-01	Project design adopted by the Government										
1100	Staff & Intern Consultants	0.00	0.00	0.00	0.00	8,635.66	8,635.66	8,635.66	0.00	0.00	8,635.66
1500	Local travel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2100	Contractual Services	0.00	0.00	0.00	0.00	40,637.77	40,637.77	40,637.77	0.00	0.00	40,637.77
5100	Other Direct Costs	0.00	0.00	0.00	0.00	(37.77)	(37.77)	(37.77)	0.00	0.00	(37.77)
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,750.00	4,750.00
150124-0-01-01	Total	0.00	0.00	0.00	0.00	49,235.66	49,235.66	49,235.66	0.00	4,750.00	53,985.66
2000003777	Total	0.00	0.00	0.00	0.00	49,235.66	49,235.66	49,235.66	0.00	4,750.00	53,985.66
2000004152		USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
150124-1-01-01	1.1. Improved policy framework										
1100	Staff & Intern Consultants	5,321.92	0.00	0.00	0.00	22,016.95	22,016.95	16,695.03	5,321.92	0.00	16,695.03
1500	Local travel	5,586.36	3,491.16	2,128.68	5,619.84	18,473.23	18,473.23	18,506.71	(33.48)	0.00	18,506.71
1700	Nat.Consult./Staff	18,000.00	9,820.36	7,756.70	17,577.06	23,399.71	23,399.71	20,976.77	2,422.94	0.00	20,976.77
2100	Contractual Services	19,624.82	(59,103.39)	78,586.42	19,483.03	235,664.52	235,664.52	235,522.73	141.79	0.00	235,522.73
5100	Other Direct Costs	1,000.00	0.00	173.55	173.55	2,304.33	2,304.33	1,477.88	826.45	0.00	1,477.88
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27,852.13	27,852.13
150124-1-01-01	Total	49,533.10	(45,791.87)	88,645.35	42,853.48	301,858.74	301,858.74	293,179.12	8,679.62	27,852.13	321,031.25
150124-1-01-02	1.2 Promoting Investments	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	10,000.00	(2,001.87)	2,021.89	20.02	16,740.88	16,740.88	6,760.90	9,979.98	0.00	6,760.90
1700	Nat.Consult./Staff	10,000.00	3,321.92	0.00	3,321.92	13,396.10	13,396.10	6,718.02	6,678.08	0.00	6,718.02
2100	Contractual Services	74,839.22	(48,631.91)	83,832.38	35,200.47	592,213.20	592,213.20	552,574.45	39,638.75	0.00	552,574.45
3500	International Meetings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4300	Premises	224,206.61	223,551.63	0.00	223,551.63	225,000.00	225,000.00	224,345.02	654.98	0.00	224,345.02
5100	Other Direct Costs	1,000.00	0.00	0.00	0.00	1,478.59	1,478.59	478.59	1,000.00	0.00	478.59
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75,133.27	75,133.27
150124-1-01-02	Total	320,045.83	176,239.77	85,854.27	262,094.04	848,828.77	848,828.77	790,876.98	57,951.79	75,133.27	866,010.25
150124-1-01-03	1.3 Strengthening RE&EE capacities	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	42,485.78	21,830.00	17,975.50	39,805.50	57,845.50	57,845.50	55,165.22	2,680.28	0.00	55,165.22
1500	Local travel	137.20	0.00	0.00	0.00	5,026.23	5,026.23	4,889.03	137.20	0.00	4,889.03
1700	Nat.Consult./Staff	7,258.26	0.00	164.54	164.54	28,023.69	28,023.69	20,929.97	7,093.72	0.00	20,929.97
2100	Contractual Services	7,500.00	7,305.68	7,027.07	14,332.75	51,701.95	51,701.95	58,534.70	(6,832.75)	0.00	58,534.70
3000	Train/Fellowship/Study	3,000.00	0.00	0.00	0.00	48,543.85	48,543.85	45,543.85	3,000.00	0.00	45,543.85
3500	International Meetings	10,000.00	0.00	0.00	0.00	12,231.19	12,231.19	2,231.19	10,000.00	0.00	2,231.19
5100	Other Direct Costs	646.83	0.00	30.09	30.09	7,337.74	7,337.74	6,721.00	616.74	0.00	6,721.00
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18,431.56	18,431.56
150124-1-01-03	Total	71,028.07	29,135.68	25,197.20	54,332.88	210,710.15	210,710.15	194,014.96	16,695.19	18,431.56	212,446.52
150124-1-51-01	2. Project Management and Monitoring	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	19,985.10	6,069.42	11,360.43	17,429.85	25,949.05	25,949.05	23,393.80	2,555.25	0.00	23,393.80
1500	Local travel	0.00	0.00	0.00	0.00	2,525.74	2,525.74	2,525.74	0.00	0.00	2,525.74
1700	Nat.Consult./Staff	22,457.34	9,820.37	12,415.14	22,235.51	99,512.14	99,512.14	97,290.31	2,221.83	0.00	97,290.31
2100	Contractual Services	10,000.00	(4,495.50)	4,495.50	0.00	24,991.55	24,991.55	14,991.55	10,000.00	0.00	14,991.55
5100	Other Direct Costs	736.90	0.00	79.36	79.36	3,275.12	3,275.12	2,617.58	657.54	0.00	2,617.58
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13,377.87	13,377.87
150124-1-51-01	Total	53,179.34	11,394.29	28,350.43	39,744.72	156,253.60	156,253.60	140,818.98	15,434.62	13,377.87	154,196.85
150124-1-53-01	3. Evaluation	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	15,000.00	0.00	0.00	0.00	15,000.00	15,000.00	0.00	15,000.00	0.00	0.00
1500	Local travel	2,000.00	1,163.73	0.00	1,163.73	2,000.00	2,000.00	1,163.73	836.27	0.00	1,163.73
2100	Contractual Services	15,000.00	(12,425.10)	32,520.72	20,095.62	39,919.74	39,919.74	45,015.36	(5,095.62)	0.00	45,015.36
5100	Other Direct Costs	1,000.00	0.00	0.00	0.00	1,000.00	1,000.00	0.00	1,000.00	0.00	0.00
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,386.99	4,386.99
150124-1-53-01	Total	33,000.00	(11,261.37)	32,520.72	21,259.35	57,919.74	57,919.74	46,179.09	11,740.65	4,386.99	50,566.08
2000004152	Total	526,786.34	159,716.50	260,567.97	420,284.47	1,575,571.00	1,575,571.00	1,465,069.13	110,501.87	139,181.82	1,604,250.95
150124	USD Total	526,786.34	159,716.50	260,567.97	420,284.47	1,624,806.66	1,624,806.66	1,514,304.79	110,501.87	143,931.82	1,658,236.61

* Does not include Unapproved Obligations

IX. Work Plan and Budget

1. Please provide an **updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

Please fill in the below table or make a reference to the file, in case it is submitted as an annex to the report.

Expected Outputs	Time-Frame																GEF Budget USD	
	2019/2020				2020/2021				2021/2022				2022/2023 (ongoing)					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Project Component 1 (PC1): Policy, legal and regulatory framework for sustainable energy																		8,679.62
Outcome 1: Accelerated RE&EE market development through improved policy and regulatory framework and effective public-private coordination																		
Output 1.1. Coherent national sustainable energy policies with RE&EE targets established and under implementation																		
Output 1.2. Proposals for sustainable energy legislation, standards and a package of incentives developed, and their implementation facilitated																		
Output 1.3. EE standards for electric appliances are developed and their implementation facilitated																		
Output 1.4. Strengthening STP and raising awareness to become a hub for sustainable energy and island technology demonstration																		
Project Component 2 (PC2): Sustainable energy investment promotion																		57,951.79
Outcome 2: Increased investments in sustainable energy infrastructure and businesses																		
Output 2.1: The STP RE and EE Status Report and the GIS-based National RE Resource Mapping identifying high-impact priority sites are developed and disseminated																		
Output 2.2: A National Sustainable Energy Investment Plan (NSEIP) is developed and presented to investors and financiers in at least two (2) investment forums																		
Output 2.3: Demonstrated viability and feasibility of innovative renewable energy and energy efficiency investment projects																		
Output 2.4: Based on existing instruments, a Financing Facility is established and supports priority sustainable energy projects and business ideas																		
Project Component 3 (PC3): Qualification and certification framework for sustainable energy																		16,695.19
Outcome 3: Enhanced domestic public and private sector capacities to plan, implement, operate and innovate sustainable energy products and services in island contexts																		
Output 3.1. Improved qualification, certification and accreditation framework on sustainable energy																		
Output 3.2: Enhanced qualification and innovation capacities of public institutions in sustainable energy priority areas																		

[illegible]

X. Synergies

1. Synergies achieved:

As envisaged, south-south cooperation with the UNIDO-GEF Projects in Cabo Verde and Guinea Bissau has been established. All three countries share the Portuguese language and are Small Island Developing States (SIDS). For example, the NREAP/NEEAP process in STP is benefiting from the experiences in Guinea Bissau and Cabo Verde. A GEF-5 project has supported the development of the NREAP/NEEAP in Guinea Bissau. The GEF-6 coordinator in Cabo Verde has regular exchanges with the coordinator in STP. There is a lot to learn from the energy efficiency standard work already implemented with GEF support in Cabo Verde (GEF-5 UNDP project).

The EE standard activities in STP will also benefit from the experiences and templates of the Energy Efficient Lighting and Appliances (EELA) project currently implemented by UNIDO in partnership with SACREEE and EACREEE.¹⁴ Moreover, close coordination with ECREEE and CERMI in Cabo Verde has been established. ECREEE has been supported by UNIDO since the very beginning. The definition of MEPS and a labeling program will be outlined based on the experiences of the EELA project and the Cabo Verde experience with UNDP. In this line, it was established a partnership with AERE for developing MEPS on high impact demand products. At this stage, it is reflected in a baseline assessment of market conditions, and a first draft of the implementation and compliance framework of MEPS.

On 3 June 2021, in Brazzaville, the Republic of Congo, the eleven Ministers of Energy of the Economic Community of Central African States (ECCAS) approved a Renewable Energy Roadmap and the creation of the Centre for Renewable Energy and Energy Efficiency for Central Africa (CEREEAC) as a specialized institution. News on the STP project are disseminated regularly through the Global Network of Regional Sustainable Energy Centres (GN-SEC), www.gn-sec.net.

¹³ It includes Project Management and Monitoring (14,884.94 USD) and Evaluation (12,904.38 USD).

¹⁴ <https://www.qn-sec.net/content/energy-efficient-lighting-and-appliances-eela-project>

UNIDO, SIDS DOCK and the Global OTEC partnered to develop a utility-scale Ocean Thermal Energy Conversion Plant (OTEC). A mission was carried out in April 2022 to initiate the promotion of the project with national contacts and promote dialogues on ocean energy in an Energy vision for STP. Currently, available an agreement signed in June 2022 during the UN Ocean Conference. It is envisaged the signature of a memorandum of understanding between EMAE - São Tomé and Príncipe Water and Electricity Company and Global OTEC.

As indicated above, under the scope of a SEforALL campaign, it was established a partnership with ALER to implement trainings, the WSEP, and international events to promote renewable energy and energy efficiency investments in the country through the Africa Energy Forum (June 2022) in Brussels and the 1st International Sustainable Energy Conference in STP (July 2022). In the latter, it is also envisaged the participation of the public and private representatives of Portugal in order to work together for maximizing the visibility of energy islands initiatives and discuss investment opportunities.

Apart from that, partnerships have been established with UNDP, AfDB, EFACEC for the implementation of a PV power plant of Santo Amaro of 2.2 MWp. The linkage was established with another GEF project implemented by UNDP: "Promotion of Environmentally Sustainable and Climate Resilient Hydroelectric Electricity and Integrated Approach in Sao Tomé and Príncipe".

Another partnership was established with EDP Renováveis and TESE for grid update and expansion in Príncipe, this will also involve the analysis of connecting new renewable energy power (hydro and PV).

There are other partnerships with CIEMAT and CERMI for capacity building on i) e-learning and moodle platform based on the online tool on sustainable energy for islands and ii) photovoltaic technology.

Finally, the GEF project will have further impact through the implementation of the new Readiness GCF project, where knowledge creation and investment plans are envisaged as key activities.

3. Stories to be shared (Optional)

- SAMOA Pathway High-Level Luncheon "Mission Transforming Island Lives! The Network of Regional Sustainable Energy Centres for Small Island Developing States" on 27 September 2019 in New York at UN Headquarters: <https://www.gn-sec.net/event/samoa-pathway-high-level-luncheon-mission-transforming-island-lives-network-regional>
- São Tomé and Príncipe becomes 17th Member of SIDS DOCK: <https://www.gn-sec.net/news/sao-tome-and-principe-becomes-17th-member-sids-dock>
- Renewable Energy and Energy Efficiency Action Plans in support of the National Vision "São Tomé e Príncipe 2030: the country we need to build": <https://www.gn-sec.net/procurement/renewable-energy-and-energy-efficiency-action-plans-support-national-vision-sao-tome-e>
- ECCAS Centre for Sustainable Energy: <https://www.gn-sec.net/content/eccas-centre-sustainable-energy>
- Meeting of CEEAC-ECCAS Energy Ministers for the promotion of Renewable Energy and Energy Efficiency: <https://irena.org/events/2021/Apr/Ministerial-Validation-of-the-Central-Africa-Renewable-Energy-Roadmap>
- Central African Ministers pave the way for a regional sustainable energy centre in Angola: <https://www.gn-sec.net/news/central-african-ministers-pave-way-regional-sustainable-energy-centre-angola>
- National Renewable Energy Action Plan: <https://www.gn-sec.net/content/national-renewable-energy-action-plan-sao-tome-e-principe-0>
- National Energy Efficiency Action Plan: <https://www.gn-sec.net/content/national-energy-efficiency-action-plan-sao-tome-e-principe-0>
- Women Sustainable Energy Program: <https://www.aler-renovaveis.org/en/activities/projects/sustainable-energy-programme-for-women/>
- São Tomé and Príncipe Report From OTEC Consultation With Global OTEC and SIDS DOCK: https://www.youtube.com/watch?v=KMhj2GO0CUw&ab_channel=GlobalOTEC
- Call for the training on PV systems: <https://agenda.ciemat.es/event/3961/>
- Call for national/regional training institutes in SIDS or islands to participate in train the trainer workshops of "Online Capacity Building Program on Sustainable Energy Solutions for islands":
 - Train the Trainer Workshop in English: <https://agenda.ciemat.es/event/3906/>
 - Train the Trainer Workshop in Portuguese: <https://agenda.ciemat.es/e/TTT>

- List of articles published by the partnership with ALER:

Month	Articles
March 2021	<ul style="list-style-type: none"> ○ Green Talk & EU-Africa São Tomé and Príncipe Investment Forum;
April 2021	<ul style="list-style-type: none"> ○ ALER signs new agreement with UNIDO; ○ EU-Africa Green Investment Forum;
May 2021	<ul style="list-style-type: none"> ○ Application to host the renewable energy and renewable efficiency center in STP

June 2021	<ul style="list-style-type: none"> ○ Installation Project of a PV System at Santo Amaro Power Plant
July 2021	<ul style="list-style-type: none"> ○ Central African Ministers pave the way for a regional sustainable energy center in Angola – Driving the energy transition from the region for the region ○ Online Sustainable Energy Capacity Building Program for Islands ○ Sao Tome and Principe: Small island state in energy transition
August 2021	<ul style="list-style-type: none"> ○ Tender: Provision of services related to development and enforcement of Minimum Energy Performance Standards (MEPS) for lighting and appliances in São Tomé and Príncipe
September 2021	<ul style="list-style-type: none"> ○ You can now consult the Energy Greenhouse Gas Report for 2010 - 2019 - São Tomé and Príncipe
October 2021	<ul style="list-style-type: none"> ○ UNIDO collaboration made it possible to turn São Tomé and Príncipe the first beneficiary of the OTEC Program
November 2021	<ul style="list-style-type: none"> ○ ALER participates in the COP26 side-event organized by UNIDO, ENERGIA and GWNET ○ SAVE THE DATE: Don't miss the webinar for São Tomé and Príncipe on December 14th
December 2021	<ul style="list-style-type: none"> ○ Webinar “Inventário de Emissões de Gases de Efeito de Estufa no Sector da Energia em São Tomé e Príncipe”
January 2022	<ul style="list-style-type: none"> ○ São Tomé and Príncipe holds the first workshop on energy labelling for lighting and electrical appliances
February 2022	<ul style="list-style-type: none"> ○ Government of São Tomé and Príncipe approved NREAP and NEEAP ○ ALER held a training for Renewable Energy Associations of São Tomé and Príncipe ○ Applications for the Women Sustainable Energy Program has ended ○ Registrations are open– April 26th and 27th – Entrepreneurship Workshop and Startups of Sustainable Energy
April 2022	<ul style="list-style-type: none"> ○ https://www.aler-renovaveis.org/pt/comunicacao/noticias/dialogo-sobre-a-energia-oceanica-chega-a-sao-tome-e-principe/