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Project Document template for projects financed by the various GEF Trust Funds

Project title: National child project under the GEF Africa Minigrids Program		
Country(ies): Comoros	**Implementing Partner (GEF Executing Entity):** **DGEME -** Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water	**Execution Modality**: Full Country Office Support to NIM
Contributing Outcome (UNDAF/CPD, RPD, GPD): UNDAF 2015-2021: • Outcome 4: By 2021, the most vulnerable populations ensure their resilience to climate change and crises. • Output 4.4: Public institutions, the private sector, and vulnerable communities have the appropriate technical and technological capacity to sustainably improve access to renewable energy and energy efficiency. CPD 2015-2021: • Outcome 3: The most vulnerable populations build resilience to climate change and crises • Output 9: The country has the policy, legal and regulatory framework for the promotion and development of renewable energy		
UNDP Social and Environmental Screening Category: Substantial	**UNDP Gender Marker:** *2*	
Atlas Award ID: 00126402.2	**Atlas Project/Output ID:** *00126402*	
UNDP-GEF PIMS ID number: 6469	**GEF Project ID number:** *10473*	
LPAC meeting date: 23 February 2023		
Last possible date to submit to GEF: 19 June 2021		
Latest possible CEO endorsement date: 19 December 2021		
Project duration in months: 48 months		

Planned start date: 1 November2023	**Planned end date:** 31 October 2027
Expected date of Mid-Term Review: 1 November 2025	**Expected date of Terminal evaluation:** 1 May 2027

Brief project description:

Comoros is one of Africa's smallest countries (archipelago) but with one of the highest electrification rates. However, the effective access to electricity for end-users (residential, commercial and social) is significantly lower due to various reasons (incl. frequent load shedding, high transmission losses, etc.). This challenging energy situation hampers the socioeconomic development of an already fragile country, especially in rural areas with vulnerable populations.

As part of the UNDP-supported, GEF-financed Africa Minigrids Program (AMP), this project seeks to increase access to clean energy by increasing the financial viability, and promoting scaled-up commercial investment, in renewable minigrids in Comoros with a focus on cost-reduction levers and innovative business models. As such, it will support access to sustainable, reliable, affordable and cleaner electricity in rural areas in Comoros, contributing to durable improved livelihoods and inclusive poverty alleviation while reducing GHG emissions. The project rationale is underpinned by a novel approach to de-risk private sector and community investments in the market for rural decentralized renewable energy access. This will be achieved through (i) identifying suitable minigrid delivery model(s) and appropriate policies and regulations for a conducive renewable minigrid investments' environment, (ii) innovative business models with strengthened private sector and communities participation, (iii) support to scaled-up financing solutions, and (iv) increased awareness, knowledge sharing and network opportunities.

FINANCING PLAN	
GEF Trust Fund grant	USD 1,269,863
UNDP TRAC resources	USD 400,000
(1) Total Budget administered by UNDP	**USD 1,669,863**
(2) Total confirmed co-financing to this project not administered by UNDP	**USD 41,759,603**
(3) Grand-Total Project Financing (1)+(2)	**USD 43,429,466**

SIGNATURES:

MINISTERE DES AFFAIRES ETRANGERES ET DE LA COOPERATION INTERNATIONALE, CHARGE DE LA DIASPORA
LE MINISTRE

Programme des Nations Unies pour le Développement - MORONI

Le Directeur

Signature: **Mr DHOIHIR DHOULKAMAL,** **Minister of Foreign Affairs and International Cooperation in charge of the Diaspora**	**Agreed by Government Development Coordination Authority[1]**	**Date/Month/Year:** within 6 months of GEF CEO endorsement
Signature: **Mr MAOULIDA ALI M'LANAOINDROU** **Director General for Energy, Mining and Water**	**Agreed by Implementing Partner**	**Date/Month/Year:** within 6 months of GEF CEO endorsement
Signature: **Mr SNEHAL SONEJI** **UNDP Resident Representative**	**Agreed by UNDP[2]**	**Date/Month/Year:** within 6 months of GEF CEO endorsement DocuSigned by: 17/11/2021 CD9A2E765D86456...

[1] *Other evidence of government agreement may be accepted in lieu of a signature, unless the programme country government requires a signature.*

[2] *For NIM projects this is the Resident Representative. For DIM projects in a single country this is the Resident Representative. For global, regional DIM projects this is BPPS.*

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ACRONYMS

AfDB	African Development Bank
AMP	Africa Minigrids Programme
DGEME	Department for Energy, Mining and Water (Direction Générale de l'Energie, des Mines et de l'Eau)
ESMAP	Energy Sector Management Assistance Program
EU	European Union
GDP	Gross Domestic Product
GEA	Global Energy Assessment
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GHG	Greenhouse Gas
IDP	Intermediary Development Plan
IOC	Indian Ocean Commission
IRENA	International Renewable Energy Agency
KMF	Comorian Franc
LDC	Least Developed Country
MFF	Minigrid Funding Facility
NAPA	National Adaptation to Climate Change Action Plan
NDC	Nationally Determined Contributions
PCE	Emerging Comoros Plan
PIR	GEF Project Implementation Report
PPG	Project Preparation Grant

PRSP	Poverty Reduction Strategy Paper
SCA2D	Accelerated Growth & Sustainable Development Strategy
SDG	Sustainable Development Goal
SIDS	Small Island Developing State
SNC	Second National Communication of Comoros under UNFCCC
ToC	Theory of Change
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollar

II. DEVELOPMENT CHALLENGE

General context in Comoros

The Union of Comoros is an archipelago of 4 islands – Grande Comore, Mohéli, Anjouan and Mayotte (under French rule), with an area of 2.235km^2, located in the Indian Ocean between Mozambique and Madagascar. Comoros is Africa's third smallest country and is considered a fragile State, a Least Developed Country (LDC) and a Small Island Developing State (SIDS). It has about 870,000 inhabitants in 2020[3] (and a population growth of 2.2% per annum), out of which 53% are under the age of 20, 29% live in cities (2.8% urbanization growth per year) and a high population density of 467.3 inhabitants/km^2. 44% of its population lives under the poverty line[4]. It is a small and fragmented market with limited natural resources, and a weak economic diversification and competitiveness – mainly subsistence agriculture (contributing to 50% of GDP and 80% of the active population), a large informal sector and limited number of services. About 90% of Comoros 'export revenues are related to vanilla, cloves and ylang-ylang[5]. However, the country imports about 70% of its food needs, mainly rice, vegetables and animal products. It also relies heavily on its diaspora whereby remittances represent about 20% of its GDP, as well as donor assistance, according to World Bank.

Comoros is facing a turbulent political environment after years of heavy rotation of Presidents and a controversial reelection of today's President in March 2019, who suspended the constitutional court, cracked down on the opposition, centralized executive power, stopped the Presidential rotation between Comoros's three islands under the 2018 constitution, enabling him to potentially remain under power until 2029.

The country is increasingly vulnerable for the past years to natural disasters and climate change effects (recent cyclone Kenneth, tropical storms, floods and volcano eruptions), which negatively impact the socio-economic situation across the archipelago.

COVID-19 has further enhanced Comoros' fragility and hampered trade and tourism post-Kenneth leading to an economic slowdown (-1.4% GDP growth expected in 2020 and only 1.5% growth in 2019).

Carbon emissions and Energy situation in Comoros

Electricity production heavily relies on thermal diesel generation and imported fossil fuels to nurture disseminated small-scale diesel generators throughout the three islands amounting to a total installed capacity of 31.5MW. However, due to high transmission losses (35%), lack of suitable maintenance and rehabilitation of equipment, limited power infrastructure investment, poor management at SONELEC (the national power utility), the available generation capacity is significantly lower. Load shedding are common daily practice, and many places have access to electricity only a few hours a day (often between 6pm and midnight). High electricity cost at USD 0.75 per kWh[6] (imported fuel with low economies of scale and struggles in the fuel supply chain) compared to an end-user price of USD 0.29 per kWh (national uniform tariff of KMF 120/kWh as per law), billing collection issues and theft, are putting the power sector, and SONELEC in particular, under extremely high financial pressure. The Comorian government often has to replenish SONELEC's funds, negatively impacting already fragile public finances. While the 82%[7] national electrification rate is one of the highest in Africa, the effective access to electricity is way lower, leading to a *per capita* electricity supply comparable to quite a few Sub-Saharan countries with significantly lower electrification rates. Thus, a large majority of Comorians have to fall back on alternative solutions such as kerosene or candles for lighting, commercial charging stations for their mobile phones, and disposable batteries for small appliances. In addition, according to the Second National Communication (SNC) of Comoros to the UNFCCC, the energy sector in Comoros is the third largest GHG emitter in the country (9%) and under a business-as-usual scenario energy could become number one representing 48% of GHG emissions by 2030. Energy demand growth is evaluated to increase by 69.6% in Comoros by 2030 especially due to demographic growth. This has been further emphases in the NDC (Nationally Determined Contributions) of the country. The Energy sector is the second emitter of carbon emissions

[3] UN Country Stats, visited on December 28, 2020 http://data.un.org/en/iso/km.html
[4] African Development Bank Group and UN Women, 2015: *Dimension de la Pauvreté et du Genre aux Comores*
[5] World Food Programme, 2019 : *Annual Country Report 2019*
[6] Government of Comoros, 2019: *Plan Comores Émergent 2030 – Boucle Énergétique des Comores*
[7] ESMAP Stat Hub, visited on December 29,2020 https://trackingsdg7.esmap.org/country/comoros

in Comoros, after the AFOLU sector. Both the TNC and the NDC highlighted the potential of GHG emission reductions of in the energy sector.

Recent efforts, especially in terms of power infrastructure investments in renewable energy, should contribute to an improvement of the situation, at least in part of the country. Comoros is endowed with significant renewable energy resource potential despite its relatively small country size. Solar energy in particular constitutes the most uniformly distributed renewable resource of the archipelago with an average sunshine level of 6 kWh/m^2/day, i.e., a potential of 3,600 GWh per annum. Recent power investments include grid-interconnected solar plants of about 3MW each respectively on the three islands (by private sector developers, and the European Union) and a 10MW geothermal power plant around the Karthala volcano on Grande Comore under a GEF6/UNDP project. Some critical reforms of the energy related legal and regulatory frameworks are undergoing with the support of various players including AfDB, World Bank, the EU, and UNDP, but are slowed down especially due to a lack of institutional and technical capacity within the government.

Problem Statement and project rationale

This challenging energy and electricity situation hampers the socioeconomic development of an already fragile country. It is worsening poverty especially in rural and remote areas as well as for vulnerable parts of the population such as smallholder farmers and fishermen, women and youth.

The development challenge that the Comoros AMP project seeks to address is **access to sustainable, reliable, affordable and cleaner electricity (SDG 7) in rural areas in Comoros** in order to contribute to durable improved livelihoods and inclusive poverty alleviation while reducing GHG emissions. The catalyzing role of energy in economic and social activities (including public services) and the two-way relationship (vicious circle) between access to suitable and affordable energy services and poverty are undeniable and have been proven and demonstrated many times[8].

Consistency with national strategies, plans or reports, and assessments under relevant conventions

Addressing this challenge complies with the following national policies, strategies, plans and relevant international conventions, while none specifically address minigrids (hence to be included in Component 1 of this project):

- **SCA2D - Accelerated Growth and Sustainable Development Strategy 2018-2021** where access to energy plays a key role. Investment credits should be granted by the government for infrastructure and equipment related to energy as a key production factor and driver of economic growth, with a particular focus on renewable energy.
    - AMP acknowledges the role of energy as a catalyzer of sustainable development and includes subsidies of CAPEX investment for 3 sites as well as the promotion of private sector investment to support the minigrid market upscaling.

- **PRSP – Poverty Reduction Strategy Paper** aims at improving access by the population to energy, strengthening economic growth and the development of income-generating activities notably in the agriculture, energy and transport sectors.
    - AMP acknowledges the role of energy as a catalyzer of economic growth, especially in rural areas.

- **National Energy Sector Strategy and its Action Plan** The overall objective of the Strategy is to (i) Manage the level of energy dependency; (ii) Increase access to energy; (iii) Develop credible and sustainable economic viability of the energy sector; and (iv) Promote sustainable development.
    - AMP, through the development and upscaling of the solar minigrid market in Comoros contributed to reducing energy dependency towards imported fossil fuels (especially during COVID times) as well as increase energy security, AMP's aim is to increase access to energy in rural areas where the grid is absent or limited. AMP is also aligned with the Strategy and Action Plan as it leverages cost reductions

[8] GEA, 2012. *Global Energy Assessment - Toward a Sustainable Future*, Cambridge University Press, Cambridge, UK and New York, NY, USA and the International Institute for Applied Systems Analysis, Laxenburg, Austria; Chapter 2 – Energy, Poverty and Development

in terms of hardware, finance and more, and promotes innovative business models and solutions that are sustainably viable for the private sector.

- **PCE – Emerging Comoros Plan 2030** targets a structural transformation of the economy especially through the catalyzing role of both national and international private sectors. Specifically, the Comoros Energy Loop, considers the integration of renewables into the energy mix including through solar energy.
    - AMP is fully aligned with the PCE as it focuses on the role of the private sector to provide suitable energy solutions and investments in renewable minigrids in rural areas. It is particularly focusing on solar energy.

- **IDP – Intermediary Development Plan 2020-2024**, launched in August 2020 by the President, closely linked to the PCE, highlights the role of energy as a lever of Comoros' socio-economic development including in contributing to unleashing the high potential of agriculture and fishing as well as the youth and their capacity building.
    - AMP relies on the catalyzing role of renewable energy for socio-economic development while being green and environmental-friendly. The project focuses on the productive use aspects for the sustainability of minigrids in rural communities especially around agriculture (preselected sites in Grande Comore and Anjouan) and fishing (in Mohéli). Youth and women play a particular role in the project including as lever for scaling-up and profitability while creating jobs and providing capacity building.

- **NDC – Nationally Determined Contributions 2015-2030,** insists on reducing its energy dependency and satisfying the energy demand of its most vulnerable populations by promoting renewable energy. Combined with other sectors including agriculture, forestry and waste management, Comoros aims at reducing its GHG emissions by 84% by 2030 (and 69% by 2025).
    - AMP targets vulnerable populations (rural communities) and supports the fulfillment of their energy demand while reducing GHG by using solar technologies exclusively.

- **Second National Communications (SNC) under UNFCCC** highlight the State's and population's will to achieve the GHG emissions reduction especially by unleashing Comoros' renewable energy potential.
    - AMP focus exclusively on solar minigrid systems and targets GHG emissions reduction.

- **NAPA - National Adaptation to climate change Action Plan,** submitted in 2006, considers energy as one of the most vulnerable sectors to climate change (10.5% of the population) while agriculture is the most vulnerable one, impacting 26.2% of the Comorian population. NDC thus includes energy as one of its programmes aiming at "ensuring a regular supply in energy at low cost", which encompasses the promotion of renewable energy.
    - AMP targets both energy and agriculture, and climate change mitigation. It aims at contributing to provide access to an affordable, available, reliable and clean energy to vulnerable populations in rural areas through innovative business models, technology and financing solutions around off-grid solar minigrids.

Barriers and risks to renewable energy minigrid development in Comoros:

During the PPG and based on the Derisking Renewable Energy Investment - DREI Methodology developed by UNDP, the following key barriers and risks to expansion of minigrids in the country were evaluated. Information sources were mainly stakeholder consultations, field missions and desk review. For each of the risks identified, mitigation measures were proposed. Table [x] below describes these risks, which will subsequently be addressed in the project design.

Table 1 Assessment of investment risks using the DREI methodology

Risk Category	Description/Underlying Barriers	Risk Level
Energy market risk	*Policy & regulatory framework, market access, competition and grid expansion:* • Lack of clear targets in terms of rural electrification through MINIGRIDs and favoring grid extension • No dedicated minigrid strategy/plan • Electricity Code (law) allowing communities to request and own MINIGRIDs, and contract private sector operators to install and operate the MINIGRID. But private developers cannot own the MINIGRID/no liberalization planned • Limited capacities and outlook at government and national utilities level in terms of MINIGRID • No energy regulator	High
	Market understanding and outlook: • Relatively small potential MINIGRID market perspectives due to the high electrification rate (82%) and relatively small size of MINIGRIDs to be installed and operationalized • Several studies undertaken on the energy situation and market but not consolidated in a centralized repository	High
	Tariffs & competing subsidies: • Subsidized and uniform nationwide electricity tariff at KMF120 (≈USD 0.29) for the national grid only (SONELEC) • No tariff set for community-based tariffs. Each community with an isolated MINIGRID negotiates its tariff directly with the private operator	Low
	Technical standards: • Lack of government technical requirements for MINIGRIDs regarding (i) quality of service and (ii) grid integration should it occur • Interconnected minigrids respectively on 3 islands do not seem to include clear technical standards • Low quality generic equipment and products could jeopardize the proof of concept of pilot sites under this GRF/UNDP project	Medium/High
	Competition of fossil-fuel solutions: • Diesel generation industry could sabotage the development of miningrids in electricity-underserved rural areas in Comoros	Low
Social Acceptance risk	• Communities are used to take care of building and operating some public services aspects e.g., road, school, health center, etc., and in some cases of MINIGRIDs (Mini-hydro, diesel generator, biodigester) • Limited awareness on solar MINIGRID and solar solutions in general for both household and productive use especially in rural areas (targeted by the project) • Ability and willingness to pay for electricity can become critical. Social services in Comoros, for instance, tend not to pay their electricity bills. In some rural areas, communities are not used to pay for electricity as not connected to the grids and just a few SHS, gas lanterns, etc.	Medium

Risk Category	Description/Underlying Barriers	Risk Level
Hardware risk	• *Quality of hardware:* Lack of access to information on quality, reliability (performance) and cost of hardware; lack of clarity or uncertainty regarding government technical standards to ensure safety of minigrid hardware; lack of availability of warranties for components • *Availability of hardware:* Lack of quality solar products on the market especially batteries and inverters • *Customs:* Customs tariff exemption for some RE products but not always enforced by customs agents and some equipment are excluded such as inverters • Still relatively nascent market even for SHS with a few local private players sourcing their hardware themselves	Medium/ High
Digital & knowledge sharing risk	• Relatively acceptable mobile penetration rate (75% in 2019) , despite lack of telco antennas in some rural areas including on one pilot site (Ouzini); mobile money still in its relative beginning but expanding • Lack of experience and understanding on the use of minigrid based electricity: payment, potential fees, consumption control, etc. • Lack of digital presence and knowledge sharing around energy and RE at all levels	Medium
Service discontinuity risk	• Abandoned assets (minigrid systems) before the lifetime end due do various potential issues: payment collection, profitability, maintenance, management, qualified staff, etc.	Medium
Developer risk	• Limited local minigrid developers and capacities except for a few energy service providers focusing more on SHS & ancillary equipment but some experience with micro-grids (e.g. KAMAR Solaire and with a UNDP Small Grant in a village, SunPower Energy) and collaborating on specific areas with interconnected solar-farms developers, e.g., local Nétisse with French Innovent). This is also due to the fact the market is relatively nascent and limited demand so far. • Inability of developers to secure low-cost financing from investors due to lack of credit worthiness, or insufficient cash flows to meet investors' return requirements • Finding the 'right' balance between profitability and social acceptance	High
Labor risk	• Limited capacities of the DGEME and SONELEC in terms of minigrids' delivery model, procurement procedures, tariffs, etc.) • Lack of competitive labor market of educated, skilled and qualified potential employees (, leading to higher costs, hiring non-local staff and suboptimal performance) and of maintenance technicians on the ground	High
End-user credit risk	• Lack of end-user credit scoring mechanism to assess the ability of end-users to pay for initial connection fees, ongoing electricity bills and ancillary equipment (e.g., solar appliances, lights, etc.) • Limited energy-focused consumer finance products related except for individual credits where credits for electricity connection and appliances is included ("social loan" of MECK and SANDUK), productive loans (MECK) including solar equipment for small businesses, as well as leasing of solar PV and ancillary equipment with SANDUK and Sunpower Energy, a local energy service provider • Low purchasing power of rural communities and risks of non-payment of electricity bills as it is the case today with SONELEC where ⅓ of the bills are not paid • Public services such as schools and health centers have an agreement with SONELEC whereby they don't pay electricity bills	Medium/High
Financing risk	• Limited access to capital in Comoros for private investors (equity and debt), especially for RE • No domestic investor experience and familiarity with minigrid as nascent market and lack of information, assessment skills and track-record for minigrid • Co-financing efforts at PPG phase are not entirely rolled-out at implementation phase	High

Risk Category	Description/Underlying Barriers	Risk Level
Currency risk	• Fixed FX rate between the Comorian Franc (KMF) and the Euro EUR 1 = KMF 491.96775) limiting the volatility of the local currency, but volatile towards under currencies such as the USD • No sufficient domestic currency revenues to cover hard currency debt/equity servicing as well as high interest rate and collateral requirements from local financial institutions	Medium
Sovereign risk	• Turbulent political environment in Comoros after years of heavy rotation of Presidents, today's president Azali Assoumani — a former coup leader who won the 2016 presidential elections and his controversial reelection in March 2019, suspended the constitutional court, cracked down on the opposition, centralized executive power, stopped the Presidential rotation between Comoros's three islands under the 2018 constitution, enabling him to potentially remain under power until 2029 • Initial international pledges of USD 6.8bn after an investors' round table led by the Comorian President in December 2019 to support the Plan Comores Émergent (PCE) are likely to be reduced or suspended due to COVID-19 and its impacts • While some agricultural products are exported at a relatively acceptable price (vanilla), climate risks and limited resilience, country isolation (island) and small market size (<900k inhabitants) are contributing to a fragile economy. Fragility enhanced through COVID-19 effects especially on trade and tourism leading to economic slowdown (-1.4% GDP growth expected in 2020)	High
Sanitary risk / COVID-19	• On December 6, 2020, Comoros has had 616 COVID-19 cases and 7 deaths • COVID-19 has hampered the economic and social recovery post-cyclone Kenneth • High socio-economic impact on informal economy which accounts for 79% of jobs in Comoros the most vulnerable households may face economic difficulties in meeting their basic needs such as water and electricity supply • Considering that electricity production in Comoros relies on 96% fossil fuels, a disruption in hydrocarbon imports due to COVID-19 would directly impact the country's energy security. • Healthcare is critical in Comoros where life expectancy is respectively 62 for men and 67 for women. Government expenses per capita for healthcare are low at USD 32 per capita per year and there are only 1.5 medical physicians per 10,000 inhabitants. Malaria is one of the main diseases in the country. • Procurement delays due to restrictions on imports, affecting the pilot projects	Low
Environment & Climate risk	• No real measures, standards and arrangements for the disposal of used batteries, solar panels, converters and other grid equipment • Comoros is increasingly subject to cyclones such as cyclone Kenneth in April 2019 with a negative impact on Comoros' population, its livelihood and economy • Rain-patterns, sea-level rise (expected to reach 20 cm by 2050 according to IPCC) and deforestation are negatively impacting Comoros, its agriculture, food production and water supply. These can be reflected either by dramatic droughts or heavy rainfalls (e.g., in 2012 affecting 65k people and damages of USD 18-20 million) • Volcanic (Mount Karthala) and seismic activities represent a climate risk	High
Overall Risk	• Based on the evaluation of the different risks, the overall risk of the project is set to HIGH	High

III. STRATEGY

In order to reach SDG 7 to ensure access to affordable, reliable sustainable and modern energy for all, especially in rural areas outside the power grid, minigrids based on renewable energy sources or low-carbon can be a powerful lever can be a powerful lever in terms of price (cheaper in terms of demand and supply through avoided large grid investments in infrastructures), time (faster), scale (cross-sectorial) and GHG emissions (reduced significantly). According to the latest Tracking SDG 7: The Energy Progress Report (2021), while the number of people not having access to electricity has decreased from 1.2 billion to 759 million between 2010 to 2019 (SDG 7.1.) and the share of total final energy consumption from renewables has increased from 16.4% to 17.1% (SDG 7.2) worldwide, it is still not sufficient to reach the targets by 2030. In addition, the COVID-19 pandemic had a reverse effect on energy access. It is estimated that in 2020, more than 30 millon people who already benefited from access to electricity would not anymore due to a lack of affordability. This situation is especially noticeable in Least Developed Countries, such as Comoros. Nevertheless, the pandemic has proven that renewable energy solutions were more resilient than imported fossil fuel solutions. Prices of renewable energy equipments have dropped and innovative business models are flourishing (including around minigrids). As such, efforts should be made at international up to local level to leverage the situation and further promote renewable energy solutions to contribute to reaching SDG 7.

Based on the development challenge (See II) of access to sustainable, reliable, affordable and cleaner electricity in rural areas in Comoros in order to contribute to durable improved livelihoods and inclusive poverty alleviation while reducing GHG emissions, different solutions can be envisaged. The figure below presents the problem (center part – blue), its root causes and barriers (lower part – brown), as well as how the project plans to address these barriers (upper part – green).

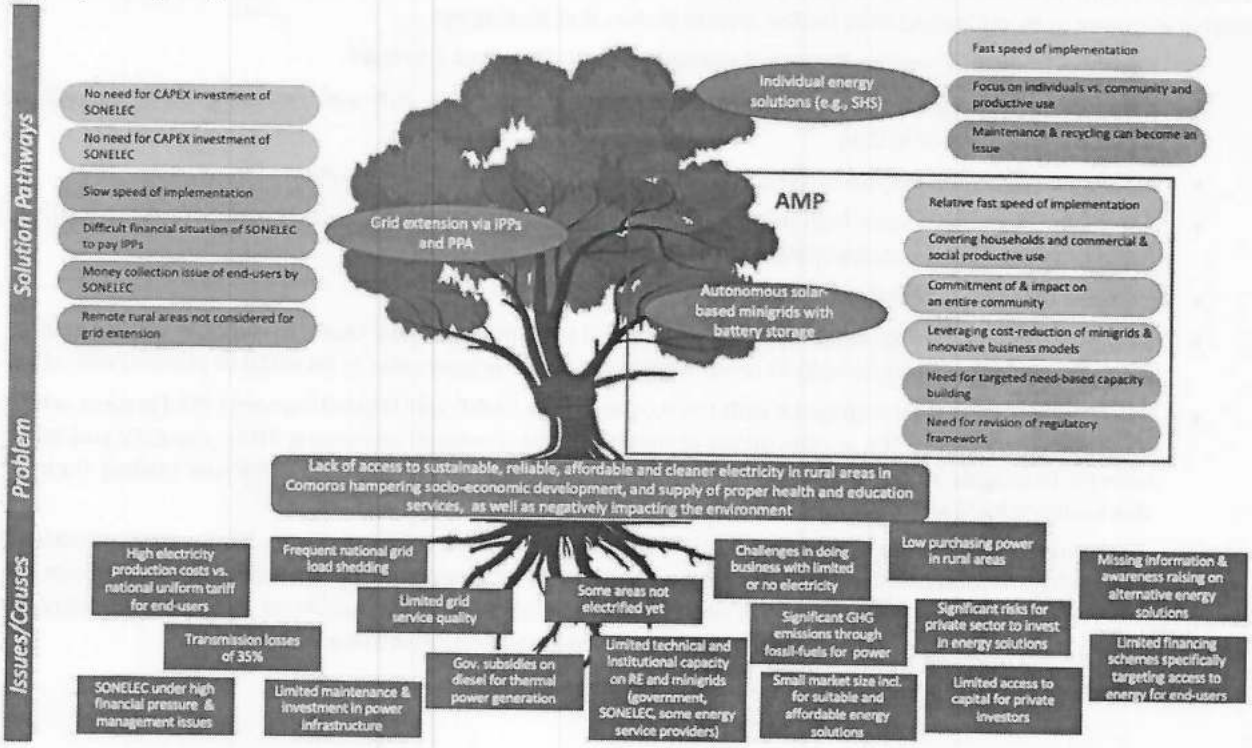


Figure 1 – Root Causes and Solutions Tree

The strategy adopted by the project to overcome the development challenge relies on **improving the financial viability and promoting scaled-up commercial investment in renewable energy minigrids** ("minigrids"). Indeed, while some efforts are made in Comoros to include renewable energy into the energy mix (as stated in II – Development Challenge and indicated in the upper part of the solutions tree through grid extension via RE IPPs and individual energy solutions), isolated minigrids are not yet considered as a suitable alternative by the government. This is mainly due to favoring a national grid extension approach for electrification (vs. off-grid solutions), a lack of

technical and institutional capacity, and a market distortion through fossil-fuel subsidies for thermal power plants (representing 96% of the electricity production) of KMF 3bn (≈USD 7.2M) per year (according to the Loi de Finances - Finance Law). Investments in and scale-up of autonomous minigrids in Comoros are confronted to 6 main barriers as stated below:

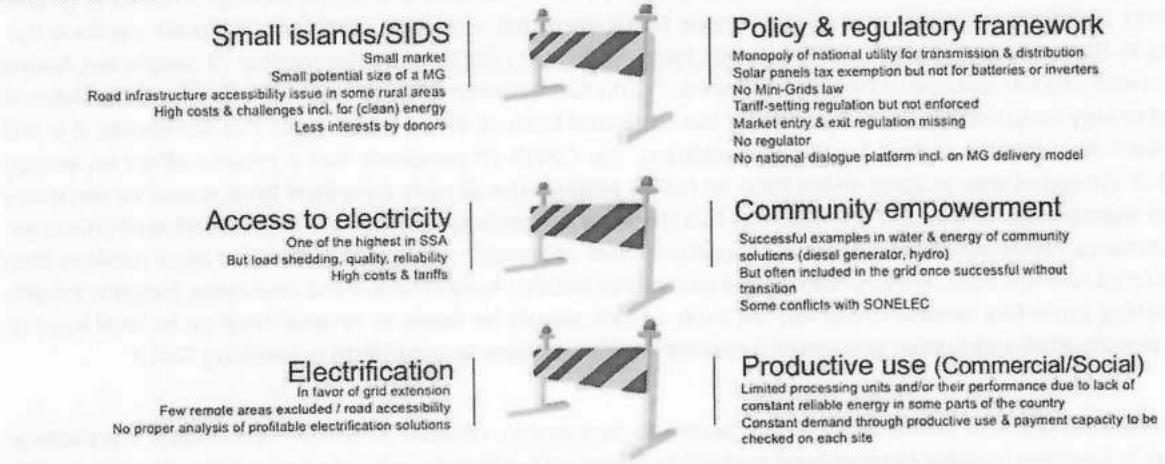


Figure 2- Barriers to private sector investment in and scale-up of minigrids in Comoros

The project aims to overcome the barriers to the development and scale-up of the early-stage renewable minigrid market in Comoros by mitigating risks for the private sector, and leveraging:

- Clearly defined and regulated minigrid delivery model(s) (see Box 1 below)
- Minigrid costs reduction, by benefiting from reduced hardware, soft and financing costs, as well as digitization (See Box 2 below)
- Suitable innovative minigrids business models development and implementation
- Energy for productive use's high potential and sustainable energy demand, be it commercial (agriculture, fishing, services, etc.) or social (health and education facilities)
- No need to invest in diesel generators
- Minigrid Funding Facility development with financial institutions and more to support private energy services providers to reduce risks in terms of services discontinuities due to financial or physical impacts
- Batteries and other wastes disposal with the support of the UNDP/GEF ISLAND Comoros child project, which objective is to prevent the accumulation of materials and chemicals containing POPs, mercury and other harmful chemicals in the environment of Comoros, and also to manage and eliminate existing harmful chemical products and materials in the Union of Comoros.

AMP Comoros puts a particular focus on increasing economic and social resilience to COVID-19, any other pandemic outbreaks, as well as natural disaster (such as cyclone Kenneth) by ensuring and strengthening access to power for key public services facilities (health centers, hospitals and clinics) as well as supporting economic recovery by accessing a sustainable, reliable and affordable electricity for productive use and households.

The project's theory of change can thus be summarized in the figure below:

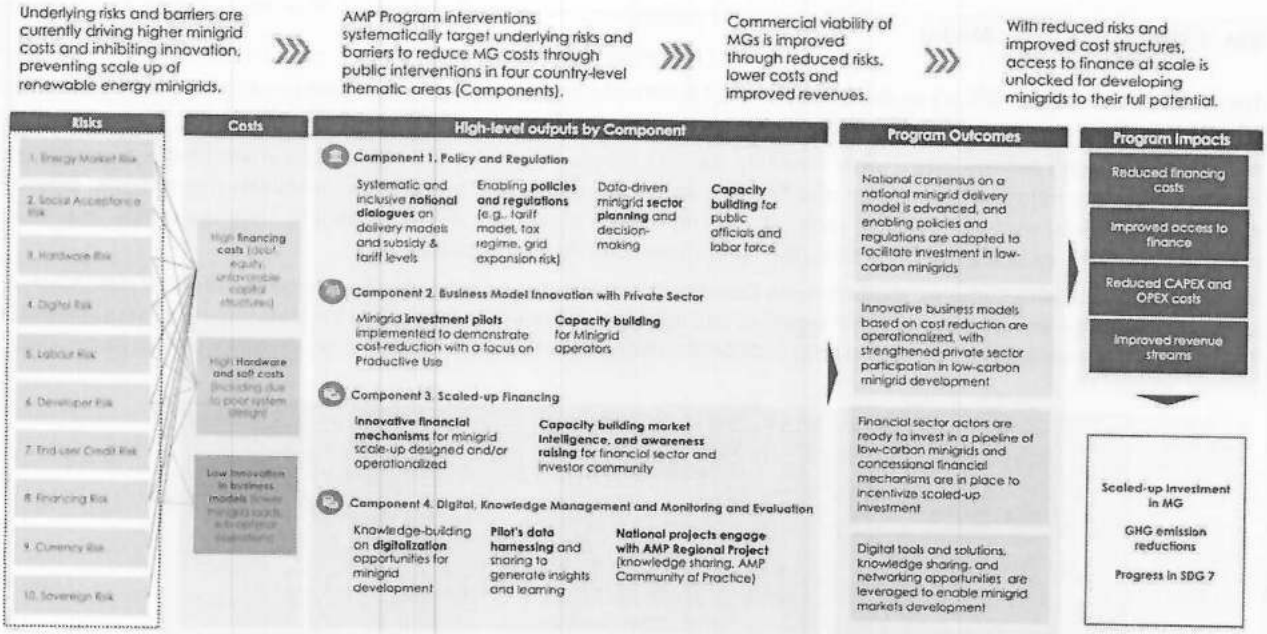


Figure 3- Project's Theory of Change (ToC)

By increasing the financial viability of renewable energy minigrids, communities and private sector are stimulated to invest in such energy clean tech solutions, and effectively and efficiently facilitating access to reliable and affordable energy for end-users in rural areas in Comoros, while reducing GHG emissions. As such they contribute to improving livelihoods, economic and social activities and inclusive sustainable development in rural communities.

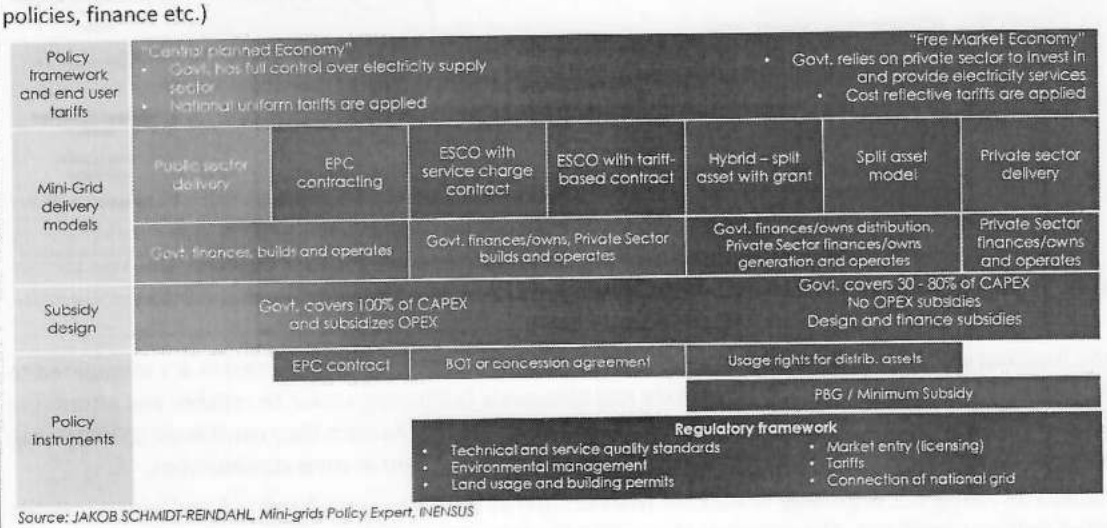
The financial viability of minigrids, especially in nascent market such as Comoros, goes hand in hand with a suitable and well-accepted delivery model(s). The concept of a minigrid 'delivery model' is hence a key concept for this project. Further details on the delivery model can be found in box 1 below.

Box 1 Minigrid Delivery Model

The concept of a minigrid 'delivery model' is a key concept for this project. This text box seeks to set out a common understanding of the concept, its importance to the project, and the current status of the minigrid delivery model in Comoros.

Definition: A minigrid delivery model, determined by the national government, is the cornerstone of a country's over-arching minigrid regulatory framework. It defines who finances, builds, owns and who operates and maintains the minigrids. Where applicable, it seeks to engage the private sector. A minigrid delivery model is closely associated to other key components of a minigrid framework, including tariff structures/mechanisms and subsidy levels/mechanisms.

In each country, including Comoros, identifying one (or more) delivery models will provide a framework for all sector stakeholders to plan for the longer term, particularly with regard to mobilizing private investment as one of the main objectives of the project. The figure below describes the spectrum of design options for delivery models, across a number of different elements (ownership, policies, finance etc.)



Source: JAKOB SCHMIDT-REINDAHL, Mini-grids Policy Expert, INENSUS

Figure 4 - Conceptual outline of minigrid delivery models

This decision-making process around identifying a delivery model is complex and should ideally be done in the form of a national dialogue involving all relevant stakeholders to varying degrees (different ministries such as energy, finance, health and environment, local authorities, the public, the media, the beneficiary communities, utilities, the private sector, and other key stakeholders) in order to build a national consensus on the basis of which large-scale deployment of mini-grids can be accelerated and have a sustainable impact.

Pilot projects planned under this project will also seek to fit into this framework. The more clarity there is on the part of the government regarding the choice of delivery model, the easier it is to develop or plan business models which can reduce minigrid costs. A clearly identified delivery model minimizes the risk of investments being made based on assumptions that are not in line with government expectations and may lead to conflicts and economic losses down the line. It also helps the government to answer the important questions related to the rural electrification sector to provide clarity for private investors and operators and build confidence.

Financial viability is also interlinked with cost optimization which is generated especially thanks to the 'digital opportunity'.

Box 1 – Digitalization of Minigrids

Digital technologies and solutions are fundamental to enabling off-grid electrification. In fact, the emergence of minigrids as a viable solution to electrify remote and isolated communities relies strongly on certain digital technologies such as *remote monitoring* of minigrid operations and the use of *digital money* to collect customers' payments. The figure below represents an initial categorization of the digital and data opportunities for minigrids under the AMP.

Digital opportunity for minigrids. It's increasingly clear that digital is a key entry point across minigrid market development. The figure below shows different categories of digital solutions in the minigrid sector: (i) digital planning, (ii) digital operations, (iii) digital aggregation platforms, and (iv) digital payments. In common to all these is the potential of digital technologies – whether used by policy makers, financiers or minigrid developers - to lower minigrid costs, reduce risks, and address barriers to scale.

Data use opportunity for minigrids. Many opportunities around digitalization are related to leveraging the large amount of data generated by minigrid projects to surface actionable insights, learning and optimization to consolidate business models and technical solutions for scaling-up minigrids. For instance, the use of operational performance information from existing systems to forecast demand and design future minigrid can help avoid a very common pitfall of many minigrid systems which are significantly oversized and hence not financially viable.

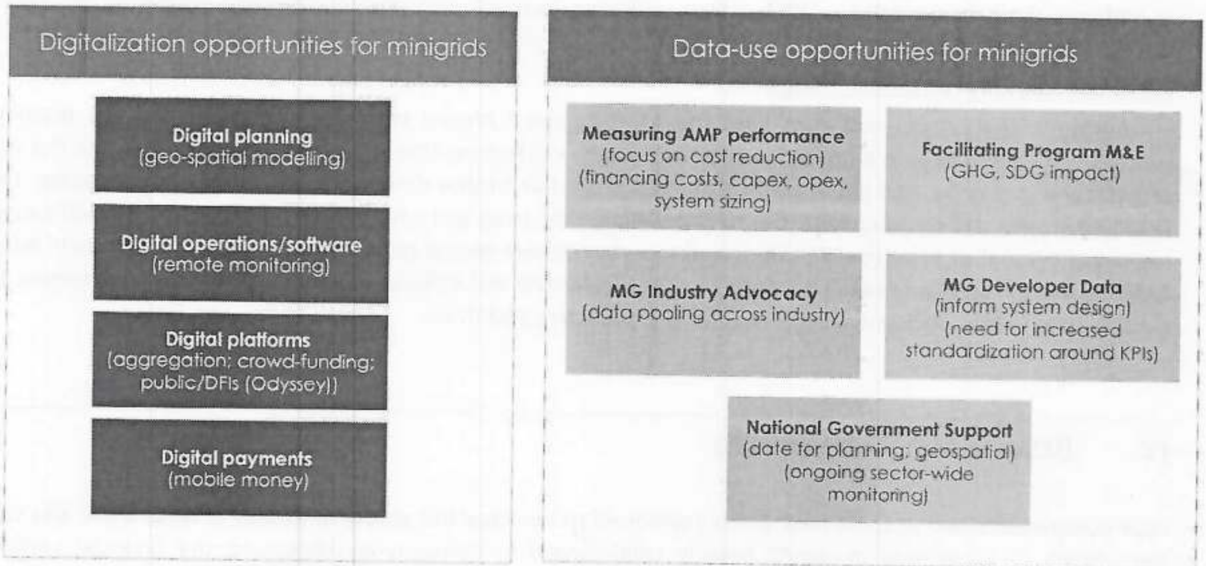


Figure 5 - Digital and data opportunities for minigrids in the AMP

The potential for using data and digital tools and solutions to add value at various stages of the minigrids value chain remains largely untapped. With enhanced capacity, **minigrid developers** could streamline their operations though smart metering and remote control of their assets and potentially reduce operations and maintenance costs by about 15% to 30% (*)through reduced site visits, labor and component replacement costs. **Government stakeholders** could leverage digital solutions for energy sector planning, to streamline licensing, monitor quality of service and broadly improve sector oversight. However, data of sufficient quality is not always available for these purposes, and government stakeholders often lack the necessary technical capacity. And while data could be a tremendously valuable asset in the minigrid sector, this potential that remains largely underutilized due to the lack of standardization and common data reporting protocols and the fact that this sector is still very nascent and remains relatively fragmented.

Opportunities across the Program, and with the AMP regional project. The AMP provides a unique opportunity to develop a single set of metrics and guidelines for data collection and use them to collect data from minigrid investment pilots across different national projects which the AMP Regional Project can then aggregate, derive insights from, and systematically disseminate knowledge with participating AMP countries and with the broader minigrids sector in Africa. At the same time, the link between the regional project and the total of eighteen (18) national child projects provides a unique 'distribution channel' opportunity across Africa for AMP to mainstream the use of digital tools and solutions for minigrids cost-reduction and scale-up.

(*) AMMP Technologies. *"Reducing the cost of operations and maintenance for remote off-grid energy systems." September 2018.*

Alignment with GEF Focal Area

The program is aligned with Objective 1 of the Climate Change Focal Area to "Promote innovation and technology transfer for sustainable energy breakthroughs", and through CCM1-1 - Promote innovation and technology transfer for sustainable energy breakthroughs for de-centralized renewable power with energy storage.

It also contributes to points 113 and 119 of the GEF-7 Programming Directions (chapter on the Climate Change Focal Area Strategy) to accelerate "the speed and scale of sustainable energy investment in developing countries", to develop "innovative business models that go beyond business as usual" and to foster innovation. The overall contribution towards supporting "transformational shifts towards low emission and climate-resilient development pathways" is particularly important given access to affordable and reliable renewable energy is unavoidable for sustainable development, particularly in a context where Comoros is struggling to secure reliable energy access to off-grid communities. At the very heart of AMP lies innovation which can only unleash its potential and impact combined with a conducive environment and enabling conditions through policy and regulatory framework reforms (point 120). As renewable minigrids will be developed and operational, supported by innovative business models that can be scaled-up, the programme also aligns with the objective to focus "on the demonstration and early deployment of innovative technologies to deliver sustainable energy solutions that control, reduce or prevent GHG emissions" (117).

In addition, the program follows GEF's advice to deliver focused interventions "through programmatic approaches or regional projects" (118).

Alignment with AMP Regional Project

Furthermore, the project will align with the AMP Regional Project to foster knowledge sharing, learning, and synthesis of experiences in a multi-directional manner– i.e. flowing from the AMP Regional Project to the Comoros project, and vice versa, and between the Comoros project and other national projects within the Program. The AMP Regional Project will connect countries to knowledge, resources and networks of best practice and will support the rapid deployment of expertise, solutions and tools to support on-the-ground implementation. The main role of the AMP Regional Project is to make best practices in regulations and policies, innovative and inclusive business models, digitalization and financing available to all AMP beneficiary countries.

IV. RESULTS AND PARTNERSHIPS

Four components and outputs have been developed to increase the access to energy in rural areas and stimulate the uptake of renewable minigrids (mainly solar-based) in Comoros by improving the financial viability and promoting scaled-up commercial investment in such systems. The project focuses on the cost-reduction (hardware, soft and financing costs) and innovative business models for minigrids. UNDP's derisking approach will be adopted to catalyze private sector investments in the off-grid rural energy market. In doing so the activities proposed under the four project outcomes will seek to:

1. Provide the enabling conditions for the development of Comoros' minigrids nascent market through a suitable policy and regulatory framework
2. Promote innovative and sustainable minigrids business models through pilot sites with communities and private sector investments
3. Facilitate access to supply and demand financing via innovative financial mechanisms
4. Support the scaling up of rural electricity access for the sustainable development of communities through a sound and robust knowledge management and M&E framework

In accomplishing this, the project will have access to (if requested) a variety of dedicated technical and operational support from the AMP regional project, as described in Box 2 below.

Box 2 Linkages to the AMP Regional Project –Access to technical and operational support

As part of the AMP network, the project will have access to (if requested) a variety of dedicated technical and operational support from the AMP regional project as follows:

1) **Access to specialized expert international consultants in selected areas** (DREI, data, GIS modeling, mini-grid business models, etc.) hired, retained, contracted and paid for by the AMP regional project and made available to all participating national project staff and selected beneficiaries on as needed basis. The areas of support, listing of available firms/individual consultants under contract by the regional project and protocol for how the project can request and/or access such expertise (if needed/requested) will be elaborated in the first year of regional project implementation and disseminated to this project and the staff of all other participating AMP national projects. This support may range from virtual assistance to in-country missions. All requests for such assistance must be approved by the project manager of the AMP regional project management unit.
2) **Provision of a database of qualified international consultants and firms** disaggregated by their expertise in the four main components of this national project and other key operational areas (procurement, M&E, communications, etc.). These individuals will not be retained or contracted under the regional project but rather provided to the project for informational purposes only in an effort to assist in identifying high-quality experts and firms who may be available for contracting by national governments under their own procurement rules and modalities.
3) **Provision of generic terms of reference (ToR) for various standard activities** (mentioned above) under the four main components of the national project.
4) **Advisory support by the AMP regional project management unit** to staff of the project on trouble shooting (operational support, ToR reviews and problem solving) on an ad-hoc and as-needed basis. These services will be paid for the regional project and available on a first-come/first-serve bases under a protocol to be established by the regional project.
5) **Specialized advisory support for implementing UNDP's minigrid DREI analyses.** During project implementation, the UNDP DREI Core team, working with the regional project, will make available to national teams and consultants the resources and tools to conduct full quantitative DREI applications, and will provide ongoing support and quality assurance.

A full detailed elaboration of these offerings and the protocols attached to each service will be communicated to the project at the inception workshop of the regional project and at the inception workshop of each national project.

Project Objective:

Supporting access to clean energy by increasing the financial viability, and promoting scaled-up commercial investment, in renewable minigrids in Comoros with a focus on cost-reduction levers and innovative business models

An inclusive and participatory approach has been used to develop the project document. A particular emphasis has been put on involving all key stakeholders from the beginning of the project design throughout the implementation and monitoring (see Stakeholder Engagement Plan in Annex 9). Gender and socio-environmental considerations are inherent to the inclusive and participatory approach, complying with UNDP and GEF guidelines (see Annexes 10 & 11). Specific needs and realities were considered to design a project as adapted and inclusive as possible. The additionality aspect has clearly been explained and complied with throughout the project document. Collective efforts, commitment and ownership of beneficiaries and other relevant stakeholders were sought to ensure efficient and effective sustainable impacts in rural areas, also reflected by several co-financing letters.

Innovation is at the very basis of the AMP theory of change, reflected throughout the AMP Comoros project components, outcomes, outputs and activities. The particular situation of Comoros (SIDS, high electrification rate, climate risks, etc.) combined with its nascent minigrids market led to leveraging lessons learnt and best practices in other countries (AMP countries, SIDS countries, SADC, etc.). A leapfrog should be achieved to the benefit of targeted beneficiaries and other stakeholders in the country.

An adaptative approach has also been employed in the development process. Changes have been brought to the project design at PPG phase based on more informed and updated baseline assessments since the validation of the PIF in December 2019. Baseline assessments and stakeholder consultations have provided ample evidence for focusing the project on a high involvement of the communities in minigrids to be implemented. In fact, the government is not willing to liberalize the energy sector (except for power generation). However, there is an exception in the Energy Code stipulating that a community can seek the approval of the government to get its own minigrid. Once approved, the community can then hire a private sector operator to develop, install and/or operate the minigrid. The community shall inform the Government about the tariff negotiated with the private sector

operator. Such a tariff does not fall into the national uniform tariff of KMF 120/kWh (≈$0.29) regulation that only applies to the national grid of SONELEC (national power utilities). In addition, due to the high electrification rate in the Comoros (82%[9]) and the grid expansion plan, solar minigrids targeted in the project will also encompass sites with limited or unreliable access to electricity, and hybrid solutions, on the one hand, and potential interconnection to the grid on the other. A particular focus is put on energy for productive use be it for business purposes or for public services (health centers, schools, etc.).

Climate risks over the period 2020-2050 have been carefully considered in the project's objectives and outputs. The archipelago is already affected by the multiplication of cyclones (especially Cyclone Kenneth in 2019), droughts and floods, sea-level rise, deforestation, as well as volcanic (Mount Khartala in the main island of Grande Comore) and seismic activities. The review of the existing Electricity Code (Output 1.2.) and the eligibility of other sites in addition to the project's pilot sites (Output 1.3) will encompass climate risks and relevant mitigation aspects. The feasibility and subsequently the design and operationalization of the minigrids in the 3 pilot sites (Output 2.1.) of the project will include existing and potential climate risks of each of them (e.g., optimizing the location of the minigrid, securing the generation, transmission and distribution systems, etc.). The introduction and scaling-up of renewable energy generation systems is an impactful and sustainable way to reduce GHG emissions. The focus on productive use, e.g., agricultural and fishery produce conservation and processing, will contribute to increase the resilience of targeted communities. Training of targeted stakeholders (institutional staff, developers, communities, financial institutions staff) as well as national campaigns (Output 4.3) and AMP Communities of Practice will encompass climate change, risks and mitigation measures, both for mitigation and adaptation. In addition, ongoing efforts at government and national levels, including Natural Disaster Risk Reduction programmes and activities, revised Nationally Determined Contribution (NDC) including a future MRV system, are and will be supporting measures to reduce the impact of climate change on the archipelago and its population.

[9] ESMAP Statistic, visited on December 29,2020 https://trackingsdg7.esmap.org/country/comoros

Table 2 – Changes to the project based on baseline assessments

Outputs with GEF budget at Concept Note		Outputs with GEF budget at CEO ER		Change	Justification
1.1 A minigrid regulatory framework including tariff model, tax regime and incentives is developed in close coordination with other development partners	*$ 262,975*	*1.1. An inclusive national dialogue to identify minigrid delivery models is facilitated, clarifying priority interventions for an integrated approach to off-grid electrification*	*$ 345,432*	Adding a national dialogue platform	As Comoros is a nascent market in terms of renewable mini-grids, involving all stakeholders via a national dialogue platform from the very beginning is key. Adoption and scale-up would be better supported and even accelerated. The existing but inactive Energy Task Force developed as part of the IOC's Energy Project will be used as a basis and adapted with clear ToR and objectives, as well as leveraging best practices in Senegal (South-South Cooperation) and lessons learnt from such platforms. Relevant stakeholders (incl. government, public sector, private sector, communities, OSCs, technical and financial partners, etc.) will be members of the platform and meet on a regular basis. Sub-committees will take care of clearly defined topics and objectives. A particular focus will be put on developing a suitable national delivery model. At project launch, terms of reference stating the scope, activities, results, members, prerequisites, by-laws and financing aspects will be developed/adapted
1.2 Assessment of negative impact of competing fossil-fuel subsidies on competitiveness of minigrids, and recommendations for subsidy reform		*1.2. A review of the political and regulatory frameworks on the possible minigrid delivery models and suitable incentives is proposed in close collaboration with the National Dialogue Platform members and other development partners*		Assessment of negative impact of fossil-fuel subsidies is added to output 1.4. as part of relevant studies to be conducted to facilitate development and up-scaling of a minigrids market in Comoros	Focus will be put on clearly translating the suitable minigrid delivery model into the political and regulatory frameworks (further clarifying it in Article 19 of Comoros' Electricity Code) as well as supporting cost-reduction efforts of equipment through existing but not sufficient and not properly enforced tax exemptions.
1.3 Institutional set-up for rural electrification assessed and supported, and institutional capacity building provided on technical, managerial, and regulatory issues		*1.3. Templates of tender documents and contracts for the implementation and operation of minigrids (between community and private operator) are prepared*		Focus put more on institutional capacity-building rather than set-up (Output 1.7.)	As a nascent market especially, it is critical to elaborate suitable tender documents and contracts – homogenized. They are made available on the national minigrids data management platform (see Output 4.2.)
1.4. Minigrid DREI techno-economic analyses carried out to propose most cost-effective basked of policy and financial derisking instruments		*1.4. Geospatial, techno-economic modelling of least-cost off-grid renewable electricity technologies (mini-grids, grid expansion, solar home systems)*		Changed to output 1.5.. Adding other key studies to facilitate the development and scaling-up of the national minigrids market in Comoros	To ensure a suitable scale-up of pilot projects supported by the project while having all relevant data and capacities, other studies will be undertaken including a geospatial (GIS) analysis to identify communities eligible for isolated minigrid implementation at national level, a national grid analysis to identify potential for interconnected minigrid application, as well as a minigrid tariffication analysis and an assessment of the impact of fossil-fuels subsidies on tariffs and viabilities of innovative minigrid business models.

Outputs with GEF budget at Concept Note		Outputs with GEF budget at CEO ER		Change	Justification
1.5. Capacity building provided to public officials (regulator, ministries) specifically to design procurement tender processes that incorporate cost-reduction levers and innovative business models		*1.5. Mini-grid DREI techno-economic analyses carried out to propose most cost-effective basket of policy and financial de-risking instruments and contribute to AMP Flagship Report on Cost Reduction*		Output 1.5. moved to 1.7. Previous Output 1.4 on DREI analyses moved to 1.5.	
n.a.		*1.6. Pre-feasibility studies conducted for selected mini-grid sites to enhance sector planning and decision-making on a delivery model for minigrid development*		Additional output on pre-feasibility studies – taken out from an activity under Output 2.2. on pilot sites.	Pre-feasibility studies of the pilot sites along with the environmental and social impact study are critical to support the development (Output 1.1.) and integration in the policy and regulatory framework (output 1.2.) of a national delivery model in Comoros. It is also a prerequisite for electrification planning at rural and national level hence incorporated in Component 1 on Policy & Regulation.
		1.7. Institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, are strengthened		Initial Output 1.3. focusing more on capacity building efforts	During PPG, the need for institutional capacity building around minigrids. (in every aspect) has been raised at inception and validation workshops,
		1.8. Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labor market in minigrids facilitated		Additional output on public programmes around minigrids	The limited competencies at national level on minigrids represent a hurdle for the minigrid market development. National programmes, with a modular approach and at different levels to cover specific needs, will be facilitated, based on the existing local offer, the AMP regional e-training platform, South-South collaboration (for instance the one existing with the University of La Réunion), etc.
2.1. National report on opportunities to boost economic activities through electricity access and productive use, with focus on minigrids	*$589,439*	*2.1. Opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, are identified and innovation is promoted*	*$799,060*	Wording change	In addition to the national report on opportunities to boost economic activities through electricity access and productive use, with focus on minigrids (including the 3 pilot sites of Output 2.2.), innovation should be further promoted hand in hand with targeted stakeholders via an innovation contest
2.2. Renewable energy off-grid production sites with a least-cost high-efficiency management systems are developed in rural areas		*2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids*		Output 2.3 in the PIF became Output 2.2. (and slight rewording) Output 2.2. in the PIF redundant with 2.3	Redundant – merged More funding allocated to pilot projects as key for the development of a nascent minigrid market in Comoros, as well as to prove its value proposition and enabling the potential of scaling up to be unleashed

Outputs with GEF budget at Concept Note		Outputs with GEF budget at CEO ER		Change	Justification
2.3. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, using innovative business models and cost reduction levers		*2.3. Capacities of private minigrid developers and communities are strengthened*		Output 2.3 in the PIF became Output 2.2. (and slight rewording) Part of Output 2.5. in the PIF is included in Output 2.3. in the ProDoc	Capacities of local private minigrid developers (winning tender bidders are not) as well as communities, sole requesters and owners of minigrids by law, will be build and/or reinforced. A modular approach based on knowledge level, needs and capacities required will be put in place for better results, adoption and application.
2.4. New public-private partnerships in renewable energy sector are established		*2.4. Group of Private Sector RE Services Providers is formalized, operational and its capacities are strengthened*		Output 2.4. in the PIF no longer in ProDoc as included in Output 2.2	According to Comoros' Electricity Code (and its review (Output 1.2.), a collaboration exists between a minigrid requesting community and the MoEIE as well as between a community and a private sector developer and/or operator (contract). Hence, such partnerships are an integral part of the pilot sites under Output 1.2.
2.5. Capacity of winning tender bidders (private sector developers) strengthened to develop and implement innovative business models and cost reduction levers		*n.a.*		Part of Output 2.5. in the PIF is included in Output 2.3. in the ProDoc	
3.1. Innovative financing solutions for minigrid development are identifies and implemented	*$178,575*	*3.1. The design and operations of a Minigrid Funding Facility under the Electricity Code is supported*	*$93,856*	Output 3.1. in the PIF became Output 3.2. (and slight rewording as included in the MFF)	In order to facilitate the minigrids' market development in Comoros and because communities are the owners of the minigrids, it seems critical to develop an MFF. The AMP Comoros project could support the design and operationalization of the MFF, (Output 2.2). Additional financing and funding mechanisms through other projects and investors should be sought.
3.2. General market intelligence study on minigrids prepared and disseminated amongst public officials and finance community		*3.2. General market intelligence study on minigrids prepared and disseminated amongst public officials and finance community*		n.a.	
3.3. Facilitate in-country discussions and convene finance development institutions and philanthropic organizations to attract additional financing		*3.4. Capacities of the national financial sector (including philanthropic) in terms of business models and innovative financial solutions (including digital) in connection with minigrids are strengthened and facilitate access to financing*		Focus on capacity building and better understanding of the minigrid sector and its opportunities for the financial sector.	Minigrids are rather new in Comoros including also for the finance and investment community and / interested in Comoros. Thus, to stimulate and facilitate additional financing towards minigrids, it is critical to build the capacities of these players (incl. derisking efforts – DREI study – Output 1.4.)
4.1. Lessons learned captured and disseminated at the national level	*$ 141.432*	*4.1. A Digital Strategy is developed and implemented, including linkages to and*	*$279,620*	Output 4.1. in the PIF is included in Output 4.7. in the ProDoc	Lessons learned are included in the awareness raising campaigns at all levels and will be shared at AMP regional level. The importance of digitalization for minigrid development and the 'digital opportunity' as it relates to minigrid cost reduction have been acknowledged

Outputs with GEF budget at Concept Note	Outputs with GEF budget at CEO ER	Change	Justification
	following guidance from the regional project	Importance of digitalization for minigrid development and scaling-up	since the PIF. This digital platform will provide key functionality in terms of acting as the (i) national digital convening platform for key minigrid stakeholders (public/private), (ii) providing ongoing data gathering and M&E on minigrids, including linking to the AMP regional project and (iii) acting as the mechanism for tenders for minigrid developers/sites. During the PPG phase, identifying and gathering data and studies around energy, renewable energy, GIS mapping etc. at national level has shown to be a real challenge. While access to relevant data and analyses for targeted stakeholders is key, and even critical. Linkages with and guidance from the regional AMP project will support this effort.
4.2. Replication plan (incl. investment plan) for scaling up rural energy access developed	*4.2. Minigrids data management platform implemented to run tenders and manage data from pilots, and to support minigrids scale-up and cost-reduction*	Output 4.2. in the PIF is moved to Output 4.8. in the ProDoc	In line with 4.1. as well as with the entire project's components, a minigrids data management platform suitable to Comoros' needs will be implemented. It shall facilitate the tendering process from A to Z, monitoring of pilot sites and other indicators, cost optimization. It shall also act as a repository of all relevant data, studies, reports and more around minigrids at national level.
4.3. Knowledge network / Community of Practice established to promote minigrids development/ rural energy access	*4.3. A Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of all minigrids pilots supported, including GHG emission reductions, is adopted and operationalized based on standardized guidance from the regional project*	Output 4.3. in the PIF is integrated in Output 4.5. in the ProDoc as part of the engagement of AMP Comoros national child project with AMP regional project and other national child projects Output 4.4. in the PIF is moved to Output 4.3. in the ProDoc	n.a.
4.4. Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of minigrids, including GHG emission reductions is developed and operationalized	*4.4. Monitoring and Evaluation (M&E) and Reporting, including (i) Conducting Inception workshop and preparing report, (ii) Ongoing M&E, (iii) Mid-Term Evaluation and (iv) Terminal Evaluation*	Added	A dedicated output on monitoring & evaluation has been added to comply with GEF and UNDP processes and facilitate potential corrective measures to achieve the expected project's results
	4.5. Engage with regional project, including, but not limited to, via (i) participating in Communities of Practice and		As regional AMP will develop various AMP Communities of Practice to share knowledge and know-how, targeted national stakeholders will integrate some of them. Lessons learnt are part of knowledge sharing efforts too.

Outputs with GEF budget at Concept Note	Outputs with GEF budget at CEO ER	Change	Justification
	(ii) capturing and sharing lessons learnt		
n.a.	*4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels*		A national Community of Practice with relevant stakeholders will interact among each other, as well as with other AMP Communities of Practice, among SIDS (RMI project, IRENA Lighthouse, etc.), as well as at continental and international levels. This will support Comoros to leverage lessons learnt and best practices (possibly to even leapfrog), as well as share its own experiences and feedbacks.
n.a.	*4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project*	Added	To support visibility, adoption and minigrid market development and scale-up, targeted awareness raising campaigns at national, and AMP regional levels will be designed and rolled out. This will include climate change risks and mitigation efforts.
n.a.	*4.8. Replication plan (including investment plan) for scaling up rural energy access developed*	Output 4.2. in the PIF is moved to Output 4.8. in the ProDoc	
GEF Core Indicator 6 - Greenhouse gas emissions mitigated		Direct GHG emissions from 8,200 to 11,951 tCO2e Indirect GHG emissions from 10,000 to 9,000 tCO2e	While at PIF stage, general assumptions were made; during PPG phase, 3 pilot sites were pre-selected and validated by stakeholders. A demand survey has been undertaken in each of the 3 sites enabling to calculate this indicator based on the surveys' results. In addition a comprehensive methodology for the GHG emission reduction potential has been elaborated and detailed in Annex S.
GEF Core Indicator 6.4 - Increase in installed solar PV capacity (MW) and battery storage (MWh)		Installed PV capacity from 0.18 to 0.449 MW Installed battery storage no specified at PIF to 1.137 MWh at PPG	While at PIF stage, general assumptions were made; during PPG phase, 3 pilot sites were pre-selected and validated by stakeholders. A demand survey has been undertaken in each of the 3 sites enabling to calculate these indicators based on the surveys' results.
GEF Core Indicator 11 – Number of beneficiaries benefitting from energy access via minigrids, disaggregated by gender and by customer segment		32,126 to 3,042	While at PIF stage, general assumptions were made; during PPG phase, 3 pilot sites were pre-selected and validated by stakeholders. A demand survey has been undertaken in each of the 3 sites enabling to calculate these indicators based on the surveys' results. The reason for the decrease in indicator 11 (number of direct beneficiaries) is that at CEO ER stage, the number of connections per kW of installed Solar PV capacity has been revised downwards. At PIF stage, it was assumed that a 30 kWp Solar PV minigrid could serve 6,000 people (1,200 household connections); that is, an average of 40 residential connections per kW of installed Solar PV capacity. At CEO ER stage, a system configuration has been estimated to serve an indicative market that includes residential, social, and commercial/PUE users. Based on the system sizing formulas used, instead of

Outputs with GEF budget at Concept Note	Outputs with GEF budget at CEO ER	Change	Justification
			40 connections, a total of 2.19, 1.63 and 1.15 connections can be served per kW of installed Solar PV capacity in pilots 1, 2 and 3 respectively.

Component 1 – Policy and Regulation

Component 1 focuses on creating a conducive environment for private sector participation and engagement in facilitating access to renewable and reliable electricity in rural areas in Comoros, which is closely linked to defining suitable minigrid delivery model(s) nationwide (**Erreur ! Source du renvoi introuvable.** below). It aims at de-risking specific barriers, as depicted in II - Development Challenge and in the paragraph below on Risks, especially related to energy market, social acceptance, hardware, digital, labor, developer, end-user credit, currency and sovereign risks as defined in the DREI Minigrid Derisking Methodology developed by UNDP.

The baseline assessment (including at inception workshop and further) showcased inadequate policy, regulatory and institutional framework to facilitate the uptake of solar and hybrid minigrids across the country, and in rural areas in particular. This includes favoring electrification via public grid extension, granting SONELEC with the monopoly of electricity transmission and distribution, and no liberalization towards the private sector except via communities as stated above. Quality standards around solar systems and ancillary equipment should be implemented and tested through a potential support of SACREEE's EELA project, including adapting national standards to regional and international norms.

Box 3 Current Status of Minigrid Delivery Models in Comoros

As the market in Comoros not yet very developed, key aspects of the mini-grid delivery models are still undefined and need to be evaluated. The Table below provides a summary of the current status of key aspects of minigrid delivery models in Comoros.

Current status of minigrid delivery models in Comoros

Aspect	Current Status
Ownership and Operation	The government is willing to keep the ownership of minigrids to communities requesting their own power solutions or to the national power utilities SONELEC. The private sector can be contracted by communities to operate the minigrid.
Tariff mechanisms	Tariff applied at isolated minigrids owned by communities do not have to comply with the national uniform electricity tariff. A study on isolated minigrids tariff will be conducted under Component 1 and should support the definition of acceptable and affordable tariffs. As the national uniform tariff is rather high (≈USD 0.29/kWh), isolated minigrids tariff could remain competitive without any tariff subsidy.
Subsidy mechanisms	Support in terms of CAPEX could be supported by other technical and financial partners as well as the diaspora. The GoC is not in the capacity to directly support the investments but envisages to create an Energy Fund which could support CAPEX and potentially also OPEX of minigrids *(Assises de l'Énergie -2019).*
Regulations	The DGEME is ready to adapt Article 19 of the Electricity Code (and more) to clearly define the delivery model applicable in the country (See Output 1.2.).

The possible options for each aspect need to be thoroughly understood by stakeholders and substantiated with real examples. The decisions for/against certain options must be openly discussed and weighed up in terms of the interplay between the aspects and the resulting consequences for the sector. These decisions are often influenced by the historical and cultural background on the one hand, and by the current political and economic situation of a country on the other.

To this end, one of the first activities envisaged in the project is to get all relevant stakeholders on board and initiate a process of national dialogue to weigh up all aspects of mini-grid delivery models (Output 1.1.) with the aim of defining one or several sector-wide delivery models. The project's pilots will also explore delivery models by testing different level of operations management by the private sector, potentially different tariffs (including per service instead of kWh), with a modular approach on installed minigrid capacity units and hence CAPEX support level. This can further contribute to the development of the regulatory framework.

Adapted policy and regulatory framework related to suitable delivery model(s) will create the necessary conditions and confidence for private sector (as well as communities) to invest in and commit to minigrids in rural Comoros. During PPG, discussions with DGEME and the national power utilities SONELEC have been undertaken to ensure that isolated minigrids are part of the national (rural) electrification efforts. Identified pilot projects (Component 2) have been thoroughly selected based on objective selection criteria. One of the main and eliminatory criteria is that the site is not part of the grid expansion or improvement strategy.

Output 1.1. An inclusive national dialogue to identify minigrid delivery models is facilitated, clarifying priority interventions for an integrated approach to off-grid electrification

The national platform is envisaged to be a discussion forum and coordination mechanism addressing rural electrification, clean energy and minigrids among all relevant stakeholders – government/public sector, communities and OSCs, private sector, technical and financial partners, etc. Especially in an early-stage or nascent market such a multi-stakeholder platform is key to achieve consensus on a given minigrid vision and related delivery model across the country. This encompasses:

- the buy-in from all national stakeholders including the government
- identifying a clear need and space for minigrids in the country's electrification
- developing a shared vision for minigrids electrification and related suitable delivery model
- the need to determine clear private sector roles and responsibilities along with communities, as well as suitable business models as early as possible
- determining and enforcing measures to mitigate minigrids risks including including discontinue of services due to financial or physical impacts, disposal of batteries and other wastes, and adapting to change of demand of electricity

Activity 1.1.1. Support the set-up and operationalization of the National Dialogue Platform

At PPG phase, the existence of a working group on energy – called Energy Task Force – has been identified. This task force needs to be revitalized and adapted to become more impactful, sustainable and complying with the objectives of the AMP project. At project launch, terms of reference of the National Dialogue Platform will be developed, including the activities, expected outcomes, membership, operations, communication and budget.

All relevant stakeholders will be part of the platform, including Government of the Comoros, local authorities, civil society and communities, private sector, technical and financial partners, local media. Representatives of the minigrids implemented under Component 2 should be represented (and added once determined). A special focus will be put on ensuring the usefulness and sustainability (especially post-project).

The Platform will enable to design solutions together for all 4 components of the project (and further). This will include topics such as a suitable minigrid delivery model, procurement approach, adapted policy, regulatory and institutional frameworks, related business models with private sector involvement, innovative financing, knowledge sharing, monitoring, etc.

The National Dialogue Platform will be located under the administrative leadership of the Energy Department. The platform will be supported by the project as well as other baseline projects identified focusing on access to energy (inc. World Bank and AfDB). The project management unit (PMU) established under the DGEME/ Energy Department will initially act as the secretariat of the proposed platform. As decided by the stakeholders during the validation workshop, the national platform will be added to the project management set-up. Staff from the DGEME and other members of the platform will be selected to further support it on a regular basis in order to mainstream its functions under the DGEME upon project completion (sustainability). Sub-committees could be envisaged to work on specific topics. One of them will support the evaluation of the Call for Projects for pilot projects under Component 2.

Efforts will be made to use gender mainstreaming as well as integrating socio-environmental aspects on all topics and solutions discussed in the National Dialogue Platform framework.

Output 1.2. A review of the political and regulatory frameworks on the possible minigrid delivery models and suitable incentives is proposed in close collaboration with the National Dialogue Platform members and other development partners

Activity 1.2.1. Ensure that minigrid regulation paragraphs in the Electricity Code are in coherence with the EnR code

Under the Electricity Code (Law # 94-36 of December 21st, 1994) Chapter 4 on Rural Electrification - Article 19, the principle of creating isolated grids/minigrids in Comoros for all rural communities willing to do so is allowed. An approval of the Ministry in charge of Energy based on the project proposal and cost is a pre-requisite. An inter-connection with SONELEC's national grid can be envisaged with the technical approval of SONELEC. Article 20 depicts the financing conditions that could be put in place for an autonomous grid in rural areas (with SONELEC and a Special fund – that does not exist yet – and could be the Minigrid Facility Fund as depicted in Component 3 of the project).

While there are some indications on minigrids in rural areas, a clear framework, delivery model and related business models, financing schemes and tariffs, including with private sector role and involvement, would be helpful to support the uptake of the minigrid market in Comoros. This should encompass Generation – Distribution – Sales of the minigrid and specify further content. A review of these articles within the Electricity Code is envisaged after discussion with the MoEIE and other relevant departments complying with the ongoing efforts in terms of reforms and governance at Government level (with the General National Planning Commission – Commissariat Général au Plan) with the support of AfDB, World Bank and UNDP (incl. a Power Sector Master Plan, the country's first grid code, Renewable Energy Law reform, and the adoption of standard power purchase agreements). In addition, minigrid risk and mitigations measures identified through the DREI analysis (see Output 1.5) should be included (to a certain extent) into the revision of the Electricity Code and any other relevant strategy. Plans and provisions related to electricity service discontinuity due to financial or physical impacts, disposal of batteries and other wastes, and adapting to electricity demand evolutions should be considered.

For instance, the AMP project will coordinate with the UNDP/GEF ISLAND Comoros child project, which objective is to prevent the accumulation of materials and chemicals containing POPs, mercury and other harmful chemicals in the environment of Comoros, and also to manage and eliminate existing harmful chemical products and materials in the Union of Comoros. The project aims to directly benefit 256,418 people (127,230 women + 129,188 men), reduce / eliminate / prevent and/or avoid 52 tons of chemicals of global concern and their wastes (~130 tons/year of car batteries are imported into Comoros, and 23 tons are collected/exported). Synergies between the two projects will be developed to include sound management of solar batteries and converters in recycling mechanisms that will be put in place within the national waste management system. The UNDP/GEF ISLAND project will specifically concentrate on the efficient management of waste and chemicals generated daily in the Union of Comoros, including necessary legal and regulatory texts (based on the Minamata and the Stockholm Conventions), as well as economic and financial instruments that will allow system operation. The system will promote the development, operation and monitoring of PPPs for waste collection and disposal and the Increase of the capacity of entities (private sector / NGOs) operating in the field of waste management. The project will set an enabling environment to foster the establishment of a business incubator partnership with support structures to support the creation, training, and financing of SMEs in the field of waste management, recycling (in country and abroad) and/or export in the long term, with the ultimate objective of creating jobs and business opportunities in this sector. In addition to that, the ISLAND project will Establish a regional private sector partnership for export/recycling/processing abroad of recyclables/hazardous waste (in collaboration with the regional component of the project).

The drafting of the articles 19 and 20 of the Electricity Code will be done under the impulse of DGEME along with members of the National Dialogue Platform to ensure that all stakeholders' voices and needs are taken into account. A dedicated sub-committee of the platform, including the MoEIE and SONELEC, will concretely draft these paragraphs and present them to the Platform for discussion, adaptation and validation, before submission to the Government. Climate risks and mitigation efforts shall be considered.

Until the adaptation and adoption of the revised Electricity Code, a "regulation by contract" will be enforced. The Contract Template to be developed under Activity 1.3.2 could as such cover all aspects relevant to the minigrids'

operations by private entities (legal status, tariffs, standards, etc.) and compliant to the existing legal framework. The template would then be filled in to each individual minigrid project.

Activity 1.2.2. Adapt and enforce customs procedures and import requirements, and strengthen capacities of public officials to implement and enforce simplified import process

While some tax exemptions for some renewable energy equipment (including solar) have been made under the Joint Order #02-0/VP-MPEEIA/CAB and #12-088/VP-MFEBICEW/Cap of 19 September 2012, they do not include all equipment and are not properly enforced. Inverters are for instance in practice often charged with customs taxes. An assessment of existing import procedures and taxation/duty rules for mini-grid components in Comoros will be conducted. For this purpose, a comprehensive list of relevant minigrid-related equipment, in cooperation with minigrids developers, will be developed and compared with the relevant law. The enforcement of such procedures and rules will also be carefully analyzed both with law enforcers and importers, including local energy services providers. A benchmark of existing practices (incl. best practices and lessons learnt) in AMP countries and in the SADC and Indian Ocean regions will be carried out. Potential gaps will be identified. The report will be shared and presented to relevant ministries and authorities (including MoEIE, Customs Department).

A support to relevant ministries and authorities will be provided and include, depending on the assessment findings, the following: the drafting of proposals for change, calculation and assessment of macroeconomic effects, the drafting of new text in the relevant law or regulation, as well as means to ensure suitable enforcement of the new text. The improvement proposed will comply with official administrative procedures prevailing in Comoros.

It is worth mentioning that quality standards for RE equipment in general and solar mini-grid components should be taken care by two different initiatives: one by SACREEE (ongoing for solar PV panels and solar lighting) and one by Comorsol – World Bank (to be initiated later in 2021). AMP will ensure to be involved and integrated, via DGEME, in those two processes.

Output 1.3. Templates of tender documents and contracts for the implementation and operation of minigrids (between community and private operator) are prepared

Activity 1.3.1. Develop a procedure and templates for tenders on minigrids

The procurement approach retained will be a solicited approach under which the government selects clusters of communities and launches a tender for project implementation and operation by private sector firms – either in two contracts (EPC and operation) or combined. A clear procedure will be developed, and relevant tendering templates will be elaborated. (Relevant training at the DGEME as part of the PCAT measures to mitigate risk are included in Output 1.5.)

As indicated in Component 2, after a demand and capacity study in each of the sites (covered by the project) as well as awareness raising efforts targeting the communities, a Call for Proposal for combined EPC and operation will be designed and initiated targeting private sector operators.

The tendering procedure and templates will be made available on the Project's Digital Platform (see Output 4.2.).

Activity 1.3.2. Prepare contract templates for minigrid implementation and operation

Today, there is no clear contract type for autonomous minigrids in rural areas in the Comoros while standard contract templates between a community and its minigrid private sector operator would:

- guaranty a clear framework, and roles and responsibilities of each of the two parties, the requesting community and the private operator. This should also include some risk mitigation clauses including related to service discontinuity, maintenance, disposal of batteries and other wastes, as well as adating to electricity demand changes
- facilitate the evaluation and approval of the Government towards the future autonomous minigrid

The contract should also include an article on negotiated tariffs for the given isolated minigrid between the community and the private sector operator. Cost-reflective tariffs will be favored in such a setting, while ensuring a tradeoff with affordable pricing on the demand side (end-users). As mentioned above, the national uniform electricity tariff is not applicable to isolated minigrids. Climate change, environmental and social safeguards as well

as gender aspects will be taken into account. The contract should also encompass clauses and plans supporting the mitigation of specific risks. This should include:

- preventing from discontinuity of services due to financial or physical impacts
- disposal of batteries and other wastes
- adapting to electricity deman evolution (i.e., number of customers or increase in demand)

A tripartite contract (community – private sector – SONELEC), in places where the national grid exists, could be envisaged whereby SONELEC would provide some services: connection, use of their existing grid, etc.

Output 1.4. Geospatial, techno-economic modelling of least-cost off-grid renewable electricity technologies (mini-grids, grid expansion, solar home systems)

Activity 1.4.1. Conduct a geospatial (GIS) analysis to identify communities eligible for isolated minigrid implementation (in addition to pilot sites selected in Component 2)

A geospatial analysis of the archipelago is useful to evaluate:

- on the supply side: the most cost-effective electricity option in rural areas (extension of the grid, minigrids, stand-alone systems). Techno-economic competitiveness of each option is calculated, mainly based on the levelized cost of energy (LCOE) of each solution/technology. Climate risks and measures to mitigate them will be included in the analysis.
- on the demand side: the electricity needs of end-users (households and productive use – commercial and public services) considering demographic, social and economic aspects.

A simple non-exhaustive GIS analysis has been undertaken by consulting company Tractabel as part of another project. However, this is not sufficient to be able to clearly identify communities eligible for isolated minigrid implementation but will be leveraged upon.

Activity 1.4.2. Conduct a national grid analysis to identify potential for interconnected minigrid application

Given the high electrification rate in Comoros, the recent and upcoming interconnection of solar plants of an average of 3MW in each of the three islands (two of which are private-led by Innovent and VIGOR) and some past experience of SONELEC taking over functioning community-led minigrids, a study on the potential of minigrid interconnection to the national grid makes total sense. Such a study shall include technical, organizational, economic, market-related and environmental considerations. The GIS analysis under activity 1.4.2 will be used for this study. Electrification planning through distributed generation and microgrid modeling software[10], especially rural electrification, is key here.

Activity 1.4.3. Conduct a minigrid tariffication analysis

While a tariffication study for the national grid has been undertaken by the PASEC project (AfDB), during PPG phase, the lack of competencies in terms of minigrids and related tariffs has been put forward including at Ministry level. The minigrid tariffication study aims at supporting a better understanding and a robust negotiation foundation on tariffs for all relevant stakeholders (communities, private sector developers/operators, Government, etc.).

Activity 1.4.4. Conduct an assessment of negative impact of competing fossil-fuel and main-grid utility subsidies on competitiveness of minigrids

In Comoros most of the energy production remains thermal diesel based and a national uniform tariff for the grid is applied whereby imported fossil-fuels are highly subsidized. While the national uniform tariff is not applicable to isolated power generation systems, the impact of the main-grid utility subsidies on competitiveness of minigrids exists. It is worth mentioning that the national uniform tariff of USD 0.29/kWh enables minigrids to remain competitive especially when CAPEX costs are not considered.

It is worth mentioning that this project does not intend to invest in any diesel generators.

[10] such as HOMER Pro (Hybrid Optimization of Multiple Energy Resources) or others

Output 1.5. Mini-grid DREI techno-economic analyses carried out to propose most cost-effective basket of policy and financial de-risking instruments and contribute to AMP Flagship Report on Cost Reduction

Activity 1.5.1. Conduct initial, full quantitative national DREI analysis

A full quantitative DREI application will be conducted in the first year of project implementation. The PMU will assemble a task team to perform the national DREI analysis including consultants (international, national), government stakeholders, and members of PMU. Deliverables will include interviews, completed financial models, and national reports/knowledge products. This national analysis will be funded by the national project. The AMP Regional Project can in turn provide various support on DREI to the national project: including finalizing TORs for the country-level, recommendations (in the form of a vetted roster of consultants) on international consultants that are trained on DREI already, as well as resources and tools (Excel models etc.) to conduct the DREI analysis. Results from the full quantitative national DREI analysis will be shared with the regional project to feed into a regional flagship AMP knowledge product, across all AMP countries, on DREI and lowering mini-grid costs. This regional AMP knowledge product will be funded by the regional project. Risks assessment and mitigation measures will be integrated in the relevant outputs of Component 1.

Activity 1.5.2. Disseminate DREI analysis and adaptive management

In the first half of Year 2, the project will disseminate the national DREI analysis and, in the second half of Year 2, the flagship DREI regional knowledge product (south-south learning) through dissemination activities at the national level. Together, these dissemination activities will encompass 3 or 4 round-table workshops with government, private sector and other key stakeholders, over a 12-month period. Along-side these dissemination activities, the PMU will utilize the findings of the national DREI analysis to inform any adaptive management of the national project's outputs/activities, to address identified needs for public measures arising from the national DREI analysis. These activities will be funded by the national project.

Activity 1.5.3. Coordinate with regional project on national DREI analysis update

In the final year, or year 4, of the national project's implementation period, whichever happens first, the original national-level DREI analyses will be refreshed to track evolutions in financing costs as well as in hardware and soft costs. For administrative efficiency, the regional project will fund and execute this update (a 'light quantitative DREI analysis'), on behalf of the national project. The deliverable will be a brief note of 2-5 pages on the DREI national update. The data from the national refreshed DREI analysis will be fed into an update note to the year 2 flagship regional DREI knowledge product, which will provide an end-of-program overview of the evolution in mini-grid costs across AMP countries. The national project's contribution to this activity will be : facilitating the DREI national update (to be executed by the regional project); disseminating the findings of the national DREI update note, and the update to the regional flagship DREI product.

Output 1.6. Pre-feasibility studies conducted for selected mini-grid sites to enhance sector planning and decision-making on a delivery model for minigrid development

Activity 1.6.1. Conduct preliminary feasibility studies for pilot sites (demand forecast, minigrid sizing, providers mapping) incl. an environmental and social impact study

For each of the pilot sites (Component 2), a feasibility study will be carried out and covered by project funds to objectively assess the potential viability of the solution as well as significantly reduce costs for the developer as well as of the end-user tariff. This will include a thorough analysis of the demand (based on the demand profile study undertaken at PPG phase in each of the 3 sites), its forecast and potential stimulation and aggregation of loads. Energy demand includes households as well as commercial players (artisans, food processors, etc.) and public services (health centers, schools), as well as anchor customers i.e., players who are financially sound and guaranteeing electricity purchase such as telecom towers etc. The accurate prediction of the demand combined with the potential supply to be provided, as well as the acceptable tariff for end-users, will support the correct sizing and financial viability of the future minigrid business models. A mapping of rural commercial and social players using or willing to use energy (e.g., providers of education, health, agriculture as well as various associations and groups incl. youth and women) will be undertaken on each pilot site. Existing and potential risks and ways to mitigate them to optimize the sustainable impact of renewable minigrid solutions will be considered.

An environmental and social impact study for all of the 3 pilot sites combined will also be undertaken and added to the pre-feasibility studies package.

Communities as well as local authorities and any other relevant partner in each of the sites will be highly involved in these studies.

In addition, a directory of existing and aspiring local commercial minigrid actors, local vendors of solar and solar ancillary equipment, applicable taxes and importation considerations, will be created to facilitate the work of minigrid developers as well as the evaluators (incl. DGEME), the communities and contribute to the viability of the minigrid solution.

All pre-feasibility studies and the environment and social impact study will be shared on the digital platform (see components 2 and 4) and be part of the Call for Projects for each pilot site (see Output 2.2.).

Output 1.7. Institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, are strengthened

Activity 1.7.1. Analyze the knowledge gaps related to minigrids

Knowledge disparity among government decision makers and agents (Directorate of Energy, MoEIE, regional representations), national utility SONELEC as well as all members of the National dialogue platform is a given and has to be bridged. The needs of each type of players (especially government and national utility) in respect to isolated renewable minigrids will be determined (including climate risks and mitigation efforts). For example, for executives and clerks of the Energy Directorate, a special focus will be put *inter alia* on procurement and tendering processes, as well as tools on determining the "right" tariffs. Gaps will then be evaluated at different levels namely technical, managerial and regulatory.

Activity 1.7.2. Offer comprehensive training materials

Depending on the needs and knowledge level of each targeted training participant, a modular approach will be adopted. Remote training will be offered on the regional AMP learning management platform. Some training materials from different partners (including from existing documentation such as the Green Mini Grid initiative of AfDB, IRENA, SE4All, etc.) will be available, including in French.

In addition, national face-to-face training will be offered to comply with country-specific needs and as physical training is favored in the country. This activity will be undertaken in close relationship with the University of Comoros as well as other Francophone AMP countries including Burkina Faso and Djibouti based on South-South collaboration.

Activity 1.7.3. Conduct Training of Trainers (ToT)

A training of trainers will be provided to both the University of Comoros and the Directorate of Energy to contribute to ownership and sustainability of the various training modules.

Output 1.8. Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labor market in minigrids facilitated

Climate risks and mitigation efforts as well as gender considerations will be included in the activities below.

Activity 1.8.1. Identify minigrid market needs in terms of competencies and jobs

A comprehensive analysis of the needs of the minigrids market to contribute to its scaling up should be conducted. This preliminary study is critical to pave the way for the development of suitable training programmes and modules by academics to the market's needs. Such trainings should integrate a large part of practice and hands-on work to facilitate ownership and direct application of learnings.

Activity 1.8.2. Analyze existing university and higher learning institutions programs and gap analysis

An assessment of the studies portfolio (including modules) around renewable energy and minigrids in particular at the University of Comoros and other high learning institutions across the Comoros is carried out. Potential gaps compared to the market's needs (see 1.6.1) are identified, and recommendations are made. Bridging these gaps include strategic partnerships with the University of La Réunion and targeted higher learning institutions in

Madagascar and Mauritius, leveraging some initial discussions as part of a former COI project on Energy, as well as SACREEE, IRENA's Lighthouse Initiative and RMI's SIDS projects.

The analysis' findings will be introduced and shared to universities and higher learning institutions as an opportunity, as well as to the authorities in charge of providing budgets to these institutes.

Activity 1.8.3. Analyze existing vocational training programs and gap analysis

An assessment of the training portfolio (including modules) around solar PV installation, becoming a rural electrician and other relevant trainings, including at the training center on renewable energy in Mohéli (not operational but ToT provided to targeted staff at SONELEC Mohéli) and by energy service providers for their staff will be conducted. A particular focus will be put on certification aspects and their enforcement as this is key to raise awareness of, and ensure ownership by end-users (residential, commercial and social) of reliable quality cleantech solutions as an alternative, especially minigrids. Gaps compared to the market's needs (see 1.6.1) will be identified, and recommendations drawn. The latter shall include discussions with SACREEE, IRENA's Lighthouse Initiative and RMI's SIDS projects as well as with AMP regional project and national child projects on how they go about for instance with the certification of solar PV and minigrids installers.

The analysis' findings will be introduced and shared to vocational training centers as an opportunity, as well as to the authorities in charge of providing budgets to these institutes.

Activity 1.8.4. Train the trainers of relevant institutions in Comoros

Based on the findings of activities 1.6.3. and 1.6.4., and the support of the targeted training institutions, the project will support some ToT activities of these institutions in collaboration with identified partners (see above).

Component 2: Project and Business Model Innovation with Private Sector Engagement

Given Comoros' electricity, and specifically minigrids', situation, policy and regulatory framework, and being a nascent minigrid market, the project aims at enabling the proof of concept of minigrids with private sector engagement backed by communities in rural areas. Thanks to innovative business models of demonstration pilots, rural communities will gain access to and reliability of power. Lessons learned in other countries have highlighted, especially in SSA and in SIDS, that a minigrid can only become profitable and sustainable when based on productive use and cost-reduction. Such players, be it commercial (for-profit) or social (health centers, schools), are energy intensive during the day where the sun is largely available and represent a relatively stable and significant electricity demand source. The project will support the identification of relevant energy intensive value chains across the archipelago (Output 2.1).

Implementation of the pilot projects will follow a list of clear principles as indicated below and will not invest in any diesel generator.

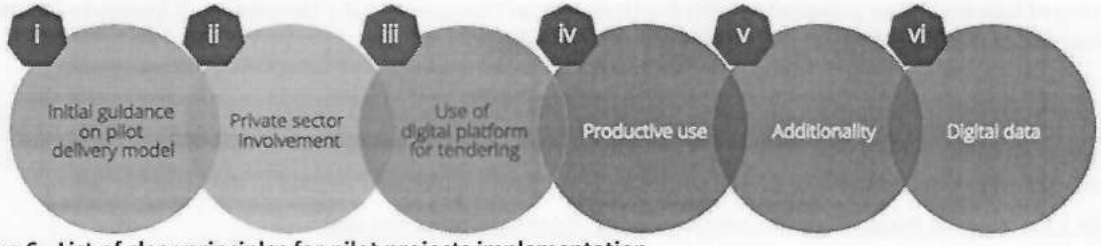


Figure 6 - List of clear principles for pilot projects implementation

i. Pilots' delivery model

It's currently envisaged that pilots will be aligned with the current national delivery model with a pilot assets ownership in the hands of communities, with the development of greenfield minigrids as demonstration projects in a nascent market. It's possible that other delivery models can also be considered during implementation. Combination of minigrids with existing or planned microgrids with alternative RE solutions (biogas and hydro) will be considered. Each pilot project will also consider climate risks and mitigation measures.

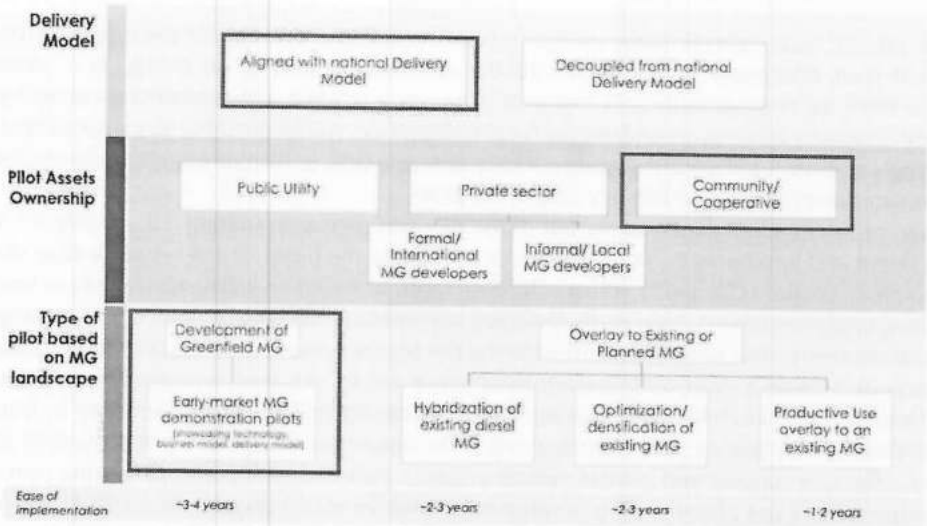


Figure 7- Proposed Community-Based Delivery Model for Pilots

As stated in Component 1, in Comoros, minigrids can currently only be commissioned and owned by a community, with the approval of the government, while contracting a private operator (see Component 1). Hence, it is envisaged that the pilots will follow a delivery model with community-led pilot projects, although other delivery models may also be considered. Pilot asset ownership will lay at community level. The role of the communities is key and consulting the community has been done at PPG through field missions, the demand profile survey and taking part in the validation workshop.

Such models rely not only on ownership of the minigrid by the community but also on an ecosystem approach:

Figure 8- Stakeholders' ecosystem approach for electrification success - Source: RMI

ii. Private sector involvement

The delivery model for pilots will incorporate private sector involvement as a contractor of the communities. Indeed, private sector engagement is conducive to minigrids' sustainability as well as to scaling-up minigrids. This will be on a spectrum from private sector for Engineering, Procurement and Construction (EPC), to private sector for Operations and Maintenance (O&M).

iii. Use of digital platform for tendering

A national digital platform for minigrids will be used for the tendering process of pilot projects ensuring transparence, efficient knowledge management and cost reduction (see Component 1 and Output 2.2.).

iv. Productive use

All pilots will include productive use of energy (business and social). This is at the very heart of the project's theory of change, where the economics of minigrids can improve in a virtuous cycle of higher loads resulting in lower LCOEs. Many pilots will financially support the purchase of productive use equipment (GEF INV). However, the project will only provide its support via a third-party ownership model. This involves that either the community owning the

minigrid or a private sector player (local energy services provider for instance) purchase the productive use equipment, and then effectively leasing it back to the end-user, as part of an energy as a service offer. The involvement of financing institutions (see Component 3) can be a solution. Other examples can be found in Annex 20. Some specific capacity building around energy for productive use will be provided as part of Output 2.3. This will be limited though as focus is put on activities specifically reducing GHG emissions as part of climate finance.

v. Minimum concessionality of GEF INV support to pilots

The final design of the minigrid pilots, as set out in the minigrid pilot plan (output 2.1, activity 2.1.1 below), will ensure the efficient and appropriate use of GEF donor funding to the pilots. It will set out a clear methodological basis, for example to ensure LCOE parity with a reference tariff; or based on willingness/ability to pay (determined by a study during implementation). Such methodological assessments will be part of an overall package of financial due diligence/assessments that will be performed during the tender process to select pilot sites/developers.

The community will provide in-kind contributions itself which will be valuated during implementation phase. This may include land and installation labor, as well as, thanks to capacity building efforts provided by the project, local monitoring and basic maintenance (with technical expertise support of the private sector minigrid operator), and local payment collection support and greater system security. Financial inputs may also come rom diaspora, the private sector (productive use players of the community, KeyMaker model players, etc.), UNDP (via its co-financing grant) and other technical and financial partners.

vi. Digital data

In return for benefiting from GEF INV support as a pilot, the asset owner or operator of the minigrid pilot will be obliged to share digital data from the minigrid's performance with the AMP national project thanks to relevant digital equipment. More details can be found in the Box below.

Box 4 Digital data sharing for mini-grids

Pilot beneficiaries (e.g., minigrid operators) receiving support from the project will be required to share minigrid performance data with the national project.

Specific terms and conditions for data-sharing and how best to operationalize the commitment and its adoption by the beneficiaries will be defined and agreed upon with minigrid operators during project implementation, including details of what data can and cannot be used, based on consultations with industry stakeholders and with support from the AMP Regional Project.

The specifications around the data generation by the demonstration pilots supported by the project will consult and follow guidance/standards provided by the AMP Regional Project. A standardized Quality Assurance and Monitoring Framework (QAMF) for application in all minigrid pilots supported under the project will be developed in year 1 of the regional project and disseminated to all national projects.

A data platform will be procured by the project (under Component 4, Output 4.2) to serve different purposes including: (1) running digital tenders by which minigrid developers will be selected as beneficiaries to receive support under the project and (2) managing all technical and financial data related to minigrid sites.

Through the implementation of this data management platform, minigrid developers selected to implement minigrid pilots with support from the project will have access to a set of best-in-industry tools for analyzing minigrids (e.g., demand forecasting, system optimization, distribution network design, detailed financial modeling at the site and portfolio level). Similarly, as part of the roll-out of the data platform, minigrid developers (as well as key government and other stakeholders) will receive capacity-building and in-depth training to use analytical tools and data management technologies.

For equality and commitment reasons, 1 pilot site per island will be implemented. There are 3 islands in the Comoros archipelago and there are 3 main different types of rural villages with their specific needs and situations. 3 pilot sites have been identified and pre-selected during PPG based on objective criteria (See Evaluation Grid in Annex 18), and validated by the IP, responsible parties and relevant stakeholders at the PPG validation workshop held in January 2021. This pre-selection of sites at PPG phase will not only prevent from any site changes based on subjective criteria and high political turnovers but also enable a more efficient implementation of pilot projects. The selected sites are representative of the different type of villages present across the archipelago e.g., in terms of focused value chains (fishery, agriculture, ecotourism, etc.), geographical settings (coastal, hinterland and mountain) and electricity situation (from no national grid to a hybrid model with grid, biogas and hydro). The selected sites have been

approved by the national utility SONELEC complying with their electrification planning and interests in reducing some pressure exerted on their grid. A demand profile survey in each of the pilot sites has been undertaken in December 2020 to get a better sense of the electricity situation, the electricity consumption, payment habits, trends as well as gender aspects. Main results of the survey can be found in Annex 19. This will be useful for the procurement process of the minigrids which will be undertaken through a Call for Projects. Pre-feasibility studies will be taken care by the project and made available on the digital platform to contribute to a transparent tendering process (Component 1). Potential set-up per site can be found in Annex 20 and will be adapted accordingly during implementation phase (incl. based on pre-feasibility studies).

Output 2.1. Opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, are identified and innovation is promoted

Activity 2.1.1. Conduct an analysis on key national rural economic outputs and their value chains, and social activities

As part of the minigrid market development and scale-up efforts, a mapping of relevant high potential value chains (in economic and social terms) with possible linkages between those and energy use will be focused upon (incl. stakeholder mapping) at national level, including the 3 selected pilot sites (See Output 2.2). The analysis will include optimization opportunities through better energy services (e.g., more reliable and/or affordable) for value chains using energy and more high-touch opportunities to support new initiatives in rural areas.

Activity 2.1.2. Organize an innovation start-up contest around rural electrification through minigrids

With the support of ANADEN (National Agency for Digital Development), the technical university IUT and NGO Girls and Tech, a national contest on innovation along rural development through solar minigrids will be organized. All contestants will be invited to showcase the innovative side of their products, services, business models that can be applied to at least one of the 3 pilot sites (can also be used at national level or more). Businesses related to energy services, value chains fostered by energy such as food production and processing, purchasing, financing, money collection, etc. are welcome to join. Start-ups led by youth and women will be favored to participate to this event. A monetary prize, increased visibility and integration into one or more minigrid sites will be granted for the winner(s).

Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids

Targeted communities have been involved since the project design phase (PPG) and will continue to be a critical part of the pilot project design, implementation, operationalization and sustainability.

Box 5: Pilots and the Project's Environmental Safeguards Management Framework (ESMF)

Pilot minigrids funded by GEF INV are required to comply with all the relevant national standards of the country as well as UNDP standards on social and environmental safeguards, gender equity and stakeholder consultation. In support of this, an Environmental Safeguards Management Framework (ESMF), developed for the program, a gender action plan and stakeholder engagement plan accompany this ProDoc. The ESMF is structured as a program-wide framework that provides guidance that is both generically applicable to all AMP country projects as well as country specific. This guidance will have to be incorporated and considered in developing the environmental and social impact assessments and management plans for pilot minigrids.

A critical consideration under this ESMF is the need to ensure environmentally sound management of replaced equipment, including batteries, inverters and solar panels, after their usage. The responsible handling of waste with recycling of batteries and other recyclable equipment, should be clearly documented, budgeted and monitored in compliance with national and UNDP safeguards requirements.

Activity 2.2.1 Develop a detailed project plan (the project's 'Minigrid Pilot Plan') for advancing the project's minigrid pilot(s).

Building on the initial guidance in this prodoc, the PMU will lead and develop, in close collaboration with other stakeholders and support from the AMP Regional Project, a detailed project plan (the project's 'Minigrid Pilot Plan') for advancing the pilot(s). Once prepared, the project's Minigrid Pilot Plan will first be reviewed for clearance by UNDP (CO and BPPS NCE), and then shared with the Board. This activity should be completed by the end of year 1.

Building on the initial guidance in this prodoc, the project's Minigrid Pilot Plan will finalize, among other aspects, the following:

- Clear objective for the pilot(s)
- The minigrid delivery model(s) which will be demonstrated in the pilot(s). This will ensure full financial sustainability, including O&M, of the minigrid over its asset lifetime.
- The proposed type of pilot(s), which can include: (i) greenfield pilots, including productive use and (ii) productive use overlays, on existing pilots.
- The estimated target number of pilot(s), based on ex-ante estimates of available GEF INV
- Inputs, as necessary, on site selection, including based on geo-spatial mapping, for the pilot(s)
- Site-specific assessments and other requirements (e.g., demand sizing, social and environmental safeguards (SES) assessments, gender assessments, e-waste disposal). Some assessments may be needed to be performed by the project ex-ante, to inform follow-up competitive tenders
- The use of the digital platform for
    - Competitive tendering, as necessary.
    - Ongoing data collection from mini-grid pilot(s), including data-sharing requirements from mini-grid pilot(s) (Box 4, above), as well as digital hardware requirements (Box 6, below)
- The project's approach to ensure minimal concessionality for the level of GEF INV support to the pilot(s) (when there are private sector beneficiaries)
- Review of the IP's modalities for transfer of GEF INV support to the pilot(s), ensuring they are aligned with UNDP's policies and financial rules.
- If a pilot includes GEF INV support for productive use, ensuring the pilot takes a third party ownership model to productive use equipment
- Coordination and rationale on any associated project technical assistance activities which may benefit the minigrid pilot(s)
- Brief summary updates, at the time of drafting the plan, on the status in Comoros of
    - (i) any other solar-battery minigrid pilots (specifications, any results/findings to date), and
    - (ii) examples of minigrid productive use applications (specifications, any results/findings to date)

Box 6: Initial Indicative Specifications for Minigrid Digital Hardware and Software

Indicative minimum requirements and costs references for hardware/software for data-sharing

Offering	Details
Hardware requirements per site	• Inverter monitoring (monitoring & control) • Distribution monitoring • Optional current transformers for energy meter if more than 10 kW (single phase) or 30 kW (three-phase) • 24V power supply (50€) • Various data cables and installation material • Optional: 24V backup battery (50€) • Optional: Cabinet for the complete monitoring system • Industrial internet router • Industrial or high quality Ethernet Switches
Hardware requirements per connection	• Smart meter

Activity 2.2.2 Design of tender process for pilot(s) using a digital platform.

The project's pilot(s) may involve private sector engagement in various forms, including models involving private sector minigrid ownership, private sector EPC, and private sector O&M services. Where there is private sector engagement in the pilot(s), a competitive tender process will be executed using the digital tendering feature of the digital platform procured under Component 4.

The digital platform will have, at a minimum, the following features:

- Complete end-to-end management of e-tenders for mini-grids customized to specific project needs
- Complete data management for financial schemes, including customized technology solutions for claims submissions and independent verification
- Remote verification of connections through smart meter integrations
- Automated M&E analytics for all project/program indicators (connections deployed, amounts paid, gender/environmental impact metrics, etc.

Under this activity, the PMU, working with the digital platform vendor, specialist engineering, financial, procurement, and legal expertise, and the AMP regional project, will translate the approach set out in the project's Minigrid Pilot Plan into the design of a customized tendering process on the digital platform, including requirements, specifications and evaluation criteria. At the end of this activity, the tendering process on the digital platform will be ready to launch. The tender process itself should be launched before the end of Year 2.

This activity may also include capacity building for government personnel with the digital platform, as well as planning for capacity building to be available to private sector developers who will participate in the tender. This could also encompass support in proper dimensioning of the renewable minigrid, minimization of outages and means to manage loads, e.g., via artificial intelligence, machine learning and stochastic optimization.

Activity 2.2.3 Prepare tender on digital platform, conduct contracting and payments to the selected pilot beneficiaries

The tender will be set up using the digital platform to be procured under Component 4, according to the Implementing Partner's procurement policies. The PMU will work with the vendor to set-up and customize the digital platform based on the specific needs of the tender.

The tender – a call for projects for each site - will be launched and run according to the design in activity 2.2.1. It shall target local private sector operators, with a possible collaboration of international developers. Different types of pilots will be tested and implemented as stated above. Evaluation and selection of the submissions will be competitively assessed against evaluation criteria (technical and financial) and will be undertaken by a Project Site sub-committee of the National Dialogue Platform. The process and results will be made transparent and clear on the digital platform.

Contracting and payments will be done with the winners of the tenders. Payments will be made on pre-defined milestones, including on commissioning of plants. The digital platform and relevant collected data will support the validation of the various milestones and of the payments.

The suitable business model and governance will be determined during the tendering and/or contracting phase with the relevant stakeholders incl. the IP, the Project Site Sub-Committee of the National Dialogue Platform, the community and the applicants or winner of the tender.

This activity and activity 2.2.3 will be implemented in collaboration with the National Procurement Directorate and the lawyers from the ministry of water.

Activity 2.2.4 Monitor pilot(s), collect and aggregate data shared by pilot(s)

Data generated by the pilot(s) will be collected using the digital platform, connecting directly to remote monitoring and smart metering equipment. Data that are not amenable to be collected by remote sensing will be collected either by the mini-grid operator or some alternative way to be defined by the PMU.

Data collected from the pilot(s) will be used at the project level to, among other purposes: (i) track the performance of the mini-grid systems in real-time; (ii) validate the underlying pilot(s) assumptions and business case; (iii) track performance enhancement in mini-grid capacity utilization; and (iv) generate insights and lessons learned to share with the AMP Regional Project. Also, data collected from pilot(s) will be shared with the AMP Regional Project for aggregating and analyzing data across all AMP national child projects. The regional project will use these data to: (i) generate insights and lessons learned; and (ii) inform the development of knowledge products, both to be disseminated across AMP participating countries and the broad mini-grid sector.

Activity 2.2.5. Provide technical assistance to support viability of the minigrid pilot(s)

Support to innovative business modelling, cost-effectiveness and commercial viability will be provided especially to private sector developers, as well as, to a certain extent, to communities, service providers, etc. This may include, (based on needs) assistance on cost optimization, demand stimulation, productive use development, levers to increase energy utility, potential electricity reliability failures resilience options (without resorting to diesel generators). Such support will be evaluated based on a needs' assessment of relevant players. It will be provided through workshops, access to best practices and lessons learnt at AMP regional level (and AMP countries) and further, as well as linking up to support organizations and other funding schemes.

Output 2.3. Capacities of private minigrid developers and communities are strengthened

Activity 2.3.1. Provide training and support to local private sector developers and operators

Once the minigrid tendering process is underway, training and support will be provided to local private sector developers and operators (as identified in Output 2.1). This will encompass properly writing tenders considering tender specifications, innovative business models, cost-effective methodologies and best practices. In addition to initial CAPEX support provided by UNDP's co-financing, information on fund mobilization opportunities (at national, region and international level) will be provided. Support after winning the tender will be offered on a needs-oriented and demand-led manner, including technical design, suitable business models, demand shaping, time-of-use tariffs, monitoring, digitalization and the national digital minigrids platform, etc. Climate risks and concrete mitigation efforts will also be part of the training and support. Capacity building will be provided through workshops (to be delivered with the support of the University of Comoros and the DGEME as stated in Component 1) and webinars (based on existing repositories and the AMP regional platform).

Activity 2.3.2. Raise awareness and building capacities of communities

Communities of the 3 pilot sites will benefit from continuous awareness raising at launch and during implementation of the project as a whole, and pilot site construction and operation in particular. This will include general benefits of the minigrid (including climate change aspects), demand profile, forecast and stimulation, support in money collection for the provision of power, etc. A specific training will be provided to targeted youth and women in the communities on becoming rural electricians (incl. power connection), on basic maintenance of the minigrid, as well as other competencies depending on the implemented business model. It is worth mentioning that maintenance requiring higher technical skills will be provided by the private sector operator. In addition, private sector operators will play a role in knowledge transfer, capacity building and regular support of these targeted youth and women.

Output 2.4. Group of Private Sector RE Services Providers is formalized, operational and its capacities are strengthened

Activity 2.4.1. Formalize and operationalize a national association of private sector RE providers

A former non-operational group of RE engineers (individuals), created with the support of the IOC, will be used as a basis for the creation of a national association of private sector RE providers (legal entities). The creation of the association (or national chapter) will be conducted at project launch. It will include structuring (ToR), formalizing (association status) and operationalizing. This will enable local private sector operators to have a voice at the National Dialogue Platform and further, nationally as well as continentally and internationally (advocacy). Common interests include taxes and import conditions of solar and solar ancillary equipment, collaborating as a consortium of players to answer specific larger bids and competing with international developers, as well as a better outreach. The association could then have thematic sub-committees (if applicable) including one dedicated to minigrids. The association also considered as a national chapter will seek collaboration with AMDA – African Mini-grid Developers Association – as discussed during PPG with the AMDA Bureau. AMDA will become a member of the national chapter (an AMDA consultant located in Comoros should become the chair of the minigrid committee of the association and could support on advocacy, fund mobilization and interaction with its AMDA members (mainly private sector led associations and individual developer companies).

Activity 2.4.2. Strengthen the capacities of the RE private sector association

During PPG phase, private sector energy providers indicated the need to build their capacities as an association. Indeed, an association operates in different ways compared to a private company. Capacities to be focused on encompass structuring, managing, and moderating the association to ensure its well-functioning and its sustainability.

Component 3: Scaled-up Financing

Access to low-cost, commercial capital (equity and debt), for both supply and demand, ideally in local currency, is key to reducing the cost of minigrids, and the scalability and sustainability of a minigrid market. Being an early stage minigrid market, there is no dedicated financial scheme and funding around minigrids in the Comoros.

Output 3.1. The design and operations of a Minigrid Funding Facility under the Electricity Code is supported

Activity 3.1.1. Identify existing financing schemes available in the country supporting access and use of energy

During PPG phase a preliminary mapping of available financing mechanisms related to access and use of energy in general has been undertaken. Some available financing products identified are:

On the demand side:

- Productive loans for micro-entrepreneurs and vulnerable households in food production and processing, including machines and equipment as well as energy autonomy. In addition to the evaluation of the project, the

savings and credit union MECK, located in all the islands, offers training and especially financial education to the loan takers. At MECK Domoni (in the Nioumakélé-Domoni area) 40% of the customers are women.

- A revolving mechanism inspired from quite common "tontine" system (very present especially in rural areas in francophone Africa) is offered by the MFI Sanduk to communities with weekly collection of each member's participation to the common pot. The Sanduk in the main island of Mohéli has 48% of women as customers.
- Leasing with solar home systems (SHS) and appliances for household are offered by local energy service provider All Fam Trade (AFT) in collaboration with Sanduk

On the supply and demand side:

- Commercial loans are also offered by BDC

Main local financial institutions (MECK, Sanduk, BDC and BIC Comores) expressed their will and interest to adapt existing products and develop new ones for beneficiaries of the AMP project in Comoros (and in the long run) based on 1-on-1 discussions during PPG phase. Technical assistance will be provided by the project through outputs under Component 3.

Activity 3.1.2. Design the MFF

Under the revision of the Electricity Code (see Output 1.2.), a Minigrid Funding Facility (MFF) will be included and put in place to support rural electrification via minigrids as well as the development of a minigrids market in Comoros. This Fund, at the beginning at least, would especially be supported by and used for the 3 AMP pilot sites. Main funding will be covered at first by GEF INV and co-financing (incl. from UNDP) and for the 3 pilot sites. Other funding sources will be listed and facilitated as part of the MFF as identified in activity 3.1.1. As such various options could be chosen upon by financial means seeker both on the supply and demand side. The MFF should be designed so that it can become a sub-fund of a future multi-donor Energy Fund in the Comoros as stated in the *Assises de l'Énergie* in 2017 (and not yet put in place in December 2020).

Mechanisms and governance of the Fund should be determined during project implementation – based on best practices, contextualization (Comoros), consultations with relevant stakeholders via the National dialogue platform and the DGEME.

Activity 3.1.3. Operationalize the MFF

The MFF will be supervised by the DGEME and located and managed by a local commercial bank on the supply side and local MFIs MECK and Sanduk on the demand side (connection fees, solar ancillary equipment, etc.).

On the supply side, UNDP will support the setting up of a draw-down loan fund, co-financed by partners to cover initial mini-grid CAPEX for first modules of the minigrid to the three selected pilot sites' communities (as stipulated in the Electricity Code isolated minigrids can only be owned by communities). Communities are committed to provide the land, construction materials for civil engineering, workforce for on the ground civil engineering and support to installation of a first module (to be defined) of the minigrid. For additional modules of the minigrid, BDC and other financing schemes can be applied (see Output 3.2).

On the demand side, UNDP will support the setting up of a draw-down loan fund – possibly located at well geographically disseminated and well accepted microfinance institutions Sanduk and MECK.

Fund mobilization by private and public institutions will be supported by a dedicated fund mobilization strategy. This shall include:

- identifying and involving available financing mechanisms in Comoros (Output 3.1.) in the design and operationalization of the MFF as well as innovative financing solutions available elsewhere with telecom operators, digital platforms, etc. especially in the Indian Ocean and across Africa. It is worth mentioning that some players including private financial institutions and other private sector players (e.g., telecom operators), part of larger pan-African or international groups, are investing in green energy solutions and looking to nurture their CSR efforts.
- building capacities and raising awareness of these players (Output 3.3.)

- contributing to a better understanding of minigrids opportunities and potentials in Comoros (Output 3.2.) for financing players.

Output 3.2. General market intelligence study on minigrids prepared and disseminated amongst public officials and finance community

Activity 3.2.1. Conduct a general market intelligence study

At project launch, a general market study on minigrids will be undertaken based on desk research and interviews to facilitate getting an overview and a better understanding on the energy, electrification and minigrid market situation (baseline) and trends in Comoros. The study will be shared to public officials and the finance community in Comoros.

Activity 3.2.2. Prepare a report summarizing all findings from GIS analysis and site identification efforts to quantify the size of the potential mini-grid pipeline

Market sizing is key especially in a small country with a nascent minigrids market. This report will place an emphasis on the potential sites' suitability and risks as investible assets (for the 3 pilot sites and other potential sites in the country).

Output 3.3. Capacities of the national financial sector (including philanthropic) in terms of business models and innovative financial solutions (including digital) in connection with minigrids are strengthened and facilitate access to financing

Activity 3.3.1. Build the capacities of the national financial sector

The local financial sector (including philanthropic) will only offer suitable and affordable financing solutions (demand and supply) once it gains awareness on and appetite for the minigrids market. De-risking means and lucrative opportunities around lending in the minigrids market in Comoros will be put forward. Workshops will be conducted with representatives of the finance community whereby a variety of business models and financing schemes, as well as the best practices will be shared and discussed about. Capacity building will be carried out with financial institutions to design and implement adapted financing schemes in close collaboration with the other Component 3 outputs. Links will be developed between local financial institutions, relevant government representatives (DGEME, agriculture and more) and international donors in order to explore hybrid and innovative schemes focused on unlocking finance and reducing risks and capital costs (e.g., first loss pools, currency hedging facilities, etc.). This includes for instance IRENA's marketplace, an online investment catalyzer and connecting platform for technical and commercial RE solutions. In addition, awareness will be raised on climate risks and mitigation measures through the introduction and operationalization of renewable minigrids as well as the financial impacts of green solutions.

To ensure a good understanding and ownership of these solutions, capacity building for local financing solutions providers, local developers and energy solutions providers, government representatives, SONELEC, etc. will be provided.

Component 4: Digital, Knowledge Management and Monitoring & Evaluation

Linkages to the AMP Regional Project: Component 4 is a key interface with the AMP Regional Child Project. As such, details on linkages to the regional project as relevant for digital, knowledge management and monitoring and evaluation activities under the project are addressed for each of the outputs described below.

Output 4.1. A Project Digital Strategy is developed and implemented, including linkages to and following guidance from the regional project

Activity 4.1.1 – Develop and implement a Project Digital Strategy

During the PPG phase, identifying and gathering data and studies around energy, renewable energy, GIS mapping etc. at national level has shown to be a real challenge. While access to relevant data and analyses for targeted stakeholders is key, and even critical. As such, a Project Digital Strategy will be designed along with a strategy action plan in year 1 which will be implemented thereafter. Linkages with and guidance from the regional AMP project will support this effort and the regional project will build and share knowledge with the project on the potential for use of digital tools and solutions, including leveraging minigrid projects' data to improve the commercial viability of

renewable energy minigrids. The Project Digital Strategy will be updated on an annual basis to reflect learnings from project implementation, guidance received from the AMP Regional Project on digital tools and solutions, and insights gained from minigrid pilot(s) data.

Studies (e.g., GIS mapping, DREI analysis under Component 1) and other data collected (for instance by demonstration pilot projects under component 2), will all be made available on the project website.

Activity 4.1.2 - Develop recommendations for a national-level digital strategy for minigrid development.

Upon implementation of the Project Digital Strategy and based on lessons learned around opportunities to leverage digital tools and solutions for minigrid sector development, the project (as well as all other AMP national child projects) will develop a set of evidence-based recommendations for rolling out digital solutions for minigrids at the national level. These recommendations will be shared with key national stakeholders and provide the basis for developing a digital strategy for minigrid development post-project.

Output 4.2. Minigrids Digital Platform implemented to run tenders and manage data from pilots, and to support minigrids scale-up and cost-reduction

A digital platform will be procured by the project to serve different purposes including:

Specifically, for minigrid investment pilots under Component 2:

- Running digital tenders by which minigrid developers will be selected as beneficiaries to receive support under the project
- Managing all technical and financial data related to minigrid sites
- Provide minigrid developers - selected to implement minigrid pilots with support from the project - access to a set of best-in-industry digital tools for analyzing minigrids (e.g., demand forecasting, system optimization, distribution network design, detailed financial modeling at the site and portfolio level)
- Capacity building for minigrid developers and government stakeholders around the use of the minigrids data management platform

The implementation of this data management platform by DGEME, the Implementation Partner, to run and manage minigrid tenders and then systematically monitoring minigrid pilots and collected data from pilots, is expected to result in improved project design and system optimization, reduced uncertainties and more transparency in minigrid tenders attracting more bidders and increasing competition, and lower transaction costs associated with bidding.

For the project and minigrid sector more generally:

- Provide a centralized database for all distributed energy projects/programs at national level
- Collect, manage and aggregate data from all minigrid sites
- Run digitized tenders and administer grants (other than for Component 2 pilots)
- Performance verification of minigrid systems for improved sector oversight
- Real-time monitoring and evaluation of electrification projects/programs
- Applying advanced analytics of minigrid portfolios to generate critical insights to advance the sector

Similarly, as part of the roll-out of the data platform, minigrid developers (as well as key government and other stakeholders) will receive capacity-building and in-depth training to use analytical tools and data management technologies.

The AMP Regional Project will make its own data management platform available to aggregate data from all national project pilots based on a common M&E framework.

Activity 4.2.1 – Develop Terms of Reference (TORs) for procuring Minigrids Digital Platform

All national child projects will use standardized TOR provided by the AMP Regional Project and tailor them to the specific country/project needs. **Erreur ! Source du renvoi introuvable.** provides indicative specifications for the Digital Platform which the AMP regional project will develop further into standardized TOR and the project PMU will tailor to the specific country/project needs.

Box 5 Indicative Specifications for the Project's Digital Platform

The project digital platform will provide key functionality for the project in terms of acting as the (i) national digital convening platform for key stakeholders (public/private), (ii) providing ongoing data gathering and M&E on minigrids, including linking to the AMP regional project and (iii) acting as the mechanism for tenders for minigrid developers/sites.

Functionality	Details
National digital convening platform for key stakeholders	• Set up of a country-specific, web-based platform to manage all technical and financial data related to minigrid sites at the site and portfolio level • Single site register of minigrid sites, with geospatial views and technical/financial benchmarks for site assessment • Set of best-in-industry tools for analyzing minigrids, including demand forecasting, minigrid system design and optimization, and financial modeling • Capacity-building and in-depth training of key government and other stakeholders to use analytical tools and data management technologies
National monitoring and evaluation platform (remote monitoring & analytics)	• Direct integration with smart meters and remote monitoring systems for live data feeds and monitoring (with options to address lack of remote monitoring systems or other restrictions) • Big data analytics and customized reporting to calculate and report on standardized metrics for pilot performance, based on project QAMF • Quality assurance of data quality, accuracy, relevance, consistency • Interactive tools to analyze data, filter, and view at varying levels of granularity • All pilot-specific data can be rolled up into national view, and all country-specific data can be rolled-up into regional view
Financing platform for running tenders to select minigrid pilot beneficiaries	• Complete end-to-end management of e-tenders for mini-grids customized to specific project/pilot needs (e.g. customized technology solutions, customized workflow, customized KPIs for pilot monitoring) • Automated proposal analysis for quantitative proposal components • Remote verification of connections through smart meter integrations • Automated M&E analytics for all RBF program indicators (connections deployed, amounts paid, gender/environmental impact metrics, etc.)

Activity 4.2.2 – Procure Minigrids data management platform

All national child projects will procure a country-level Minigrids Digital Platform and set it up to enable (i) convening and capacity building for key stakeholders (public/private), (ii) collecting and managing technical and financial data related to minigrid pilot(s) based on the project's Quality Assurance and Monitoring Framework (QAMF), including linking to the AMP Regional Project, and (iii) acting as the mechanism for running digital tenders for minigrid developers/sites..

Output 4.3. A Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of all minigrids pilots supported, including GHG emission reductions, is adopted and operationalized based on standardized guidance from the regional project

Activity 4.3.1 Provide inputs and feedback to the regional project on the development of a standardized Quality Assurance and Monitoring Framework (QAF)

A standardized Quality Assurance and Monitoring Framework (QAMF)[11] for application in all minigrid pilots supported under AMP national projects (also referred to in this document as a common M&E Framework) will be developed in year 1 of the regional project and disseminated to all national project staff. It is expected that national project staff will provide both inputs and feedback on the development of this framework as well as on how best to operationalize the committing to its adoption by the minigrid operators receiving support from the national project.

[11] Building on the minigrid Quality Assurance Framework (QAF), a set of technical and financial performance monitoring indicators, developed by NREL, SEFA and others, as well as the considerable data gathering, pooling and analysis work ongoing by partners such as RMI, SE4All and AMDA.

Activity 4.3.2 Adopt and utilize the standardized Quality Assurance and Monitoring Framework (QAMF)

The adoption and utilization of this framework and associated data reporting protocols will be a mandatory requirement for all minigrid pilots supported under AMP (e.g., applicable to all national projects) and each minigrid operator/sponsor who is the beneficiary of investment subsidies and technical support by the project will be required to formally commit to using the QAMF as a condition of assistance. The adoption of the QAMF by all minigrid operators/sponsors supported under AMP national projects will ensure that the regional project can aggregate common data metrics and track a standardized set of key performance indicators across all minigrid pilots supported by AMP across all partner countries and report this data to the donor on a programmatic level.

In order to operationalize this, the parties operating the minigrids will be supported with the installation of smart meters and/or remote monitoring equipment as appropriate. Provision will also be made to support the operators to access this data and extract potentially valuable insights on their minigrid operations.

If appropriate, provision will be made to train relevant government agency representatives (and members of the Communities of Practice) in the use of a national minigrid dashboard reporting data on all of the Comoros minigrid projects.

Output 4.4. Monitoring and Evaluation (M&E) and Reporting, including (i) Conducting Inception workshop and preparing report, (ii) Ongoing M&E, (iii) Mid-Term Evaluation and (iv) Terminal Evaluation

The AMP Regional Project will provide support to the project, through its PMU staff or by hiring or recommending subject matter experts, for the project to execute M&E activities such as the inception workshop, ongoing monitoring, and project evaluations. Further details provided in Section VI.

Activity 4.4.1 - Conduct inception workshop and prepare report

A project inception workshop held to officially launch the project and, among other aims, familiarize key stakeholders with the detailed project strategy, roles and responsibilities of the project team. Planning and carrying out national inception workshop: The national inception workshop will be carried at the beginning of project implementation (within 60 days of CEO endorsement of this project). The workshop will be organized by the PMU with support from the IP. An Inception workshop report will be prepared by the PMU and submitted to UNDP within 90 days of CEO endorsement of this project

Activity 4.4.2 – Undertake ongoing project monitoring

Data on Results Framework Indicators systematically collected and analyzed to provide decision-makers, managers, and Stakeholders with information on progress in the achievement of agreed objectives and the use of allocated resources, as set out in the Monitoring and Evaluation Plan.

Monitoring provides management and the main stakeholders of an ongoing intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds. It provides regular feedback on performance of projects and programs taking into account the external environment. This also includes co-financing commitment materialization. Information from systematic monitoring serves as a critical input to ongoing management decisions (adaptive management), evaluation, and learning.

The GEF Core indicators included in the UNDP Project Document (Annex 15) will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Also, the indicators found in the Results Framework will be monitored as per the Monitoring Plan in Annex 5 and the M&E Plan and Budget in Section VI of this project document.

The UNDP-GEF project is accompanied by various plans including Stakeholder Engagement Plan (Annex 9), mitigation plan for project risks (Risk Register in Annex 7), and Gender Action Plan (Annex 11). These plans will be reviewed according to the monitoring and evaluation requirements.

According to the project's social and environmental risk rating, there is a need to carry out continuous monitoring of the social and environmental safeguards as proposed in the Environmental Social Management Framework (ESMF) and other SES frameworks/plans (Annex 10). The ESMP that will emanate from the ESMF will also be monitored under this activity.

Data collected by monitoring GEF Core indicators, Results Framework indicators, project plans and social and environmental safeguards will be used to prepare the PIR to report to the GEF.

Activity 4.4.3 – Undertake a mid-term review

An independent mid-term review (MTR) will take place at the half-way mark of project implementation and will be conducted according to guidance, rules and procedures for such evaluations established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects. The MTR will be made widely available to all project stakeholders in the relevant language.

Activity 4.4.4 – Conduct a terminal evaluation

An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities.

The project's terminal GEF PIR along with the TE report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lessons learned and opportunities for scaling up.

Output 4.5. Engage with regional project, including, but not limited to, via (i) participating in Communities of Practice and (ii) capturing and sharing lessons learnt

The AMP regional project will support and facilitate knowledge management and information sharing between the regional child project and national child projects, among national child projects, and between the program and the larger minigrid community. Knowledge tools and good practices around minigrid cost-reduction in a variety of regulatory environments, and research and development tools, such as policy packages, template tender documents, and guidelines on productive use program designs will be made available. The toolkits will support both public and private sector (e.g. minigrid developers) and the overall minigrid market.

Activity 4.5.1 Participate in AMP Communities of Practice (CoP)

One of the primary ways national 'child' project staff will interface with the regional project is via the 'Communities of Practice' (CoPs) and associated activities/platforms. While it is expected that many of the activities under the Regional Project Component will be undertaken virtually (via internet-based platforms, webinars or digital platforms) it is also expected that the CoPs will include actual in-person workshops, meetings or training events.

Activity 4.5.2. Share lessons learned with the regional AMP project

Research, lessons learned as well as the awareness raising campaigns will be systematically shared with the regional AMP project including the tracking of the indicators and possible adaptations. Guidelines will be defined by the regional project and shared at the project's Inception Workshop. Capacity building will be provided to the Project Management Unit to compile lessons learned and share knowledge effectively.

Activity 4.5.3. Collaborate with the regional project on an 'Insight Brief'

Every national 'child' project is expected (in the course of the four-year implementation cycle) to collaborate with regional project staff on the development of at least 1 'insight brief' capturing (in an accessible format) selected key highlights from a successful national project activity. The 'insight brief' can cover any activity of the project and take the form of a written brief or video brief. The regional project has budgeted resources for the production of 'insight briefs' under Component 1 Knowledge Tools, but the success of regional staff in producing insight briefs highlighting national project activities will be dependent on content and data provided by the national project team and stakeholders. In order to facilitate such collaboration each national project is required to hire a consultant or local firm to gather data and audio-visual content (video footage, photos, etc.) on the subject for the 'insight brief'. The information and data collected at the national level will be provided to the regional project staff who will utilize this content and produce an 'insight brief' according to a standardized communications format for all AMP knowledge products for external audiences. The 'insight brief' will be produced in both the local/national language of the relevant national project as well as English for dissemination by the regional project to regional stakeholders and publishing on the AMP website.

Output 4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels

Activity 4.6.1. Establish a national Community of Practice

To facilitate practical knowledge sharing among practitioners and peers around minigrids development and rural energy access (private and public sectors, government, technical and financial partners) while reducing climate risks in Comoros, a Community of Practice will be created. It is worth mentioning that many of its members will be also

part of the National Dialogue Platform as stated in Component 1. The Community will meet twice a year (organized by the PMO in close collaboration with the IP – DGEME to ensure sustainability) and will share its experiences and more at these meetings as well as regularly throughout the year on a dedicated sharing platform which can be a part of the project website (see Activity 4.3.1). This knowledge sharing platform will also act as a national centralized repository of all relevant studies on the energy situation and market in Comoros (not only done as part of this project), including the ones that have been carried out in the past.

Activity 4.6.2. Link up the Community of Practice with other knowledge networks at various levels

Initiated links during PPG will be further strengthened and expanded at project implementation to create win-win relationships and benefit from each other's experiences and lessons learned. Other knowledge networks include national Communities of Practice of the other AMP countries, RMI's SIDS projects in the Caribbean and soon Pacific Islands, IRENA SIDS Lighthouse Initiative, AMDA, SACREEE, African Mini-Grids Community of Practice for government members of various African countries (Africa LEDS Partnership), etc.

Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project

Activity 4.7.1. Design a communication strategy

A communication strategy will be elaborated based on awareness raising campaigns and lessons learned. The awareness raising campaign experience on energy efficiency as part of the Energy Project with the Indian Ocean Commission (IOC) will be leveraged. Available communication materials on demand-side management (Hamidi family example of the previous campaign) will be adapted. This includes radio spots in local languages and banners. In addition, with the two only telecom operators in Comoros, Comores Telecom and Telma, SMS campaigns will be rolled out – 1 SMS per operator per month over the entire duration of the project. SMS content will be provided by the PMO. Digital means will also be leveraged to raise awareness for instance with the national digital promotion agency, ANADEN, and the association Girls and Tech Comores, supporting digital access for the rural youth. As the GoC aims at offering online education and training across Comoros as a post-COVID response, with the Girls and Tech association, some sensitization on energy demand, renewable energy and energy efficiency, climate change and relevant solutions, could be shared among the rural youth.

The project will develop its own website or a dedicated part in a potential AMP regional website.

Field visits will be organized on pilot sites to see, understand and discuss with local communities on their experience with the minigrids and energy access. Other communities in each of the islands (especially the ones eligible for isolated minigrids identified in the GIS analysis – see activity 1.4.2).

The leveraging role of schools and children will be envisaged to communicate on the need to shift to renewable sources of energy and the catalyzing role of access to energy in rural areas to have access to lighting, cooking, productive use, etc. The experience of Junior International Chamber of Comoros on awareness raising on environment targeting children in 3 schools will be considered.

Activity 4.7.2. Implement and monitor the communication strategy

The communication strategy will be rolled out and specific indicators defined in the communication strategy will be tracked to ensure the expected impacts. The communication strategy will be adapted if necessary, accordingly when gaps appear.

Output 4.8. Replication plan (including investment plan) for scaling up rural energy access developed

Activity 4.8.1. Develop a replication plan for scaling up investment in minigrids

Based on the 3 implemented pilot sites, the various studies (incl. GIS) in Component 1, and Outputs 3.3. and 4.4., on the one hand, and AMP countries lessons learned, other GEF-funded minigrid projects worldwide, experiences of SIDS worldwide (AMP, RMI, etc.) as well as climate change risks and potential mitigation measures, a replication plan will be elaborated to support the scale up of rural energy access especially through minigrids. The replication plan will include an investment plan as well as potential financing sources as identified in Component 3 on Innovative Financing. AMP's comprehensive approach to reduce financing, hardware and soft costs will create the enabling environment to attract public and private investments. This coupled with sound knowledge management underpinned by a robust theory of change is expected to catalyze the minigrid market in Comoros.

Activity 4.8.2. Conduct relevant market survey

A more detailed market survey will be carried in Comoros to assess scaling-up and replication impact potential.

It is important to note that some of the abovementioned project results will be realized by co-financing activities with resources that do not flow through UNDP accounts. In particular, the mini-grid pilots to be built in the projects (Output 2.2) will be funded through a CAPEX (partial) subsidy from the project budget (GEF funds and UNDP TRAC), and the remaining of the CAPEX will be funded by third parties (who will likely be private sector developers and communities but those are not precisely defined yet). While the funds from third parties will not flow through UNDP accounts, they will directly contribute to the same mini-grid pilots the GEF and UNDP funds are contributing to and will be essential to realizing the project objectives. For this AMP child project, these are "co-financing activities included as project results". The precise sources and amounts of these co-financing activities will only be known at implementation stage. UNDP is accountable to monitor all project results, including results to be delivered by these co-financing activities, to ensure consistency with UNDP and GEF policies and procedures, including social and environmental safeguards policies and requirements (SES). This is further detailed in the ESMF (Annex 10).

For these co-financed activities included as project results with resources that do not flow through UNDP accounts, the following procedures will need to be applied before co-financing activities start:

1. The co-financing partner's capacities will need to be assessed through the Partner Capacity Assessment Tool (PCAT) and the co-financing partner will need to develop a risk management strategy if gaps are identified, for UNDP's approval and subsequent oversight/assurance.
2. The co-financing partner will need to sign a legal agreement with UNDP or the Implementing Partner to confirm accountabilities, mentioning in particular the following sentence: "*The co-financed activities will be undertaken in full compliance with [co-financing partner's] policies and procedures. However, because the activities are included in the results of the project the [co-financing partner] commits to monitor these activities consistent with the UNDP Project Document. The Project Board and UNDP will also assume an oversight and assurance role to further ensure the project, including the co-financed activities covered by this letter, remains consistent with UNDP policies and procedures. These arrangements will be confirmed through [signature of Project Document OR signature of Responsible Party Agreement with reference to the Project Document].*".
3. Risks stemming from and/or to co-financed activities – as with risks from/to all other project activities – will be included in the project risk register and monitored accordingly. The risk description will clarify relation to the specific co-financing.
4. Social and environmental risks associated with the co-financed activities will be identified during project design and included in the SESP and relevant safeguard management plans. Relevant safeguards instruments prepared by the co-financing partner will be reviewed by UNDP for consistency with UNDP's SES, during project development and implementation; any gaps will be resolved in discussion with the co-financier.

Once the co-financing activities will have started, risks will need to be monitored (as per item 3 above) and results achieved through co-financed activities will be monitored and reported in the annual GEF PIR, the independent mid-term review and the independent terminal evaluation.

Partnerships:

The project will work with a variety of partners and initiatives to achieve the project's objective including the global environmental benefits, many in the form of co-financing (see Annex J's co-financing letters). Through their various contributions including solar power plants and grid enhancement among others, co-financiers will support access to renewable energy in rural areas.

An overview of the project partners (incl. co-financiers), their current efforts to overcome the development challenge, their expected role in the project as well as the expected results to be achieved, can be found in the table below. It is worth mentioning that each of the partner and partner type will be represented at the National Dialogue Platform.

Table 3 - Partnerships – Project stakeholders and partner initiatives

Name of stakeholder/initiative	What is the stakeholder/initiative currently doing to address the development challenge	What will be the role of the partner in the project's implementation?	What are the expected outputs that partners are expected to partially or fully contribute to?
DGEME - General Department of Energy, Mining and Water (Direction Générale de l'Énergie, des Mines et de l'Eau) **at Ministry of Economy, Investments and Energy**	▪ Ensure leadership on energy related topics ▪ In charge of reforms on the energy sub-sector ▪ Design, implement and monitor the energy policy ▪ Coordinate and monitor energy related projects ▪ Implementing Partner for the Comorsol program financed by the World Bank	**Implementing Partner (assisted by UNDP)** ▪ Responsible for managing and implementing the project (day-to-day), including the monitoring and evaluation of project interventions, the achievement of project results, and the effective use of UNDP resources for the GEF. However, as an assisted NIM, support services will be covered by UNDP (HR and procurement) ▪ Chair the PSC and host the PMU ▪ Provide leadership for institutional, legal and regulatory reforms related to minigrids ▪ Coordinate and animate the National Dialogue Platform ▪ Lead the selection out of the Call for Projects in collaboration with the selection sub-committee of the National Dialogue Platform ▪ Support the regional energy departments in Anjouan and Mohéli to support effective and efficient implementation in the field ▪ In charge of producing the technical and financial reports to be submitted to UNDP and the GEF, as well as integrating lessons learned into knowledge sharing networks ▪ Support the capacity building especially through ToT among its staff and other targeted project stakeholders ▪ Facilitate SIDS-SIDS and South-South exchanges	▪ Output 1.1. An inclusive national dialogue to identify minigrid delivery models is facilitated, clarifying priority interventions for an integrated approach to off-grid electrification ▪ Output 1.2. A review of the Electricity Code explaining the possible minigrid delivery models (including tariff model, tax regime and incentives) is proposed in close collaboration with the National Dialogue Platform members and other development partners ▪ Output 1.7. Institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, are strengthened ▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 3.1. The design and operations of a Minigrid Funding Facility under the Electricity Code is supported ▪ Output 4.3. A Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of all minigrids pilots supported, including GHG emission reductions, is adopted and operationalized based on standardized guidance from the regional project ▪ Output 4.5. Engage with regional project, including, but not limited to, via (i) participating in Communities of Practice and (ii) capturing and sharing lessons learnt ▪ Output 4.8. Replication plan (including investment plan) for scaling up rural energy access developed ▪ Output 4.4. Monitoring and Evaluation (M&E) and Reporting, including (i) Conducting Inception

Name of stakeholder/initiative	What is the stakeholder/initiative currently doing to address the development challenge	What will be the role of the partner in the project's implementation?	What are the expected outputs that partners are expected to partially or fully contribute to?
			workshop and preparing report, (ii) Ongoing M&E, (iii) Mid-Term Evaluation and (iv) Terminal Evaluation
SONELEC	▪ In charge of electricity production, transmission, distribution and sales ▪ Negotiate purchasing contracts ▪ Improve and maintain power grid ▪ Improve and maintain power plants	▪ Support autonomous minigrid pilot projects as a provider of transmission and distribution equipment, installation and maintenance ▪ Facilitate the scale up of low carbon minigrids and sustainability of the project's outcomes by leveraging lessons learnt and best practices of innovative technology solutions, business models, financing mechanisms etc. ▪ Support project management costs	▪ Output 1.2. A review of the Electricity Code explaining the possible minigrid delivery models (including tariff model, tax regime and incentives) is proposed in close collaboration with the National Dialogue Platform members and other development partners ▪ Output 1.7. Institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, are strengthened ▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels
Ministry of Agriculture, Fisheries and Environment	▪ Support program/project implementation contributing to promote the environment and stimulating agricultural value chains ▪ Promote agriculture via Rural Economic Development Centers (CRDEs) ▪ In charge of environmental safeguards and audits	▪ Support the identification of agricultural value chains with high potential and high energy use ▪ Promote farmers' initiatives around conservation and processing of agriculture and fishery produce ▪ Raise awareness on using solar energy and equipment to for production (irrigation), conservation and processing of agricultural and fishery products across the country ▪ Support capacity building initiatives of CRDE targeting cooperatives to sensitize them on the benefits of energy to reduce revenue losses	▪ Output 2.1. National report on opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, is produced and innovation is promoted ▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project
Ministry of Health, Solidarity, Social Protection and Gender Promotion **Ministry of National Education, Higher Education and Scientific Research** **Ministry of Youth, Employment, Labor, Vocational Training and**	▪ In charge of their relevant focus' strategy and implementation contributing inter alia to rural development, women and youth, etc.	▪ Contribute respectively to education, training, women and youth, healthcare as well as COVID crisis response	▪ Output 1.8. Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labor market in minigrids facilitated ▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids

Name of stakeholder/initiative	What is the stakeholder/initiative currently doing to address the development challenge	What will be the role of the partner in the project's implementation?	What are the expected outputs that partners are expected to partially or fully contribute to?
Integration, Sports, Arts and Culture			
General National Planning Commission and Gender Commission	▪ Plan development projects at national level ▪ Lead the monitoring the PCE2030 implementation ▪ Involve women in development activities	▪ Ensure the integration of renewable energy projects into national planning/strategy ▪ Consider the AMP project as a contributor to the diversification of the energy mix in Comoros as part of the PCE's energy loop ▪ Facilitate the support of women project beneficiaries in terms of new income generating activities (IGA) and in decision-making vs. energy at household, business and community levels ▪ Support capacity building efforts of women (energy benefits, job creation, etc.)	▪ Output 2.3. Capacities of private minigrid developers and communities are strengthened ▪ Output 4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels
Customs Department	▪ In charge of monitoring products entering the country ▪ Create and operationalize an environmental brigade ▪ Develop a digital platform for imports control ▪ Apply solar equipment tax exemption (By-law #012-005/VP-MPEEIA/CAB and #012-088/VP-MPEEIA/CAB) ▪ In charge of setting and enforcing quality standards	▪ Support in defining RE equipment quality standards and enforcement with regional and international expertise/standards ▪ Discussing on limiting the import of energy-intensive products ▪ Reinforce the operationalization of the environmental brigade to control imports in the country	▪ Output 1.2. A review of the political and regulatory frameworks on the possible minigrid delivery models and suitable incentives is proposed in close collaboration with the National Dialogue Platform members and other development partners
ANADEN – National Digital Promotion Agency	▪ Contribute to improved livelihoods through digital solutions ▪ In charge of the digital and innovation aspects at and for the Government ▪ Develop and implement the Digital Comoros Strategy 2028 (Stratégie Comores Numérique 2028) ▪ Support digital start-ups across the country incl. through incubation services	▪ Assist in the organization of an innovation start-up contest around rural electrification through minigrids at national level ▪ Contribute to promoting innovation and digital solutions throughout the project ▪ Support awareness raising efforts around the project topics through digital means	▪ Output 2.1. National report on opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, is produced and innovation is promoted ▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally ▪ Output 4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels
Local private sector energy providers	▪ Install and maintain various energy related equipment including solar up to 60kVA (all) ▪ Act as exclusive distributor of specific energy equipment (some) ▪ Carry out various studies (some) ▪ Work closely with the diaspora ▪ Try to overcome tax issues with customs' lack of tax exemption enforcement	▪ Act as private operator partner of pilot projects (after Call for Projects) ▪ Become potential providers of specific studies where no conflict of interest ▪ Support training and monitoring of installers and electricians trained by the project ▪ Support awareness raising and training of pilot project communities	▪ Output 1.4. Geospatial, techno-economic modelling of least-cost off-grid renewable electricity technologies (mini-grids, grid expansion, solar home systems) ▪ Output 3.8. Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labor market in minigrids facilitated

Name of stakeholder/initiative	What is the stakeholder/initiative currently doing to address the development challenge	What will be the role of the partner in the project's implementation?	Are there expected outputs that partners are expected to, or likely to, contribute to?
		▪ Contribute to awareness raising/ communication towards general public ▪ Equip households, companies and public services with solar and EE ancillary equipment ▪ Facilitate the structuring of existing group of RE service providers to become an association and benefit from relevant capacity building	▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 2.3. Capacities of private minigrid developers and communities are strengthened ▪ Output 2.4. Group of Private Sector RE Services Providers is formalized, operational and its capacities are strengthened ▪ Output 4.5. Engage with regional project, including, but not limited to, via (i) participating in Communities of Practice and (ii) capturing and sharing lessons learnt ▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project
International developers and Energy service providers Innovent Vigor Other foreign energy solutions providers abroad (tbd)	International players on the Comorian market: ▪ Implement inter-connected RE power plants ▪ Contribute to effective energy access for local populations (including rural) at national uniform tariff Foreign innovative energy solutions providers: Not yet present in Comoros	International players on the Comorian market: ▪ Contribute to effective energy access for local populations (including rural) at national uniform tariff ▪ Subcontract local energy services providers for some of their activities Foreign innovative energy solutions providers: ▪ Provide innovative technological solutions (containerized solutions, agri-voltaism, etc.) ▪ Share best practices and lessons learnt	▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 2.3. Capacities of private minigrid developers and communities are strengthened ▪ Output 4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels
Communities: Households and Businesses with special attention given to women, youth and other vulnerable groups	▪ Some communities develop their own pico/nano mini grid to cover some of their electricity needs	▪ Request minigrid at community level on pilot sites (only ones allowed too) ▪ Support access to land for the minigrid, civil works, workforce to install the minigrid ▪ Facilitate the management, maintenance and money collection to a certain extent (to be defined on a case-by-case basis) ▪ Stimulate power demand and money collection ▪ Facilitate access to finance including through the diaspora and donors including GEF's Small grant Programme	▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 2.3. Capacities of private minigrid developers and communities are strengthened
Public services (social productive use) – health centers and schools	▪ n.a.	▪ Contribute to improved livelihood especially during COVID times and recovery ▪ Support the access to healthcare through innovative solar solutions such as WeCareSolar at the health center as well as in areas where there is no health center or solar refrigerators with drugs and vaccines	▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project

Name of stakeholder/initiative	What is the stakeholder/initiative currently doing to address the development challenge	What will be the role of the partner in the project's implementation?	What are the expected outputs that partners are expected to partially or fully contribute to?
		▪ Raise awareness of children in some schools on rural electrification, renewable energy, energy efficiency, energy consumption and environment	
Financial institutions and providers of financing solutions Sanduk MECK BDC BIC Foreign providers	▪ Offer financial products (loans, leasing, etc.) to clients/members in general (limited products focusing on energy) ▪ Contribute to financial inclusion of rural and vulnerable populations	▪ Support the design and offering of energy-related financing mechanisms in the intervention zones and across the country, including in collaboration with private sector energy services providers ▪ Contribute to financial inclusion and minigrid market development ▪ Raise awareness of clients and future clients on RE related financing products and their benefits	▪ Output 3.3. Capacities of the national financial sector (including philanthropic) in terms of business models and innovative financial solutions (including digital) in connection with minigrids are strengthened and facilitate access to financing ▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project
Civil Society Organizations and NGOs PANF Girls and Tech Junior International Chamber of Comoros Shawiri-scoops ADESCO Wallah II Women Farmers Association of Bandasamlini Women's Platform for Sustainable Development and Food Security (Plateforme Femmes Développement Durable et Sécurité Alimentaire - PFDDSA) Etc.	▪ Contribute to advocacy of communities, women, youth, entrepreneurs, etc. ▪ Support local community development ▪ Facilitate livelihoods improvement and sustainable development	▪ Collaborate in disseminating information and raising awareness of the general public and vulnerable groups related to different aspects of the project ▪ Educate and inform the public on the effects of using energy-consuming equipment, RE, the minigrid, etc. ▪ Support awareness campaigns targeting farmers, fishermen, and other productive users (carpenters, dressmakers, welders, traders), etc. ▪ Assist in mobilizing community members including women and youth as well as acting as a focal point ▪ Facilitate information gathering on economic and social activities across the country and opportunities to boost them through access to energy via minigrids ▪ Contribute to the innovation start-up contest around rural electrification through minigrids	▪ Output 2.1. National report on opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, is produced and innovation is promoted ▪ Output 2.3. Capacities of private minigrid developers and communities are strengthened ▪ Output 4.5. Engage with regional project, including, but not limited to, via (i) participating in Communities of Practice and (ii) capturing and sharing lessons learnt ▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project
Telecom operators Comores Telecom Telma	▪ Raise awareness on various topics with different partners ▪ Implement solar and hybrid energy solutions for their antennas ▪ Provide mobile banking and payment solutions for telco subscribers (MVola for Telma and upcoming for Comores Telecom) ▪ Offer in the near future solar kits at their telco shops as well as some ancillary equipment (solar charger, solar batteries, etc.) (Telma)	▪ Become an anchor client for pilot minigrid projects ▪ Send 1 SMS per month per Telco operator with content related to the project to raise awareness (rural electrification, minigrids, RE, EE, gender, energy consumption optimization, financing schemes, etc.) ▪ Provide mobile payment and banking solutions for the payment of electricity as well as the payment of ancillary RE and EE equipment ▪ Act as a potential provider of minigrid development and operation for Telma (experience in neighboring Madagascar including on a UNDP project)	▪ Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids ▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project

Name of stakeholder/initiative	What is the stakeholder/initiative currently doing to address the development challenge	What will be the role of the partner in the project's implementation?	What are the expected outputs that partners are expected to directly or fully contribute to?
	▪ Offer in the near future solar terminals in at least 20 rural villages especially close to their telco shops for people to charge their phones (Telma)		
Private sector associations Union of Chambers of Commerce, Industry and Agriculture (UCCIA) MODEC (Employer's association) Nouvelle OPACO (Employer's association) Etc.	▪ Support private sector player to play their catalyzer role of the economy and sustainable development ▪ Act as the voice of the private sector towards the Government and other players ▪ Collaborate with other private sector associations in the region and across the world ▪ Contribute to promote social and environmental impact of the private sector	▪ Support private sector player to play their catalyzer role of the economy and sustainable development ▪ Act as platforms to access data and reach potential suppliers of studies etc. for the project (possibly also with international players if needed) ▪ Act as the voice of the private sector towards the Government and other players ▪ Collaborate with other private sector associations in the region and across the world ▪ Contribute to promote social and environmental impact of the private sector	▪ Output 1.4. Geospatial, techno-economic modelling of least-cost off-grid renewable electricity technologies (mini-grids, grid expansion, solar home systems) ▪ Output 2.1. National report on opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, is produced and innovation is promoted ▪ Output 3.2. General market intelligence study on minigrids prepared and disseminated amongst public officials ▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project and finance community
Technical and financial partners AfDB EU World Bank GEF/UNDP SGP UNDP & UNDP GEF Projects Etc.	▪ Carry out reforms of the policy and regulatory framework related to energy and renewable energy ▪ Support the implementation of inter-connected solar power plants (IPPs) ▪ Support the development and uptake of small scale RE solutions at community/last mile level ▪ Contribute to increase electricity access especially in rural areas specifically through solar solutions	▪ Generate synergies, collaborate on relevant topics and activities, and avoid duplication of work ▪ Support project management costs	▪ Tbd based on a pragmatic approach and sharing of activities and potential synergies especially through the National Dialogue Platform
Academics & Training providers	▪ Design and deliver training and higher education of engineers, electricians, masons/civil works ▪ Offer State acknowledged certifications and diplomas	▪ Design appropriate modular training modules for various targeted segments (Ministries, SONELEC, energy services providers, electricians and installers, communities, etc.) based on needs (relevant analyses), available training material of these organizations/institutions and existing training material at AMP regional level and further (South-South and SIDS-SIDS cooperation) ▪ Offer suitable modular trainings ▪ Offer State acknowledged certifications and more ▪ Contribute to ToT ▪ Contribute to sharing knowledge nationally, at AMP regional level and further	▪ Output 1.7. Institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, are strengthened ▪ Output 1.8. Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labor market in minigrids facilitated ▪ Output 2.3. Capacities of private minigrid developers and communities are strengthened ▪ Output 4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels
Media (radio, print media, TV, social media, etc.)	▪ Inform and sensitize general public on various topics ▪ Inform policy makers ▪ Develop communication tools	▪ Inform and sensitize general public on the projects on the protection of the environment, rural electrification, the	▪ Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all

Name of stakeholder/initiative	What is the stakeholder/initiative currently doing to address the development challenge	What will be the role of the partner in the project's implementation?	What are the expected outputs that partners are expected to partially or fully contribute to?
		benefits of low carbon minigrids and ancillary equipment etc.	levels nationally (incl. intervention zones) and with the regional project and finance community

Table 4 - Partnerships – Baseline projects and potential synergies (non-exhaustive list)

Name of Donor/Project Holder	Name of the project	Description of the project	Potential synergies
AfDB / DGEME at MoEIE	PASEC – Projet d'Appui au Secteur de l'Énergie aux Comores	Support Project to the Energy Sector in Comoros Objective: supporting the Ministry via DGEME in terms of regulatory aspects, rehabilitation of thermal and hydraulic power plants, rehabilitation of the power grid, training planning for SONELEC and DGEME agents on all 3 islands	▪ Regulatory framework on reforming the energy sector to be launched in 2020 ▪ Capacity building of DGEME agents
Indian Ocean Commission (IOC) and European Union	IOC – ENERGIES (regional project)	Objective: support the reduction of consumption and the development of renewable energies, to prepare the islands and their populations to adapt to climate change. But at the same time, the energy strategy of the countries in the zone must guarantee equitable access and development for each of the 29 million inhabitants of the IOC islands.	▪ Communication tools designed for minigrdids and energy efficiency for households
IFAD	PREFER - Productivité et Résilience des Exploitations agricoles familiales	Objective: improve food security and livelihoods of the rural poor via sustainably increasing the availability of local produce and the agricultural incomes of supported households	▪ Nexus Water-Agriculture-Energy-Food (tank and cold room installation) ▪ Gender aspect with Association Culturelle des Femmes (ACFM) in Miringoni
World Bank/ MoEIE	ComorSol	Improve the commercial capacity of SONELEC through the generalization of prepaid meters, the increase of commercial agencies but also to help SONELEC to better manage renewable energies through a dispatching center, storage and a solar installation.	▪ Regulatory framework ▪ Capacity building
SGP/UNDP/GEF/ ACDI (Community Association of Idjikoundzi Dimani)	Solar Electrification of the locality of Idjikoundzi Dimani	Provide a solar electrification system for all community infrastructures Set up a solar electricity management, maintenance and servicing system managed by the users' committee in order to ensure sustainable community electrification	
SGP/UNDP/GEF/Miremani	Upgrading pico-hydro power plant at community level	Existing pico-hydro power supporting households needs to be upgraded	▪ Included in the "Super Hybrid" pilot site in Mohéli
SGP/UNDP/GEF/Association ADESCO Ouallah II	Biodigester	Biodigester for waste from the ecolodge in Ouallah II (12m3)	▪ Included in the "Super Hybrid" pilot site in Mohéli
SGP/UNDP/GEF/ASDEI Association	Solar Mamas Itsamia	Provide a solar electrification system for all community infrastructures Provide training for Solar Mamas at Barefoot College (India)	▪ Training of rural electricians Focus on women
CRDE Badasamlini (Centre Régional de Développement Économique)		Supporting farmers, reducing harvest losses, increasing farmers' incomes and reducing poverty among the rural population	▪ Settlement of 100 young people in the Bandassamlini-Sangani area, pilot site of the AMP project

Name of Donor/Project Holder	Name of the project	Description of the project	Potential synergies
World Bank / Ministry of Health	COMPASS	Support the health sector through several activities incl. self-consumption of solar energy by health centers on the national territory	▪ Health centers are targeted by AMP
AfDB / Environment Department of MoAE	Women Empowerment	Focus on the urgent need to tackle household poverty through the development of income-generating activities for women's groups operating along the Sima/Moya (Anjouan) and Moroni/Foumbouni road axes. The overall objective of this project is to improve the livelihoods of targeted populations in the project intervention zone.	▪ Even if not targeting same intervention zones some synergies could be found on gender mainstreaming and promotion

A number of the abovementioned partners have provided letters of co-financing for this project, as attached in Annex 14 to this project document. As further described in the table below, most of these co-financed activities correspond to funds not flowing through UNDP accounts and whose results are not included in the project results framework. In this case, UNDP is accountable to monitor the risk to realization of co-financing amounts and realization amounts annually in the GEF PIR, at mid-term and at terminal evaluation. Specifically, potential risks associated with co-financing that may affect the Project, including safeguards related risks that fall within the project context or area of influence, will be considered in safeguards due diligence and the project risk register and monitored accordingly. Risk management measures identified will be only those within the control of the UNDP project (e.g. managing reputational risk). See the ESMF (Annex 10) for more details on the management of risks related to the different types of co-financed activities in this project.

Table 5 - List of co-financed activities not included as project results

Co-financing source	Co-financing type	Co-financing amount (USD)	Included in project results?	If yes, list the relevant outputs
MoEIE/DGEME (In-Kind)	In-kind	USD 42,326	No	N/A
SONELEC (in-kind)	In-kind	USD 1,036,736	No	N/A
ANADEN (in-kind)	In-kind	USD 39,636	No	N/A
European Union (grant)	Grant	USD 2,712,695	No	N/A
African Development Bank/PASEC (grant)	Grant	USD 1,328,210	No	N/A
World Bank/Comorsol (grant)	In-kind	USD 36,600,000	No	N/A
TOTAL		**USD 41,759,603**		

Stakeholder engagement and south-south cooperation:

The participatory and inclusive approach adopted by the project since PPG is part of its DNA. A stakeholder analysis (to be continuously updated) was undertaken to identify all relevant stakeholders at PPG phase. Extensive and numerous stakeholder consultations, one-on-one, in groups and at workshops (inception and validation) were carried out at PPG phase and will be pursued during project implementation to ensure ownership and sustainability of the project after closure. Comments, questions, requests and commitments are stimulated at every project stakeholder.

Particular efforts were put since design phase and will continue during the entire project implementation phase:

- Promote effective engagement, as well as inclusive and meaningful consultation. This encompasses a two-way process between the stakeholders and UNDP as GEF executing agency to ensure continuous insights, feedback and involvement of project stakeholders. Sharing information and knowledge is critical and supported at PPG as well as during implementation through different specific tools and activities.
- Forge stronger partnerships, particularly with civil society, communities and the private sector. It requires continuous work, based on transparency, engagement and dialogue, outreach, awareness building, listening, and respect for the importance and contributions of all stakeholders.
- Harness the knowledge and expertise of stakeholders which includes acknowledging the fact that stakeholders are a great source of information and knowledge, and that these should be shared through various means including via knowledge management and monitoring & evaluation (Component 4).

Stakeholder engagement since PPG put a high emphasis on conducting it in an inclusive and gender responsive manner. During PPG phase, relevant stakeholders were asked to provide inputs and comments on the project and their specific role in contributing to overcome the development challenge together. This largely contributed to nourishing the project document and adapting it to local realities and needs as much as possible. At validation workshop and after sharing the final draft of the project document and annexes, feedback was provided by stakeholders and integrated into the final version of the document. During project implementation, stakeholders will continue to actively contribute and engage in achieving the overall goal of the project. The Stakeholder Engagement Plan in Annex 9 provides further details on the stakeholder groups, their roles and responsibilities.

Different actions are provided to stimulate and sustain stakeholder engagement throughout project duration (and even after):

- Inception workshop at project launch gathering all key stakeholders to present the project and the inception report to facilitate project implementation. Participants will be invited to share their insights and updates to adapt the workplan. The official project launch and main outcomes of the inception workshop will be broadcasted to a larger audience as part of the awareness raising campaign (Component 4).
- The National dialogue platform (Component 1) is a powerful tool to support exchanges between project stakeholders and with the PMU on various topics (especially through sub-committees). This multi-stakeholder media is critical to effectively and efficiently contribute to the development of a nascent minigrids market in Comoros. Sub-committees will be created to further facilitate implementation, ownership and engagement.
- The national Community of Practice is another means to engage with all relevant stakeholders and motivate them to be involved in the project, sharing their experience, learning, and growing.
- Continuous stakeholder interactions and consultations through meetings, workshops, trainings, awareness raising campaigns, etc. will also be used to foster stakeholder engagement.
- The Project Board/Steering Committee is the ultimate platform for stakeholder engagement and decision-making including beneficiary representatives, the project executive and the development partner (see below). Topics such as workplan, activities and results will be debated, decisions taken together, and necessary corrective measures proposed.

South-South cooperation is particularly fostered in this project. AMP is a regional programme in Sub-Saharan Africa with a minimum of 14 countries participating. Various knowledge sharing tools among AMP countries and AMP's regional character project will be provided (Component 4). Cooperation and partnerships with other initiatives and organizations promoting South-South cooperation will be offered under the AMP umbrella including RMI, AfDB,

IRENA, SE4All, AMDA, etc. Discussions with SACREEE (that Comoros joined recently) and MASEN in Morocco should be developed at project launch. Cooperation with AMP Burkina Faso for francophone training on specific topics as well as with Senegal's successful national dialogue platform on energy will be fostered.

As a SIDS, during PPG phase, exchanges with RMI, on their programme for islands in the Caribbean and upcoming one for islands in the Pacific, are very promising i.e., quite some similarities, lessons learnt, and best practices could be shared. This could be also reinforced by IRENA's Lighthouse initiative.

In addition, to bring the voice of Comoros to global and regional fora, the project will explore opportunities for meaningful participation in specific events where UNDP could support engagement with the global development discourse on low carbon minigrids. The project will, furthermore, provide opportunities for regional cooperation with countries that are implementing initiatives on low carbon minigrids in geopolitical, social and environmental contexts relevant to the proposed project in Comoros.

Gender equality and Women's Empowerment:

Comoros is considered as a matrilineal society whereby women hold an important role in society in terms of asset ownership and heritage. However, gender inequalities in the Comoros are well entrenched. Religious, traditional and modern aspects are mixed up leading to traditionally matrilineal aspects while a patriarchal perspective is present for religious reasons. As such land is often, in the end, in favor of male ownership in the end or at least controlling the management of this land. UNDP's Human Development Index (HDI) in the Comoros amounts to 0.504 for women in 2018 vs. 0.568 for men, resulting in a Gender Development Index value of 0.888, placing it slightly below the average for Sub-Saharan Africa. While gender equality is enshrined in the Comorian Constitution, women have significantly lower access to healthcare, to school completion and standard of living, as well as higher unemployment rates. The latter indicates that they disproportionally perform unpaid work. This is particularly the case in rural areas (focus of the project). Rural women are expected to work in the field, undertake household duties including taking care of children, cooking, collecting wood and water, etc. while not really earning a living. Men in rural areas are either fishermen on the coast, or artisans (carpenter, mechanician, etc.), or small livestock herder and only a few works in agricultural fields. Men and women collect and carry firewood, contrary to many other African countries where women are solely in charge of this task. Women's participation in the labor force is only 33%. This participation rate is one of the lowest in the region and compounds women's economic vulnerability. In terms of decision making and control, rural women often have to ask for a man's authorization for instance regarding the household budget or for productive activities. However, women tend to reach out to an older woman such as a mother to plead one's cause in front of men. Women on the islands of Mohéli and Anjouan are more reserved than in Grande Comores according to a women's focus group and field observations during PPG phase. They are significantly underrepresented in the political sphere (3% of the deputies at the National Assembly while growing number of female candidates according to AfDB). In terms of access to energy, while biomass is often managed and collected by women, decision to access to electricity is often taken by men.

As such gender mainstreaming is considered essential in the project. Taking women, youth and other vulnerable groups, as well as their situation and role, into account is reflected in all project components as indicated in the Gender Action Plan (Annex 11). Inclusiveness and a gender responsive manner has been brought since the project's design phase. Women's and youth association in addition to women and youth in the project's intervention's communities are consulted since PPG's beginning for their role as catalyzer for local sustainable development, their influencing role (and focal point) as well as for awareness raising, training and monitoring purposes. The associations have proven to be largely influencing communities. which are at the very heart of the minigrid delivery model, in Comoros. They also act as a trustful implementing and informing player.

The project aims at integrating gender-responsive measures to address identified gender gaps across the 4 project's components. It is classified as gender transformative with a strong gender-sensitive approach, whereby gender equality in participation will be incorporated in the project design as per the Gender Action Plan in Annex 11. The Gender Action Plan will guide the project implementation to build project partner capacity to mainstream gender and bring along strategies that empower women and youth as efficient change agents. This plan will be facilitated by the Stakeholder Engagement Plan (Annex 9), which outlines the multiple ways in which women and youth will be engaged in the project implementation.

Innovativeness, Sustainability and Potential for Scaling Up:

Innovativeness

Innovation is inherent to AMP's DNA and applied in various aspects:

1. The project's rationale focuses on the cost-reduction niche of minigrids – hardware, soft and financial costs - as an efficient and effective solution to attract private investment and *in fine* enable rural communities in Comoros to have access to sustainable, reliable, affordable and greener energy.
2. A particular focus and *sine qua none* condition of minigrid projects under AMP is energy for productive use. It is a pillar of the financial viability of minigrids in rural areas. Productive uses include both commercial (e.g., solar pumping, agricultural produce conservation and processing, artisans and shops) and social (e.g., health and education facilities).
3. Innovative technology solutions are pout forward and will be implemented in the pilot projects. Various technological solutions are envisaged such as containerized minigrid solutions including for productive use (freezers and ice machines for the fishery value chain) or agrivoltaism (where solar minigrids are installed on top of an agricultural field to produce power while saving space and supporting crop productivity). Smart meters and innovative payment solutions (mobile payment etc.) are considered too.
4. The cost optimization aspect is combined with innovative minigrid business models. The innovative aspect of business models relies, on the one hand, on cleantech solutions such as the key maker model and all-inclusive containerized solutions (see Component 2), and on a hybridized setup whereby a close collaboration between communities and private sector, as well as with the government and public sector (development, management and operations) is created.
5. Innovative suitable financing solutions targeting minigrids both for supply and demand are put forward including crowdfunding and -lending, mobile money, and diaspora digital shopping carts (see Component 3) under a Minigrid Funding Facility umbrella.
6. A market-based intervention is applied to effectively contribute to sustainability of the minigrids. As such the private sector plays a key role from PIF and PPG phase up to implementation and post-project phase.
7. A participatory approach is applied since preparation of the project to ensure collaboration with and between all relevant stakeholders, commitment and ownership, as well as the project's sustainability (including post - project.
8. Gender mainstreaming and social and environmental safeguards are incorporated to the entire project design and implementation to ensure social inclusivity, gender equity and environmental protection.
9. The regional programmatic approach, with a regional chapeau project, facilitates access and sharing of expertise, best practices, lessons learnt, training materials, etc., *inter alia* through a pool of experts, AMP Communities of Practice, a regional digital platform, etc.

Sustainability

Sustainability of the project is safeguarded through the active participation of the private sector to establish viable and innovative business models in the minigrid sector. By seeking durable profitability, private sector players will ensure the activities continue well after the end of the project. Private sector players (especially energy services providers) oversee the operations and maintenance of the minigrids, possibly along with local support (incl. trained rural electricians) towards the entire lifetime of the project. In their contract it will be stipulated that they have to take care of replacing and disposing batteries, converters and other equipment. The disposal will be facilitated thanks to the collaboration with the GEF/UNDP waste project. The market-based approach around pilot projects (Component 2) along with technical and financial assistance provided by the GEF and its partners (incl. co-financiers) will highly contribute to the sustainability of the project outcomes and objective.

Thanks to smart meters and related digital systems, monitoring minigrids systems for lifetime will be facilitated. Private sector minigrid developers will be able to streamline their operations though smart metering and remote control of their assets and potentially reduce operations and maintenance costs by about 15% to 30% through reduced site visits, labor and component replacement costs. They will also be able to monitor the performance,

usage and potential issues to increase sustainability. The Government (DGEME) along with stakeholders including national utilities SONELEC could use these digital solutions for energy sector planning, to streamline licensing, monitor quality of service and broadly improve sector oversight over the minigrids lifetime. In the contract for pilot sites, benefitting from project's investment grants should incorporate a binding clause on operating and maintaining the minigrids during its lifetime and sharing relevant data.

The replicability plan (incl. an investment plan) developed during project implementation will further support the project's exit strategy and continuity. Hands-on capacity building (technical and managerial) of private sector players (developers, energy services providers as well as businesses using energy for productive uses) and communities (incl. youth and women rural electricians) is another lever contributing to sustainability.

The Minigrid Funding Facility and its various innovative options from various financial institutions and potential donors is designed to last.

The conducive environment created by a suitable policy and regulatory framework and the adapted institutional setup and capacities around minigrids will also support the market scale-up and durability at national level.

At institutional level, the creation of a structured national RE services providers association (with industry associations, such as AMDA) as well as the national dialogue platform should be able to survive after the project because of its utility. The platform shall be integrated at MoEIE with the support of the operations of the producers represent a substantial financial burden for the member organizations, which is another metrics for sustainability.

The structural anchorage of RE and electrification at lower cost and increased reliability as priorities in the PCE and various strategies and plans at national level as well as in international conventions signed by the Comoros should also enable the long-term thinking and implementation of minigrids as a solution for universal, reliable, affordable and green energy access on the archipelago.

Potential for scaling-up

Scaling-up the minigrids market, especially through private sector investment and innovative business models, is the main objective of the AMP. As such the potential for scaling-up has been thought through during the inception phase of the project (PIF and PPG) and a holistic scaling up plan is elaborated below.

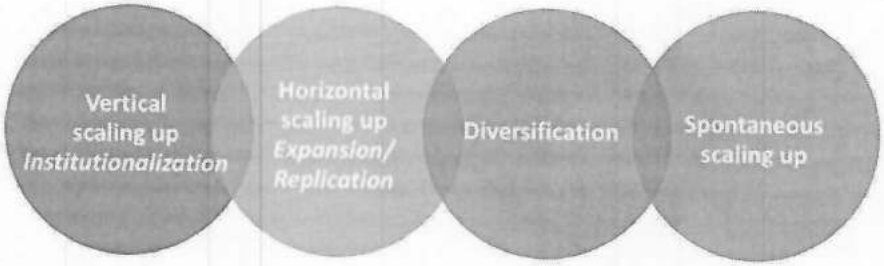


Figure 9- Scaling-up approach

- Vertical scaling up is envisaged in the context of actions targeting institutionalized capacity building at policy, political, legal, regulatory, and budgetary planning actions as well as via the creation and operationalization of a private sector association for RE service providers in the Comoros. Component 1 envisages creating a national dialogue platform around minigrids and rural electrification, which will facilitate synergies and common action through a multi-stakeholder dialogue, a cross-sectoral approach as well as offering targeted needs-based capacity building. In component 2, vertical scale-up is ensured by structuring the private sector along the RE value chain by establishing an umbrella association of all these players. Dissemination and advocacy will be ensured (Component 4) and will provide the necessary scale-up effect.

- Horizontal scale-up – expansion/ replication – will be fostered and promoted especially through the support to innovative and viable business models and pilot projects on minigrids considering cost-reduction and energy for productive use (commercial and social). Thanks to capacity building, education and large-scale public awareness campaigns, the outreach and impact will be bigger and contribute to the expansion and replication of demonstrated business models and pilot projects. Awareness raising, capacity building, technical and financial

assistance of businesses along with the catalyzing role of the private sector will facilitate the replication of the innovative business models and pilot projects to other geographical areas and to other communities in Comoros. The replication plan (Output 4.6.) will crystalize and support market development and business model replication. Component 3 through the MFF and capacity building of financial institutions and partners should also support the replicability of the minigrids and innovative business models in other rural communities in Comoros. Once financial partners are convinced of the return on investment (RoI) and the potential of supporting minigrids systems and more, scaling-up will be facilitated. Relevant financial products both for supply and demand shall be promoted.

- Diversification in the scaling-up potential is also sought by the project. Business models that are evaluated to be viable would be promoted in the context of the project strategy for diversification or functional scaling-up. For example, adding energy efficiency measures and appliances was discussed. Continuous improvement and additional innovations will be further added in the context of the pilot projects' implementation (Component 2) as well as best practices and knowledge sharing with AMP Communities of Practice or any other knowledge network, trainings and community outreach activities (Component 4).
- Spontaneous scaling-up may also be realized as part of the direct project result and beyond, and these will be documented through the knowledge management actions in Component 4. Therefore, as part of the project implementation plans, the scaling-up strategy and its roll-out will be drawn. The project will also support systematic monitoring of the implementation of planned activities and based on achieved results, document the profiles of those which could be promoted for scaling-up, and to be included in the replication plan (Output 4.6.).

V. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s):

- SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all
  - SDG 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
  - SDG 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
- SDG13: Take urgent action to combat climate change and its impacts
- SDG5: Achieve gender equality and empower all women and girls

This project will contribute to the following country outcome (UNDAF/CPD, RPD, GPD):

UNDAF 2015-2021:

- Outcome 4: By 2021, the most vulnerable populations ensure their resilience to climate change and crises.
- Output 4.4: Public institutions, the private sector, and vulnerable communities have the appropriate technical and technological capacity to sustainably improve access to renewable energy and energy efficiency.

CPD 2015-2021:

- Outcome 3: The most vulnerable populations build resilience to climate change and crises
- Output 9: The country has the policy, legal and regulatory framework for the promotion and development of renewable energy

	Objective and Outcome Indicators (no more than a total of 20 indicators)	Baseline	Mid-term Target	End of Project Target
	Indicator 1/GEF Core Indicator 6 Greenhouse gas emissions mitigated (*Units of measure:* metric tons of carbon dioxide equivalent *(tCO2e)*)	*Zero, since the project has not yet started*	*Zero, since the project pilot(s) have not yet been commissioned*	*Direct: 11,951 tCO2e* *Indirect: 9,000 tCO2e*
	Indicator 2/GEF Core Indicator 6.4.: Increase in installed solar PV capacity (MW) and battery storage (MWh)	*Zero, since the project has not yet started*	*Zero, since the project pilot(s) have not yet been commissioned*	*0.449 MW installed PV capacity* *1.137 MWh installed battery storage*
	Indicator 3/GEF Core indicator 11: Number of direct beneficiaries benefitting from energy access via minigrids, disaggregated by gender and by customer segment (residential, social, commercial/productive use), as co-benefit of GEF investment. (number of people; number of connections)	*Zero, since the project has not yet started*	*Zero, since the project pilot(s) have not yet been commissioned*	*3,042 people (of which 50% women)* *-------* *2,990 people (residential)* *16 people (social)* *36 people (commercial/PUE)* *3042 people (total)* *-------* *98 connections (residential)* *4 connections (social)* *12 connections (commercial/PUE)*

				124 connections (total)
	Indicator 4: Number of direct and indirect primary jobs created in the minigrid sector, disaggregated by gender, for mini-grid development, operation and productive use.	*Zero, since the project has not yet started*	▪ *3 Women (10 indirect)* ▪ *5 Men (8 indirect)*	▪ *15 Women (50 indirect)* ▪ *25 Men (30 indirect)*
Project component 1	**Policy and Regulation**			
Project Outcome 1 **Stakeholder ownership in a national minigrid delivery model is advanced, and appropriate policies and regulations are adopted to facilitate investment in renewable minigrids.**	**Indicator 5:** Number of policy derisking instruments[12] for minigrid investments - whose development has been supported by the project - are endorsed/adopted by the national government *(Units of measure: Absolute number of policy derisking instruments)*	*1 GIS study carried out but rather superficial* *Weak knowledge about minigrids at Government level* *Limited regulatory framework for minigrids, especially autonomous ones* *Limited enforcement of tax exemption for renewable energy equipment*	*At least 2 policy derisking instrument(s).* *1 proposal for an appropriate regulatory framework for renewable minigrids made* *1 Enforcement of tax exemption for renewable energy equipment generalized*	*At least 2 policy derisking instrument(s).* *1 proposal for an appropriate regulatory framework for renewable mini-grids finalized, validated and adopted by the Government* *1 Enforcement of tax exemption for renewable energy equipment generalized*
	Indicator 6: A minigrid delivery model to enable minigrid development is endorsed/adopted by the national government through a consultative process involving key stakeholders (e.g. relevant ministries, local authorities, rural populations, private sector, media, etc.) *(Units of measure: binary (1/0))*	*A stand-alone mini-grid delivery model not exhaustively explained, exists (Electricity Code - Article 19)*	*Multi-stakeholder, national dialogue platform on minigrid delivery models established and active.*	*At least one minigrid delivery model is identified and endorsed by the government through the work of the multi-stakeholder platform and dialogue. (1)*
Outputs to achieve Outcome 1	*Output 1.1. An inclusive national dialogue to identify minigrid delivery models is facilitated, clarifying priority interventions for an integrated approach to off-grid electrification* *Output 1.2. A review of the political and regulatory frameworks on the possible minigrid delivery models and suitable incentives is proposed in close collaboration with the National Dialogue Platform members and other development partners* *Output 1.3. Templates of tender documents and contracts for the implementation and operation of minigrids (between community and private operator) are prepared* *Output 1.4. Geospatial, techno-economic modelling of least-cost off-grid renewable electricity technologies (mini-grids, grid expansion, solar home systems)* *Output 1.5. Mini-grid DREI techno-economic analyses carried out to propose most cost-effective basket of policy and financial de-risking instruments and contribute to AMP Flagship Report on Cost Reduction*			

[12] A list of policy derisking instruments can be found in the Derisking Table found in the "DREI: Off-Grid Electrification" (UNDP, 2018) report. As an illustration, example policy derisking instruments can include: off-grid planning/site mapping; mini-grid policies/regulations/tenders; grid service and technical standards; awareness campaigns; technical skill building programs.

	Output 1.6. Pre-feasibility studies conducted for selected mini-grid sites to enhance sector planning and decision-making on a delivery model for minigrid development *Output 1.7. Institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, are strengthened* *Output 1.8. Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labor market in minigrids facilitated*			
Project component 2	**Business Model Innovation with Private Sector**			
Outcome 2 **Innovative business models based on cost reduction operationalized, with strengthened private sector participation in renewable minigrid development**	**Indicator 7:** Minigrid pilots implemented that demonstrate a delivery model, cost-reduction measure(s) and/or productive use of electricity *(binary (1/0))*	*0* *As the project has not started yet*	*The project's detailed design plan (the 'Minigrid Pilot Plan') for advancing the minigrid pilots is developed, and cleared by UNDP and the Project Board. (1)* *Any project tendering process, as applicable, for minigrid pilots is launched. (1)*	*At least 3 renewable mini-networks are developed and operational (1 in Grande Comore, 1 in Mohéli and 1 in Anjouan, respectively) (1)* *A minigrid delivery model to enable minigrid development is endorsed/adopted by the national government through a consultative process involving key stakeholders (e.g. relevant ministries, local authorities, rural populations, private sector, media, etc.) (1)*
	Indicator 8: Capacity of communities, as well as minigrid developers and operators, is enhanced to implement innovative business models and incorporate cost-reduction levers in minigrid projects *(binary (1/0))*	*0* *As the project has not started yet*	*Planned capacity building activities for year 1 and 2 are implemented. (1)* *The capacity of targeted recipients is assessed by survey towards the end of year 2. On a scale of 1 to 5, an average score of at least 2 is achieved.* *- 1 represents a low level of capacity* *- 5 represents a strong capacity to understand relevant issues and apply knowledge and skills to find effective solutions. (1)*	*Planned capacity building activities for year 3 and 4 are implemented. (1)* *The capacity of targeted recipients is assessed by survey towards the end of the project. On a scale of 1 to 5, an average score of at least 4 is achieved.* *- 1 represents a low level of capacity* *- 5 represents a strong capacity to understand relevant issues and apply knowledge and skills to find effective solutions. (1)*
Outputs to achieve Outcome 2	*Output 2.1. Opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, are identified and innovation is promoted* *Output 2.2. Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost reduction in minigrids*			

	Output 2.3. Capacities of private minigrid developers and communities are strengthened *Output 2.4. Group of Private Sector RE Services Providers is formalized, operational and its capacities are strengthened*			
Project component 3	**Scaled-up Financing**			
Outcome 3 **Financial sector actors are ready to invest in a pipeline of renewable minigrids and concessional financial mechanisms are in place to incentivize scaled-up investment.**	**Indicator 9:** Capacity of financial institutions is enhanced through training, knowledge sharing, and/or awareness raising events aimed at increasing the financial sector's capacity to evaluate investments in MINIGRID (*binary (1/0)*)	*Finance institutions are not involved in mini grid development due to lack of training/knowledge-sharing/awareness raising*	*Planned capacity building activities for year 1 and 2 are implemented. (1)* *The capacity of targeted recipients is assessed by survey towards the end of year 2. On a scale of 1 to 5, an average score of at least 2 is achieved.* *- 1 represents a low level of capacity* *- 5 represents a strong capacity to understand relevant issues and apply knowledge and skills to find effective solutions. (1)*	*Planned capacity building activities for year 3 and 4 are implemented. (1)* *The capacity of targeted recipients is assessed by survey towards the end of the project. On a scale of 1 to 5, an average score of at least 4 is achieved.* *- 1 represents a low level of capacity* *- 5 represents a strong capacity to understand relevant issues and apply knowledge and skills to find effective solutions. (1)*
	Indicator 10: Number of government or impact investor-supported financing mechanisms offering concessional finance for renewable minigrids (*binary (1/0)*)	*No concessional financing mechanism for renewable mini-grids exists*	*A Minigrid Funding Facility (MFF) dedicated to minigrids is designed within the framework of the Electricity Code (1)*	*A Minigrid Funding Facility (MFF) dedicated to minigrids is designed within the framework of the Electricity Code (1)*
Outputs to achieve Outcome 3	*Output 3.1. The design and operations of a Minigrid Funding Facility under the Electricity Code is supported* *Output 3.2. General market intelligence study on minigrids prepared and disseminated amongst public officials and finance community* *Output 3.3. Capacities of the national financial sector (including philanthropic) in terms of business models and innovative financial solutions (including digital) in connection with minigrids are strengthened and facilitate access to financing*			
Project component 4	**Digital, Knowledge Management and Monitoring & Evaluation**			
Outcome 4 **Digitalization and data are mainstreamed, across stakeholders, into local minigrid market development. Increased knowledge, awareness and network opportunities in the minigrid market and among stakeholders, including**	**Indicator 11:** A digital strategy for the project is prepared and implemented by the PMU to contribute to project implementation and local minigrid market development (*binary (1/0)*)	*No digital strategy as the project has not yet started*	*The project digital strategy is developed and being implemented. (1)*	*The project digital strategy is implemented. (1)* *Recommendations for rolling out digital solutions for minigrids at national level have been shared with key national stakeholders. (1)*
	Indicator 12: Number of minigrid pilots sharing data on minigrid performance with the regional project and other	*Zero, as the project has not started yet*	*The project's 'digital & data management platform' is procured and operational,*	*100% of the planned minigrid pilots, as identified in the project's Minigrid Pilot Plan, are collecting and sharing*

benefitting from linkages to international good practice	stakeholders following best practices and guidance provided by the AMP Regional Project (*binary (1/0)*)		*ready for data collection from the project's mini-grid pilot(s), and for data sharing with the AMP regional project's digital platform. (1)*	*data with the AMP Regional Project using the project's 'digital & data management platform'. (1)*
Outputs to achieve Outcome 4	*Output 4.1. A Digital Strategy is developed and implemented, including linkages to and following guidance from the regional project* *Output 4.2. Minigrids data management platform implemented to run tenders and manage data from pilots, and to support minigrids scale-up and cost-reduction* *Output 4.3. A Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of all minigrids pilots supported, including GHG emission reductions, is adopted and operationalized based on standardized guidance from the regional project* *Output 4.4. Monitoring and Evaluation (M&E) and Reporting, including (i) Conducting Inception workshop and preparing report, (ii) Ongoing M&E, (iii) Mid-Term Evaluation and (iv) Terminal Evaluation* *Output 4.5. Engage with regional project, including, but not limited to, via (i) participating in Communities of Practice and (ii) capturing and sharing lessons learnt* *Output 4.6. A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels* *Output 4.7. Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project* *Output 4.8. Replication plan (including investment plan) for scaling up rural energy access developed*			

VI. MONITORING AND EVALUATION (M&E) PLAN

The project will provide on an annual basis (and to the extent feasible if requested on an ad-hoc basis) the following M&E information to the AMP regional project staff:

- Standard reporting on all indicators in the results framework for aggregation and reporting to GEFSEC (by the regional project) on the impacts of all participating national 'child' projects for the program as a whole
- Reporting on all additional Key Performance Indicators (KPIs) adopted by the project

The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. The Monitoring Plan included in Annex details the roles, responsibilities, and frequency of monitoring project results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements.

Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF Monitoring Policy and the GEF Evaluation Policy and other relevant GEF policies[13]. The costed M&E plan included below, and the Monitoring plan in Annex, will guide the GEF-specific M&E activities to be undertaken by this project.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Additional GEF monitoring and reporting requirements:

Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
c. Review the results framework and monitoring plan.
d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
g. Plan and schedule Project Board meetings and finalize the first-year annual work plan.
h. Formally launch the Project.

[13] See https://www.thegef.org/gef/policies_guidelines

GEF Project Implementation Report (PIR):
The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the Project Board. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

GEF Core Indicators:
The GEF Core indicators included as Annex will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent ground truthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF website.

Independent Mid-term Review (MTR):
The terms of reference, the review process and the final MTR report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC).

The evaluation will be 'independent, impartial and rigorous. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by 1 November 2025. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

Terminal Evaluation (TE):
An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center.

The evaluation will be 'independent, impartial and rigorous. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by 1 May 2027. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion.

Final Report:

The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[14] and the GEF policy on public involvement[15].

According to the GEF's indicative caps on the total M&E costs, 5% of the GEF & UNDP budget costs can be allocated for M&E when the GEF project grant is up to USD 5 million. As MTR is not mandatory for mid-sized GEF projects, the costs related to the MTR (USD 35k) will be covered by UNDP TRAC sources.

Monitoring and Evaluation Plan and Budget:

This M&E plan and budget provides a breakdown of costs for M&E activities to be led by the Project Management Unit during project implementation. These costs are included in Component 4 of the Results Framework and TBWP. For ease of reporting M&E costs, please include all costs reported in the M&E plan under the one technical component. The oversight and participation of the UNDP Country Office/Regional technical advisors/HQ Units are not included as these are covered by the GEF Fee.

All M&E related activities will be supervised by the Executing Entity. The mid-term evaluation and part of the Terminal Evaluation will be financially covered by UNDP TRAC resources. Both evaluations will be handled independently to ensure a full objectivity

GEF M&E requirements	Indicative costs (US$)	Time frame
Inception Workshop	2,000	Within 60 days of CEO endorsement of this project.
Inception Report	None (part of the PMUs work)	Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework	None (part of the PMUs work)	Annually and at closure
GEF Project Implementation Report (PIR)	None (part of the PMUs work)	Annually typically between June-August
Monitoring of environmental and social risks, gender	None (part of the PMUs work)	On-going.

[14] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

[15] See https://www.thegef.org/gef/policies_guidelines

action plan, and corresponding management plans as relevant		
Supervision missions	None (part of the project management budget)	Annually
Independent Mid-term Review (MTR)	35,000	1 November 2025
Independent Terminal Evaluation (TE)	55,000	1 May 2027
TOTAL indicative COST	92,000	

Linkages to the AMP Regional Project - M&E

Box 6 describes the way in which M&E linkages will be created between this project and the Regional Project:

Box 6 Linkages to the AMP Regional Project - M&E

The project will share M&E information with the AMP Regional Project as follows:

- The project will provide on an annual basis (and to the extent feasible if requested on an ad-hoc basis) the following M&E information to the AMP regional project staff: (a) Standard reporting on all indicators in the results framework for aggregation and reporting to GEF (by the regional project) on the impacts of all participating national projects for the program as a whole; and (b) Reporting on any and all additional Key Performance Indicators (KPIs) adopted by the project under the common M&E framework.

The project will receive support and guidance from the AMP Regional Project for conducting M&E activities as follows:

- **Inception workshop**. The AMP Regional Project PMU will:
    a. Provide support to the project PMU to develop content and materials to facilitate project planning activities to be completed during and after the Inception Workshop. This includes but is not limited to support for the PMU to prepare and/or update 'key project planning instruments' such as the Total Budget and Work Plan, multi-year work plan, Annual Work Plan (AWP), Monitoring Plan, and Procurement Plan, among others.
    b. Participate either remotely or in-person in the Inception Workshop.
    c. Review and provide inputs to the Inception Workshop Report prior to submitting to UNDP.
- **Ongoing project monitoring**. The AMP Regional Project PMU will:
    a. Develop a 'common monitoring and evaluation (M&E) framework' against which GHG emission reductions and broader SDG impacts and program objectives can be measured, and work closely with national child projects to ensure operationalization and harmonization.
    b. Provide support to the project PMU for updating 'key project planning instruments' at least on an annual basis as required to comply with UNDP project monitoring, quality assurance, and risk management requirements, and ensure adequate project planning and adaptive management. This may entail developing common templates for 'key project planning instruments'.
    c. Review and provide feedback on reports submitted by the project PMU seeking to continuously improve the quality and ease of reporting by national projects.
    d. Aggregate M&E data from all national projects, including Results Framework and all additional Key Performance Indicators (KPIs) adopted by the project under the common M&E framework, and report back to GEF at the program level.
- **Evaluations (MTR and TE)**. The AMP Regional Project PMU will:
    a. Make available to national projects standardized terms of reference for MTR and TE as well as a roster of vetted evaluation consultants.
    b. Review and provide feedback on terms of reference and draft evaluation reports shared by the project PMU to ensure project-level evaluation will be undertaken in compliance with UNDP requirements.
    c. Make themselves available for interviews and consultation in the context of national project mid-term and terminal evaluations.

VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Roles and responsibilities of the project's governance mechanism:

Implementing Partner:

The Implementing Partner for this project originally, at PIF, was the Ministry of Environment, Agriculture, Fisheries and Energy (MEAFE). On April 3rd, 2020 (after the PIF approval in December 2019), a Decree changed some ministries' scope including the MEAFE. As such, Energy is, since part of the Ministry of Energy, Water and Hydrocarbons . For this project, the Minister appointed the DGEME - Direction Générale de l'Énergie, des Mines et de l'Eau i.e., the Directorate General for Energy, Mining and Water located at the Ministry of Energy, Water and Hydrocarbons as the implementing partner.

An HACT (Harmonized Approach to Cash Transfers) assessment has been provided by an independent entity in June 2020 on the DGEME. The overall evaluation rated the risks as **significant** i.e., between high and moderate. A significant risk indicates an underdeveloped financial management system or control framework with a significant likelihood of negative impact on the Partner's ability to execute the programme in accordance with the work plan. In the assessment, there are 3 areas with a high risk:

- Project management capacity (lack of standardized project management policies and procedures shared with all employees, M&E procedures, suitable data collection for monitoring purposes, and do not seem to have applied the previous recommendations made in 2014)
- Organizational structure and staff (no HR procedures manual, existence of an organizational chart but no definition of roles & responsibilities of each job, accounting is taken care by only one person without clear roles and responsibilities, no staff training plans, apparently recruitment is not clearly compliant with transparency and competitivity principals
- Fixed assets and inventories (lack of assets protection mechanism, no fixed assets register, no insurance on fixed assets and inventories, lack of frequent inventory process)

In light of this High Risk rating, and in line with UNDP's Policy and Operations Policies and Procedures (POPP) to provide Full Country Office Support to National Implementation Modality (NIM), the Government of the Union of Comoros/ GEF OFP and DGEME has requested UNDP to provide execution support for the following services for this project. The arrangement was also approved by GEF Secretariat:

- Financial management: payment processing, issuing checks, creating vendor forms and managing vendor profiles;
- Staff selection and recruitment and recurring personnel management services;
- Recruitment of national and international consultants;
- Procurement of goods and services;
- Administration and logistics;
- Information and technology;
- Travel management.

A Letter of Agreement (LOA) has been signed between the Government and UNDP to confirm the above arrangement. The capacities of DGEME will be HACT micro-assessed in due course during project implementation.

The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

The Implementing Partner is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project

reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.

- Risk management as outlined in this Project Document.
- Procurement of goods and services, including human resources.
- Financial management, including overseeing financial expenditures against project budgets.
- Approving and signing the multiyear workplan;
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures.

Responsible Parties:
N.a.

Project stakeholders and target groups:
The participatory and inclusive approach adopted by the project since PPG is part of its DNA. Extensive and numerous stakeholder consultations, one-on-one, in groups and at workshops (inception and validation) were carried out at PPG phase and will be pursued during project implementation to ensure ownership and sustainability of the project after closure. Comments, questions, requests and commitments are stimulated at every project stakeholder.

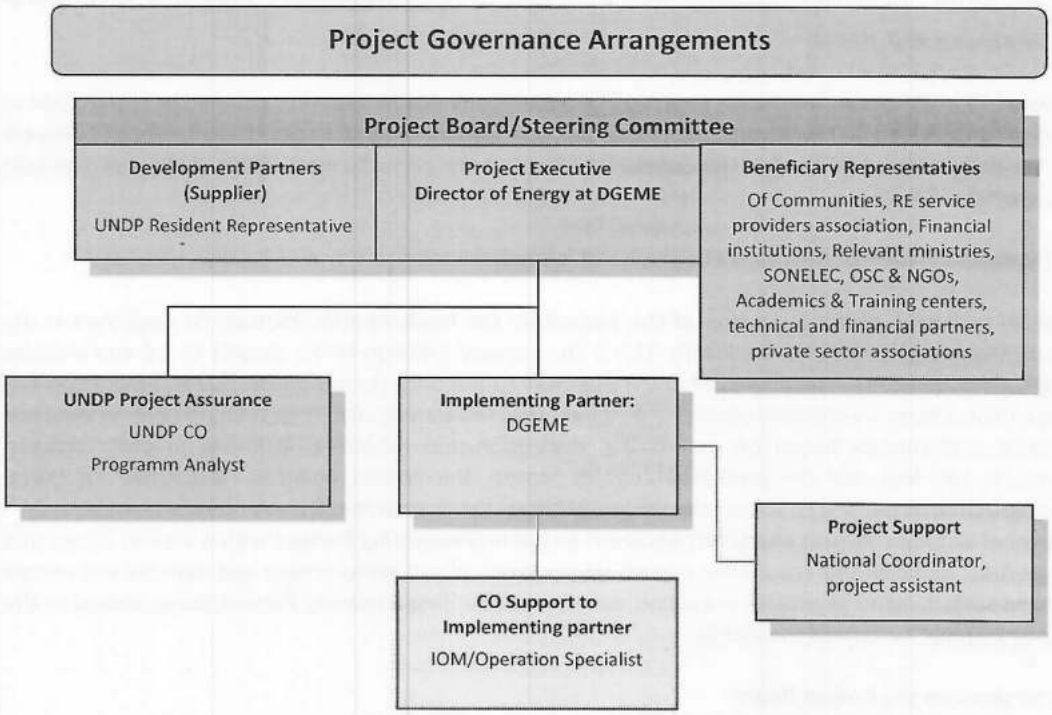
During PPG phase, relevant stakeholders were asked to provide inputs and comments on the project and their specific role in contributing to overcome the development challenge together. This largely contributed to nourishing the project document and adapting it to local realities and needs as much as possible. At validation workshop and after sharing the final draft of the project document and annexes, feedback was provided by stakeholders and integrated into the final version of the document.

During project implementation, stakeholders and target groups will continue to actively contribute and influence the decision making for the project. Different media will be used to do so:

- Inception workshop at project launch gathering all key stakeholders to present the project and the inception report to facilitate project implementation. Participants will be invited to share their insights and updates to adapt the workplan. The official project launch and main outcomes of the inception workshop will be broadcasted to a larger audience as part of the awareness raising campaign (Component 4).
- The National dialogue platform (Component 1) is a powerful tool to support exchanges between project stakeholders and with the PMU on various topics (especially through sub-committees). This multi-stakeholder media is critical to effectively and efficiently contribute to the development of a nascent minigrids market in Comoros. Sub-committees will be created to further facilitate implementation and decision making.
- The Project Board/Steering Committee is the ultimate platform for decision making including beneficiary representatives, the project executive and the development partner (see below). Topics such as workplan, activities and results will be debated, decisions taken together, and necessary corrective measures proposed.
- Continuous stakeholder interactions and consultations through meetings, workshops, trainings, awareness raising campaigns, etc. will also be used to facilitate decision making based on stakeholders' insights.

UNDP: UNDP is accountable to the GEF for the implementation of this project. This includes overseeing project execution undertaken by the Implementing Partner to ensure that the project is being carried out in accordance with UNDP and GEF policies and procedures and the standards and provisions outlined in the Delegation of Authority (DOA) letter for this project. The UNDP GEF Executive Coordinator, in consultation with UNDP Bureaus and the Implementing Partner, retains the right to revoke the project DOA, suspend or cancel this GEF project. UNDP is responsible for the Project Assurance function in the project governance structure and presents to the Project Board and attends Project Board meetings as a non-voting member.

Project organization structure:



The UNDP Resident Representative assumes full responsibility and accountability for oversight and quality assurance of this Project and ensures its timely implementation in compliance with the GEF-specific requirements and UNDP's Programme and Operations Policies and Procedures (POPP), its Financial Regulations and Rules and Internal Control Framework. A representative of the UNDP Country Office will assume the assurance role and will present assurance findings to the Project Board, and therefore attends Project Board meetings as a non-voting member.

UNDP project support: The Implementing Partner and GEF OFP have requested UNDP to provide support services in the amount of USD$ 90,273.8 for the full duration of the project. The execution support services have been set out in detail and agreed between UNDP Country Office and the Implementing Partner in a Letter of Agreement (LOA). This LOA is attached to this Project Document.

To ensure the strict independence required by the GEF and in accordance with the UNDP Internal Control Framework, these execution services will be delivered independent from the GEF-specific oversight and quality assurance services.

As noted in the Minimum Fiduciary Standards for GEF Partner Agencies, in cases where a GEF Partner Agency (i.e. UNDP) carries out both implementation oversight and execution of a project, the GEF Partner Agency (i.e. UNDP) must separate its project implementation oversight and execution duties, and describe in the relevant project document a: 1) Satisfactory institutional arrangement for the separation of implementation oversight and executing functions in different departments of the GEF Partner Agency; and 2) Clear lines of responsibility, reporting and accountability within the GEF Partner Agency between the project implementation oversight and execution functions.

UNDP's implementation oversight role in the project – as represented in the project board and via the project assurance function – is performed by Mouslim Saadi, Program Analyst . UNDP's execution role in the project is performed by Ali Issmail, Operations Specialist who will report to John Ranaivoson, Operation International Manager.

a) **Project Board:** All UNDP projects must be governed by a multi-stakeholder board or committee established to review performance based on monitoring and evaluation, and implementation issues to ensure quality delivery of results. The Project Board (also called the Project Steering Committee) is the most senior, dedicated oversight body for a project.

The two main (mandatory) roles of the project board are as follows:

1) **High-level oversight of the execution of the project by the Implementing Partner** (as explained in the "Provide Oversight" section of the POPP). This is the primary function of the project board and includes annual (and as-needed) assessments of any major risks to the project, and decisions/agreements on any management actions or remedial measures to address them effectively. The Project Board reviews evidence of project performance based on monitoring, evaluation and reporting, including progress reports, evaluations, risk logs and the combined delivery report. The Project Board is responsible for taking corrective action as needed to ensure the project achieves the desired results.
2) **Approval of strategic project execution decisions of the Implementing Partner** with a view to assess and manage risks, monitor and ensure the overall achievement of projected results and impacts and ensure long term sustainability of project execution decisions of the Implementing Partner (as explained in the "Manage Change" section of the POPP).

Requirements to serve on the Project Board:

- ✓ Agree to the Terms of Reference of the Board and the rules on protocols, quorum and minuting.
- ✓ Meet annually; at least once.
- ✓ Disclose any conflict of interest in performing the functions of a Project Board member and take all measures to avoid any real or perceived conflicts of interest. This disclosure must be documented and kept on record by UNDP.
- ✓ Discharge the functions of the Project Board in accordance with UNDP policies and procedures.
- ✓ Ensure highest levels of transparency and ensure Project Board meeting minutes are recorded and shared with project stakeholders.

Responsibilities of the Project Board:

- ✓ Consensus decision making:
  - The project board provides overall overall guidance and direction to the project, ensuring it remains within any specified constraints, and providing overall oversight of the project implementation.
  - Review project performance based on monitoring, evaluation and reporting, including progress reports, risk logs and the combined delivery report;
  - The project board is responsible for making management decisions by consensus.
  - In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.
  - In case consensus cannot be reached within the Board, the UNDP representative on the board will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.
- ✓ Oversee project execution:
  - Agree on project manager's tolerances as required, within the parameters outlined in the project document, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded.

- Appraise annual work plans prepared by the Implementing Partner for the Project; review combined delivery reports prior to certification by the implementing partner.
- Address any high-level project issues as raised by the project manager and project assurance;
- Advise on major and minor amendments to the project within the parameters set by UNDP and the donor and refer such proposed major and minor amendments to the UNDP BPPS Nature, Climate and Energy Executive Coordinator (and the GEF, as required by GEF policies);
- Provide high-level direction and recommendations to the project management unit to ensure that the agreed deliverables are produced satisfactorily and according to plans.
- Track and monitor co-financed activities and realisation of co-financing amounts of this project.
- Approve the Inception Report, GEF annual project implementation reports, mid-term review and terminal evaluation reports.
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project.

✓ Risk Management:

- Provide guidance on evolving or materialized project risks and agree on possible mitigation and management actions to address specific risks.
- Review and update the project risk register and associated management plans based on the information prepared by the Implementing Partner. This includes risks related that can be directly managed by this project, as well as contextual risks that may affect project delivery or continued UNDP compliance and reputation but are outside of the control of the project. For example, social and environmental risks associated with co-financed activities or activities taking place in the project's area of influence that have implications for the project.
- Address project-level grievances.

✓ Coordination:

- Ensure coordination between various donor and government-funded projects and programmes.
- Ensure coordination with various government agencies and their participation in project activities.

Composition of the Project Board: The composition of the Project Board must include individuals assigned to the following three roles:

1. **Project Executive:** This is an individual who represents ownership of the project and chairs (or co-chairs) the Project Board. The Executive usually is the senior national counterpart for nationally implemented projects (typically from the same entity as the Implementing Partner). In exceptional cases, two individuals from different entities can co-share this role and/or co-chair the Project Board. If the project executive co-chairs the project board with representatives of another category, it typically does so with a development partner representative. The Project Executive is Director General of the Directorate General for Energy, Mining and Water (DGEME) located at the Ministry in charge of Energy.

2. **Beneficiary Representative(s):** Individuals or groups representing the interests of those groups of stakeholders who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often representatives from civil society, industry associations, or other government entities benefiting from the project can fulfil this role. There can be multiple beneficiary representatives in a Project Board. The Beneficiary representatives are:
   a. A representative of the pilot communities (possibly via an association in the community and on a rotational basis)
   b. Renewable energy service providers association on
   c. Association of consumers
   d. Ministry of Economy, Investments and Energy
   e. Ministry of Agriculture
   f. Ministry of Health
   g. Ministry of Education
   h. General Planning Commission

i. Gender Commission
j. Representative of NGOs &CSOs
k. Representative of Financial Institutions
l. Telco operators (2)
m. Representative of technical and financial partners

3. **Development Partner(s):** Individuals or groups representing the interests of the parties concerned that provide funding, strategic guidance and/or technical expertise to the project. The Development Partner(s) is: Mr. Snehal Soneji, UNDP Resident Representative

b) **Project Assurance:** Project assurance is the responsibility of each project board member; however, UNDP has a distinct assurance role for all UNDP projects in carrying out objective and independent project oversight and monitoring functions. UNDP performs quality assurance and supports the Project Board (and Project Management Unit) by carrying out objective and independent project oversight and monitoring functions, including compliance with the risk management and social and environmental standards of UNDP. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. Project assurance is totally independent of project execution.

A designated representative of UNDP playing the project assurance role is expected to attend all board meetings and support board processes as a non-voting representative. It should be noted that while in certain cases UNDP's project assurance role across the project may encompass activities happening at several levels (e.g. global, regional), at least one UNDP representative playing that function must, as part of their duties, specifically attend board meeting and provide board members with the required documentation required to perform their duties. The UNDP representative playing the main project assurance function is: Mouslim Saadi, Program Analyst

c) **Project Management – Execution of the Project:** The Project Manager (PM) (also called project coordinator) is the senior most representative of the Project Management Unit (PMU) and is responsible for the overall day-to-day management of the project on behalf of the Implementing Partner, including the mobilization of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The project manager typically presents key deliverables and documents to the board for their review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk registers.

Roles and responsibilities of the PMU members should be detailed in the respective Annex noting that the PMU cannot be located in the UNDP Country Office. A designated representative of the PMU is expected to attend all board meetings and support board processes as a non-voting representative.

The primary PMU representative attending board meetings is: Ahmed Karim Farida, project National Coordinator

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MORONI

Le Directeur

VIII. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is *USD 43,429,466.* This is financed through a GEF grant of USD 1,269,863 administered by UNDP, USD 400,000 (TRAC) in cash co-financing to be administered by UNDP and additional support of 41,759,603, as the GEF Implementing Agency, is responsible for the oversight of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Co-financing: The actual realization of project co-financing amounts will be monitored by the UNDP Country Office and the PMU on an annual basis in the GEF PIF and will be reported to the GEF during the mid-term review and terminal evaluation process as follows:

Co-financing source	Co-financing type	Name of Co-financier	Investment Mobilized	Co-financing amount
GEF Agency	Grant	UNDP / TRAC resources	Investment mobilized	400,000
Recipient Country Government	In-kind	MoEIE/DGEME	recurrent expenditure	42,326
Recipient Country Government	In-kind	SONELEC	recurrent expenditure	1,036,736
Recipient Country Government'	In-kind	ANADEN	recurrent expenditure	39,636
Donor Agency	Grant	European Union (grant)	Investment mobilized	2,712,695
Donor Agency	Grant	African Development Bank/PASEC (grant)	Investment mobilized	1,328,210
Donor Agency	Grant	World Bank/Comorsol (grant)	Investment mobilized	36,600,000
Total				42,159,603

Co-financing source	Co-financing type	Co-financing amount	Planned Co-financing Activities/Outputs	Risks	Risk Mitigation Measures
SONELEC	In kind	$1,036,736	Component 2: • Distribution work on the minigrid	• Lack of financial means for materials purchasing	• Any equipment purchase must be covered by the project or other co-

Co-financing source	Co-financing type	Co-financing amount	Planned Co-financing Activities/Outputs	Risks	Risk Mitigation Measures
			• Provision of employees for the implementation of the AMP project • Co-investment in the UE-funded solar farm project in Mohéli PMC: • Support to PMC related costs	• Delays in works' execution	financiers, and funds must be made available for post-project maintenance • Strengthening activities monitoring and quality assurance through external support
European Union	Grant	$2,712,695	Component 2: • Investment in a looping for the Mohéli power network • Injection of solar energy into the national grid	• Significant delays in project and activity implementation • Heavy administrative burden on SONELEC's side via the MoEIE and on EU side	• Better follow-up of the donor
African Development Bank/PASEC	Grant	$1,328,210	Component 1: • Power legal framework adaptation Component 2: • Rehabilitation of the existing power network Component 4: • Training module on renewable energy and project management (Tractabel) PMC: • Support to PMC related costs	• Duration of activities' implementation • Poor project coordination	• Regular monitoring and exchange with headquarters to ensure that activities are in line with expected timeframe and deadlines
UNDP (TRAC resources)	Cash	$400,000	Component 2: • CAPEX investment for pilot sites • Support to the private sector with the innovation competition with ANADEN Component 4: • Support to mid-term and final evaluations PMC: • Support to PMC related costs	• Not sufficient funds to support many promising innovative private sector initiatives	• Additional fund mobilization efforts if necessary, to support innovative business models implementation
DGEME	In kind	$42,326	PMC: • Support to PMC related costs	• No sufficient space at the Ministry for the PMU office	
ANADEN – National Agency for Digital Development	In-kind	$39,636	Component 2:	• Smartphone usage/penetration in rural areas and especially in the 3	• Start-Up innovation contacts under Activity 2.1.2

Co-financing source	Co-financing type	Co-financing amount	Planned Co-financing Activities/Outputs	Risks	Risk Mitigation Measures
			• Supporting the introduction of digital solutions in rural areas and for productive use	pilot sites (especially remote village of Ouzini) • Lack of familiarity with digital solutions	• Awareness raising and capacity building efforts of communities especially under Component 2
ComorSol /World Bank	Grant	$36,600,000	Component 2: • Installation of a solar plant of 9MW in the island of Grande Comore, implementation of a storage capacity, grid modernization Component 4: • Technical assistance and capacity building in the energy sector PMC: • Support to PMC related costs	• Negotiation issues between largest project implementer (Tractabel) and World Bank	• Compromising and closing the negotiations with the largest implementer or an alternative

Implementing Partner (IP) request for UNDP to provide country support services The Implementing Partner and GEF OFP have requested UNDP to provide support services in the amount of *USD* 90,273.8(as part of the UNDP TRAC resources for the project) for the full duration of the project, and the GEF has been informed. The GEF execution **support letter** (signed by the GEF OFP) detailing these support services is included in Annex. To ensure the strict independence required by the GEF and in accordance with the UNDP Internal Control Framework, these execution services will be delivered independent from the GEF-specific oversight and quality assurance services (i.e. not done by same person to avoid conflict of interest). See latest guidance available from BPPS NCE-VF team.

Budget Revision and Tolerance: As per UNDP POPP, the project board may agree with the project manager on a tolerance level for each detailed plan under the overall multi-year workplan. The agreed tolerance should be written in the project document or approved project board meeting minutes. It should normally not exceed 10 percent of the agreed annual budget at the activity level, but within the overall approved multi-year workplan at the activity level. Within the agreed tolerances, the project manager can operate without intervention from the project board. Restrictions apply as follows:

Should the following deviations occur, the Project Manager/IP through UNDP Country Office will seek the approval of the BPPS/NCE-VF team to ensure accurate reporting to the GEF. It is **strongly encouraged** to maintain the expenditures within the approved budget at the budgetary account and at the component level:

a) Budget reallocations must prove that the suggested changes in the budget will not lead to material changes in the results to be achieved by the project. A strong justification is required and will be approved on an exceptional basis. Budget re-allocations among the components (including PMC) of the approved Total Budget and Work Plans (TBWP) that represent a value greater than 10% of the total GEF grant.
b) Introduction of new outputs/activities (i.e. budget items) that were not part of the agreed project document and TBWP that represent a value greater than 5% of the total GEF grant. The new budget items must be eligible as per the GEF and UNDP policies.
c) Project management cost (PMC): budget under PMC component is capped and cannot be increased.

UNDP is not in a position to increase the total budget above the amount approved by the donor, therefore any over-expenditure would have to be absorbed from non-GEF resources by the Implementing Partner (GEF Executing Entity)

Project extensions: The UNDP-BPPS-NCE team Executive Coordinator must approve all requests for extension of the Project Completion Date and for other milestone extensions with hard deadlines. All extensions impose additional time and cost burdens at all levels and the GEF project budget cannot be increased beyond its originally approved amount. A single extension may be granted on an exceptional basis and subject to the conditions and maximum durations set out in the UNDP POPP. The project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs shall be covered by non-GEF resources; the additional UNDP oversight costs during the extension period must be covered by non-GEF resources, in accordance with UNDP's policy as set out in UNDP POPP.

For any extension request, UNDP CO and IP will consult and jointly present a clear plan indicating how and from which specific sources the additional oversight costs that will be incurred by UNDP will be covered during the extended period. The BPPS-NCE Executive Coordinator will consult the Regional Bureaux (RBX) and may reject the extension request if no (external co-financing by the IP or internal UNDP CO resources) can be identified.

All extension requests, along with all supporting documentation, shall be submitted by the IP to the UNDP CO in line with the requirements and within the deadlines set out in the UNDP SOPs and policies in UNDP POPP.

Audit: the project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop. If the Implementing Partner is an UN Agency, the project will be audited according to that Agencies applicable audit policies.

Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project, however **must be done before the operational closure date**. In all cases of transfer, a transfer document must be prepared and kept on file[16]. The transfer should be done before Project Management Unit complete their assignments.

Completion Date: The project completion date is the date of Project Document Signature plus project duration. This date can only be extended through a formal extension request. Prior to completion date, all UNDP-financed inputs must be provided and related activities for the Project completed. No activities, except for the final clearance of the Terminal Evaluation Report and the corresponding management response and the end-of-project review Project Board Meeting should take place after the Completion Date.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

- **Operational Closure**: **Operational closure must happen within 9 months from project completion date.** Prior to operational closure, the Terminal Evaluation must have been submitted and the corresponding TE management response and the end-of-project review Project Board meeting must have been completed. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. Before Operational Closure, the project must have completed the transfer or disposal of any equipment that is still the property of UNDP.
- **Financial Closure: Financial closure must happen within 6 months of operational closure or after the date of cancellation.** The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).
  Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to BPPS/NCE for confirmation before the project will be financially closed in Quantum by the UNDP Country Office.

Cancellation and Suspension: All projects considering going through cancellation or suspension must follow UNDP and GEF requirements. Guidance can be found in the UNDP POPP (SOPs for management actions of Vertical Fund projects escalated to the Executive Coordinator and Guidance for GEF project revisions).

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/NCE team Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF. Unspent project balance is not permitted to be transferred to any other projects.

[16] See https://popp.undp.org/ https://popp-prod.acquia.undp.org/policy-page/close-and-transition

IX. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Quantum Business Unit	UNDP-COMOROS		
Quantum Project ID:	00126402	Quantum Project Title:	Africa Minigrid Program
Quantum Award ID:	00126402.2	Quantum Award Title:	Africa Minigrid Program
UNDP-GEF PIMS No.	6469		
Implementing Partner	DGEME - Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water		

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party/[1] , IP, or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	See Budget Note:
Component 1: Policy and Regulation	UNDP	62000	GEF	71200	International consultants	53,750	28,550	8,950	1,750	93,000	1
				71300	Local Consultants	16,125	12,375	5,100	1,500	35,100	2
				71500	UNV	3,000	-	-	-	3,000	3
				71600	Travel	25,029	19,129	4,688	4,686	53,532	4
				72100	Contractual Services - companies	87,000	10,000	-	-	97,000	5
				72300	Materials & Goods	5,000	10,000	-	-	15,000	6
				72500	Supplies	2,000	2,000	-	-	4,000	7
				74200	Audio Visual & Print Prod Costs	900	900	-	-	1,800	8
				75700	Training, workshop and conferences	17,250	17,750	4,500	3,500	43,000	10
				sub-total GEF		210,054	100,704	23,238	11,436	345,432	
				Total Outcome 1		210,054	100,704	23,238	11,436	345,432	
Component 2: Project and Business Model Innovation with	UNDP	62000	GEF	71200	International consultants	27,000	-	-	-	27,000	11
				71300	Local Consultants	17,000	2,160	2,160	2,160	23,480	12

Private Sector Engagement				71500	UNV	6,000	-	-	-	6,000	13
				71600	Travel	14,025	2,625	2,625	2,625	21,900	14
				72100	Contractual Services - companies	44,750	13,733	13,733	21,733	93,949	15
				72300	Materials & Goods	124,238	145,487	-	-	269,725	16
				72500	Supplies	750	750	750	750	3,000	17
				74200	Audio Visual & Print Prod Costs	500	500	500	500	2,000	18
				71400	Contractual Services - Individuals	10,000	-	-	-	10,000	19
				75700	Training, workshop and conferences	8,750	1,250	1,250	1,251	12,501	20
				72800	IT Equipment	6,000	-	-	-	6,000	21
				sub-total GEF Outcome 2		**259,013**	**166,505**	**21,018**	**29,019**	**475,555**	
		4000	UNDP	72300	Materials & Goods	80,172	173,059.2			253,231.2	22
				sub-total UNDP Outcome 2		**80,172**	**173,059.2**	**0**	**0**	**253,231.2**	
				Total Outcome 2		**339,185**	**339,564.2**	**21,018**	**29,019**	**728,786.2**	
Component 3: Innovative Financing	UNDP	62000	GEF	71200	International consultants	6,250	3,125	3,125	-	12,500	23
				71600	Travel	4,428	2,214	2,214	-	8,856	24
				72100	Contractual Services - companies	29,250	29,750	-	-	59,000	25
				75700	Training, workshop and conferences	9,000	3,375	1,125	-	13,500	26
				sub-total GEF		**48,928**	**38,464**	**6,464**		**93,856**	
				Total Outcome 3		**48,928**	**38,464**	**6,464**	**0**	**93,856**	
Component 4: Knowledge Management and Monitoring and Evaluation	UNDP	62000	GEF	71200	International consultants	-	7,200	-		7,200	27
				71300	Local Consultants	4,800	7,800	4,800	9,300	26,700	28
				71600	Travel	9,073	7,075	7,075	9,185	32,408	29
				72100	Contractual Services - companies	48,062	8,650	2,650	7,650	67,012	30

				74200	Audio Visual & Print Prod Costs	2,000	2,000	2,000	2,000	8,000	31
				75700	Training, workshop and conferences	8,300	-	-	3,000	11,300	32
				sub-total GEF_ Digital KM		72,235	32,725	16,525	31,135	152,620	
				75700	Training, workshop and conferences	2,000	-	-		2,000	33
				71200	International consultants	-	20,000	-	40,000	60,000	34
				71300	Local Consultants	-	15,000	-	15,000	30,000	35
				sub-total GEF _ M&E		2,000	35,000		55,000	92,000	
				Total Component 4		74,235	67,725	16,525	86,135	244,620	
Project Management Unit	UNDP	62000	GEF	71300	Local Consultants	22,600	22,600	22,600	22,600	90,400	36
				72800	IT Equipment	6,000	-	-	-	6,000	37
				74100	Professional Services (Audit)	3,500	3,500	3,500	3,500	14,000	38
				sub-total PMU GEF		32,100	26,100	26,100	26,100	110,400	
		4000	UNDP	71300	Local Consultants	13,408.25	13,408.25	13,408.25	13,408.25	53,633	39
				74598	Direct Project Costs	22,568.45	22,568.45	22,568.45	22,568.45	90,273.8	40
				74500	Miscellaneous expenses	237	875	875	875	2,862	9
				sub-total PMU UNDP		36,213.7	36,851.7	36,851.7	36,851.7	146,768.8	
				Total Project Management		68,313.7	62,951.7	62,951.7	62,951.7	257,168.8	
				Sub-Total GEF Total Project		624,330	399,498	93,345	152,690	1,269,863	
				Sub-Total UNDP Total Project		116,385.7	209,910.9	36,851.7	36,851.7	400,000	
				PROJECT TOTAL		723,147	662,114	112,628	171,973	1,669,863	

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Summary of Funds:

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Total
GEF grant administered by UNDP	$ 638,830	$ 373,298	$ 95,345	$ 162,390	$ 1,269,863
UNDP	$ 116,385.7	$209,910.9	36,851.7	36,851.7	$ 400,000
DGEME	$10,582	$10,582	$10,581	$10,581	$42,326
ANADEN	$9,909	$9,909	$9,909	$9,909	$39,636
SONELEC	$1,009,823	$14,613	$6,150	$6,150	$1,036,736
PASEC/BAD	$1,013,210	$105,000	$105,000	$105,000	$1,328,210
UNION EUROPEENNE	$2,712,695				$2,712,695
COMORSOL/WORLD BANK	$16,300,000	$16,300,000	$2,000,000	$2,000,000	$36,600,000
TOTAL	21,811,434.7	17,023,312.9	2,263,836.7	2,330,881.7	$43,429,466

Budget note number	Comments: Budget note should be output based rather than input based. Even for individual consultants' outputs of the consultants must be clear. Include cost breakdown and calculation basis (e.g. daily fee and number of days/weeks, unit cost and number), as well as a total amount for the budget line.
1	1.1. Senegalese delegation of 2 consultants paid at USD 500/day for 5+2travel days to provide training and advisory for the national dialogue platform / 2 consultants * 7 days * $500 = $7000 1.2. 15 days for international consultant work for the drafting of minigrid paragraphs in the Electricity Code and adopting a "regulation by contract" in the meantime, as well as 5 days to adapt and enforce customs procedures and import requirements / 20 days * $600 = $12,000 1.3. 20 days to develop a procedure and templates for tenders and contract templates for minigrid implementation and operation / 20 days * $600 = $12,000 1.4. GIS analysis: 28 days; Interconnection potential: 12 days; Minigrid tariffication analysis: 20 days / (28+12+20) days * $600 = $36,000 1.7. International consultants for knowledge gap analysis, developing comprehensive modular training materials, conducting training and ToT - 40 days / 40 days * $ 500= $20,000 1.8. 12 days of Training facilitator/Capacity building specialist to train the trainers of relevant institutions in Comoros / 12 days * $500 = $6,000
2	1.1. National consultant to facilitate National Dialogue Platform meetings (incl. meeting organization) / $300 per meeting x 20 meetings over 4 years = $6,000 1.2. 20 days for international consultant work for the drafting of minigrid paragraphs in the Electricity Code and adopting a "regulation by contract" in the meantime, as well as 10 days to adapt and enforce customs procedures and import requirements / 25 days * $300= $7,500 1.3. GIS analysis: 20 days; Interconnection potential: 12 days / (20+12) days * $300 = $9,600 1.7. 60 days national consultant's knowledge gap analysis, developing comprehensive modular training materials, conducting training / 60 days * $200 = $12,000
3	1.3. 15 days for a UNV to support the international consultant in developing relevant tender documents and contracts / 15 days * $200 = $3,000

Budget note number	**Comments:** Budget note should be output based rather than input based. Even for individual consultants' outputs of the consultants must be clear. Include cost breakdown and calculation basis (e.g. daily fee and number of days/weeks, unit cost and number), as well as a total amount for the budget line.
4	1.1. 1.1. One Exchange visit with Senegal's successful national dialogue platform $4,380. 1.2. 1.1. Local travels for National dialogue members to participate to the meeting $14,370. 1.3. 1.2. International travel costs for a total of 14 days over 1 mission to conduct stakeholder consultations and work on the review of the Electricity Code $5,332. 1.4. 1.3. 7 days of mission from international expert incl $3,666. 1.5. 1.4. 2 international consultants - 1 mission to Comoros each for GIS analysis and interconnection potential study $8,284. 1.6. 1.4. GIS analysis on the ground data collection local travel $2,110. 1.7. 1.7. 2 missions to Comoros - 1 for initial phase and ToT, 1 for ToT on Year 2 for institutional capacities $7,808. 1.8. 1.7. 2 return tickets to Anjouan and Mohéli to conduct training $1,678. 1.8. 8 days missions once on year 1 and once on year 2 for the international consultant specialist to train the trainers (ToT) of relevant institutions in Comoros $5,904.
5	1.5. DREI Analysis on Year 1 / $50,000; 4 roundtable workshops with key stakeholders / 4*$2,500= $10,000 ; total = $60,000 1.6. Pre-feasibility studies (demand assessment and technical aspects incl. demand assessment at each site, so in-house surveys, focus groups, identification of productive end-users, topographical survey) for each of the 3 pilot sites / $5,000 * 3 sites = $15,000; and 1 social & environmental impact study for the 3 pilots sites combined/$6,000 ; total = $21,000 1.8. Local company to conduct study on existing training offer and relevant gaps, as well as recommendations to overcome then / $16,000
6	1.4. GIS study: software, licenses, etc. / $5,000 1.7. Institutional capacities materials & goods -$5K yearly for 2 years / $10,000
7	1.7. Supplies related to training / $4,000
8	1.7. Printing training materials costs / $1,000 1.8. Printing training materials costs / $800
9	1.1. Miscellaneous Expenses/$2,862
10	1.1. 1.1. Various workshops for National Dialogue Platform members including workshop with Senegalese delegation for 2 days / $6,375 1.2. 1.2. Stakeholder validation workshop for the regulatory framework and a workshop on customs procedures etc. / $5,375 1.3. 1.3. Validation workshop related to tender documents and management & operation contract between communities and private sector player / $2,375 1.4. 1.4. 1 restitution workshop half day per study (DREI, GIS Analysis, Interconnexion potential) / $4,375 1.5. 1.5. 4 roundtable workshops to present the full DREI analysis to various key stakeholders in Year 2 / $6,375 1.6. 1.7. 4 trainings over 2 years incl. 2 ToT sessions in Moroni, and 1 training in Mohéli and 1 in Anjouan – for institutional capacity building / $10,375 1.7. 1.7. 4 trainings including venues for members of the National Dialogue Platform / $5,375 1.8. 2 ToT to trainers of relevant academic institutions and vocational training centers in Comoros / $2,375
11	2.1. 20 days Analysis on key national rural economic outputs and their value chains, and social activities / 20 days * $600 = $12,000 2.3. Pedagogical engineering, Training and ToT on business models, cost-reduction levers, new technologies depending on the topics, tariff negotiation, understanding of anchor loads, remote monitoring, etc. all services - several modules; and knowledge transfer / 30 days *$500 = $15,000
12	2.1. 30 days Analysis on key national rural economic outputs and their value chains, and social activities incl. field visits on key value chains and stakeholder consultations / 30 days * $300 = $9,000

Budget note number	**Comments:** Budget note should be output based rather than input based. Even for individual consultants' outputs of the consultants must be clear. Include cost breakdown and calculation basis (e.g. daily fee and number of days/weeks, unit cost and number), as well as a total amount for the budget line.
	2.3. Pedagogical engineering, Training and ToT on business models, cost-reduction levers, new technologies depending on the topics, tariff negotiation, understanding of anchor loads, remote monitoring, etc. all services - several modules; and knowledge transfer / 40 days *$200 = $8,000 2.4. An assistant (or similar) in charge of the bureau and association, updates the website, organizes meetings etc. / part time for 3 years / 36 months * $180 = $6,480
13	2.1. Support to organize innovation start-up contest around rural electrification through minigrids / 30 days * $200 = $6,000
14	2.1. 1 mission to Comoros for the analysis on opportunities to boost economic and social activities through minigrid power access $4,142 2.1. 4 return tickets (international & local consultant) to Anjouan and Mohéli for field visits and stakeholder consultations $3,116 2.3. 1 mission to Comoros for ToT to build/strengthen the capacities of private minigrid developers and communities in pilot sites $4,142 2.4. Travel costs for relevant conferences / $10,500
15	2.1. ANADEN to organize and communicate on the innovation start-up contest (incl. venue, etc.) / $33,000 2.2. installation and annual offshore support service, training of local partners, communities, rural electricians at the 3 sites / $56,949 over 4 years 2.4. Development of the Private Sector RE association and relevant communications strategy and roll-out / $4,000
16	2.2. Partial CAPEX costs for: Anjouan containerized solution (with 4.08 kWp solar power and 15.84 kWh battery capacity and inverter, capacity with 350 powerbanks, Wifi hotspot, Community solar fridge); Bandassamlini-Sangani agrivoltaics solution, 3t blast freezer for fish storage and 1t ice block maker all solar powered with 250kW / $259,725 2.3. Various training equipment incl. solar PV panels etc. / $6,000 2.4. Furnitures and other goods for the association's office / $4,000
17	2.4. Office supplies for the RE private association / $3,000
18	2.4. Communication materials for the RE private association / $2,000
19	2.1. 3 prizes for the innovation contest ($5,000, $3,000, $2,000) / $10,000. Innovation contest will follow UNDP rules and procedures.
20	2.1. Half day workshop on the analysis and recommendations to boost economic and social activities through electricity access and productive use / $1,500 2.3. Venue & co for 3 trainings for private minigrid developers and communities of the 3 pilot sites / $6,000 2.4. Venue, breaks for meetings & study tour, fees to attend conferences, fairs etc. / $5,001
21	2.3. IT hardware and software useful for trainings / $3,000 2.4. Laptop, printers, software for a functioning office of the RE private sector association / $3,000
22	2.2. Partial CAPEX costs for: Anjouan containerized solution (with 4.08 kWp solar power and 15.84 kWh battery capacity and inverter, capacity with 350 powerbanks, Wifi hotspot, Community solar fridge); Bandassamlini-Sangani agrivoltaics solution ; Mohéli Keymaker model incl. 3t blast freezer for fish storage and 1t ice block maker all solar powered with 250kW / $323,505
23	3.3. 25 days to develop and conduct relevant training on business models and innovative finance solutions for national financial institutions (incl. philanthropic) / 25 days * $500 = $12,500
24	3.4. 3 visits for 3 trainings in Comoros / (3 international return tickets * $2000) + (3 missions * 4 days *$238 DSA) = $ 8,856
25	3.1. Conduct a benchmarking of existing financial products supporting access and use of energy, design the MFF, develop an operation manual, recommend resource mobilization sources, etc. / $39,000 3.2. General market intelligence study and dissemination of the main findings etc. / $20,000

Budget note number	Comments: Budget note should be output based rather than input based. Even for individual consultants' outputs of the consultants must be clear. Include cost breakdown and calculation basis (e.g. daily fee and number of days/weeks, unit cost and number), as well as a total amount for the budget line.
26	3.1. Workshops (stakeholder consultations, validation/awareness raising) presenting at part of the fund mobilization efforts (incl. dissemination at training) on the MFF / $3 sessions * $3,000 = $9,000 3.3. Venue and related costs for the 3 training sessions to strengthen the capacities of the national financial sector / 3 sessions * $1,500 = $4,500
27	4.8. Replication plan – 12 days of work – remotely / 12 days * $600 = $7,200
28	4.3. 2 consultants - 1 SES and 1 Gender - 12 days per year per consultant for 4 years in charge of monitoring and recommending corrective measures where needed for Quality Assurance and Monitoring Framework / 12 days *4 years * 2 consultants * $200 = $19,200 4.8. Replication plan: 25 days incl. field visits in all islands incl. on the 3 pilot sites and some eligible communities according to the DREI and GIS analyses (Component 1) / 25 days * $300 = $7,500
29	4.3. Quality Assurance & Monitoring Framework $7,515 4.4. Visits to Mohéli & Anjouan of 2 PMU members as part of the Inception workshop $3,352 4.5. Attend events hosted by regional project (1 AMP Comoros Community of Practice rep per event) / $18,715 4.8. Field visits to elaborate the replication plan for the national consultant to Anjouan and Mohéli $2,826
30	4.1. Digital strategy: Same company as for Lessons Learned taking care of all Knowledge Management / $9,000 4.2. National digital convening platform for key stakeholders /$8,000, Financing platform for running tenders to select minigrid pilot beneficiaries $8,000, National monitoring and evaluation platform (remote monitoring & analytics) 300/site/year data collection, storage, and management fee / $300*3sites*3 year = $2,700; additional training and support of IP & co /$3,000 total = $21,700 4.3. Setting up the Quality Assurance and Monitoring Framework for the project complying and in coordination with the AMP regional requirement. Training the PMU and other targeted consultants / $9,312 4.4. Project Monitoring support: Same company as for Lessons Learned taking care of all Knowledge Management / $8,000 4.5. Lessons learned captured: gather data and audio-visual content (video footage, photos, etc.) on the national project subject of choice for the 'insight brief' Translation services of the insight brief into English / $8,000 4.6. Knowledge networks / Communities of Practice / industry associations / Other strengthened to promote minigrids development / rural energy access Same company as for Lessons Learned taking care of all Knowledge Management / $6,000 4.7. National communication campaign incl. lessons learned captured and disseminated / $5,000; Same company as for Lessons Learned taking care of all Knowledge Management and M&E related topics
31	4.7. Audio visual & Print production costs for national promotion campaign on minigrids, access to available, reliable, affordable and greener energy, EE, etc. / $8,000
32	4.1. Digital Strategy validation workshop / $2,000 4.2. Training venue and related costs for up to 3 trainings of DGEME and relevant stakeholders around the minigrids data management platform / $1,300 4.5. Various workshops for Knowledge networks / Communities of Practice / industry associations / Other strengthened to promote minigrids development / rural energy access / $5,000 4.8. Replication plan validation workshop / $3,000
33	4.4. Inception workshop / $2,000
34	Mid-Term Evaluation costs International consultant/ $20,000 Terminal Evaluation costs / $40,000

Budget note number	**Comments:** Budget note should be output based rather than input based. Even for individual consultants' outputs of the consultants must be clear. Include cost breakdown and calculation basis (e.g. daily fee and number of days/weeks, unit cost and number), as well as a total amount for the budget line.
35	Mid-Term Evaluation costs local consultant / $15,000 Terminal Evaluation costs/ $15,000
36	PMU - full time for 4 years/partial: Project Manager, Project Assistant/Coordinator (incl. M&E)/ (salary $1083*12 months *4 years)+(salary $800*12month*4years) = $90,400
37	Laptops, software, printers, etc. / $6,000
38	Auditing services / yearly flat fee $2,500 * 4 years = $10,000
39	PMU - full time for 4 years/partial: Administrative Assistant (incl. financial aspects) / salary 1,117.35*12 months *4years = $53,633
40	Direct Project Costs

X. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of (country) and UNDP, signed on (date). All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by DGEME - Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

XI. RISK MANAGEMENT

Option a. Implementing Partner is a Government Entity (NIM)

1. Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:
   a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
   b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

2. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

3. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the United Nations Security Council Consolidated Sanctions List, and that no UNDP funds received pursuant to the Project Document are used for money laundering activities. The United Nations Security Council Consolidated Sanctions List can be accessed via https://www.un.org/securitycouncil/content/un-sc-consolidated-list.

4. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.

   (a) In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").

(b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, the Implementing Partner, and each of its sub-parties referred to above, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment. SH may occur in the workplace or in connection with work. While typically involving a pattern of conduct, SH may take the form of a single incident. In assessing the reasonableness of expectations or perceptions, the perspective of the person who is the target of the conduct shall be considered.

5. a) In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties referred to in paragraph 4 (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, the Implementing Partner will and will require that such sub-parties will take all appropriate measures to:

   i. Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;

   ii. Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties referred to in paragraph 4 have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and its sub-parties may use the training material available at UNDP;

   iii. Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties referred to in paragraph 4 have been informed or have otherwise become aware, and status thereof;

   iv. Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and

   v. Promptly and confidentially, record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in paragraph 4 with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.

   b) The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties referred to in paragraph 4, to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.

6. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

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7. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

8. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

9. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds.

10. In the implementation of the activities under this Project Document, UNDP places reasonable reliance upon the Implementing Partner for it to apply its laws, regulations and processes, and applicable international laws regarding anti money laundering and countering the financing of terrorism, to ensure consistency with the principles of then in force the UNDP Anti-Money Laundering and Countering the Financing of Terrorism Policy.

11. The Implementing Partner will ensure that its financial management, anti-corruption, anti-fraud and anti-money laundering and countering the financing of terrorism policies are in place and enforced for all funding received from or through UNDP.

12. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

13. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes in accordance with UNDP's regulations, rules, policies and procedures. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

14. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

    Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

15. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud, corruption or other financial irregularity, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such

amount by UNDP shall not diminish or curtail the Implementing Partner's obligations under this Project Document.

Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud, corruption or other financial irregularity, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

16. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

17. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

18. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management Standard Clauses" are included, mutatis mutandis, in all sub-contracts or sub-agreements entered into further to this Project Document.

XII. MANDATORY ANNEXES

1. GEF Budget Template
2. GEF Execution Support Letter
3. Project Map and geospatial coordinates of the project area
4. Multiyear Workplan
5. Monitoring Plan
6. Social and Environmental Screening Procedure (SESP)
7. UNDP Atlas Risk Register
8. Overview of technical consultancies/subcontracts
9. Stakeholder Engagement Plan
10. Environmental Social Management Framework (ESMF) or other SES frameworks/plans if required
11. Gender Analysis and Gender Action Plan
12. Procurement Plan – for first year of implementation especially

13. GEF focal area specific annexes (e.g. METT, GHG calculations, target landscape profile, feasibility study, other technical reports)
14. Additional agreements: such as cost sharing agreements, project cooperation agreements signed with NGOs (where the NGO is designated as the "executing entity"), letters of financial commitments etc..

15. GEF and/or LDCF/SCCF Core indicators (see template below)
16. GEF Taxonomy (see template below)

17. Partners Capacity Assessment Tool and HACT assessment
18. UNDP Project Quality Assurance Report
19. Signed LOA between UNDP and IP requesting UNDP Support Services

Annex 1: GEF Budget Template

Expenditure Category	Detailed Description	Component (USDeq.)							Total (USDeq.)	Responsible Entity
		Component 1	*Component 2*	*Component 3*	*Component 4*	*Sub-Total*	*M&E*	*PMC*		(Executing Entity receiving funds from the GEF Agency)[1]
Equipment	1.4. GIS study: software, licenses, etc. / $5,0001.7. Institutional capacities materials & goods -$5K yearly for 2 years / $10,000	15,000				15,000			15,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Equipment	2.2. Partial CAPEX costs for: Anjouan containerized solution (with 4.08 kWp solar power and 15.84 kWh battery capacity and inverter, capacity with 350 powerbanks, Wifi hotspot, Community solar fridge); Bandassamlini-Sangani agrivoltaics solution, 3t blast freezer for fish storage and 1t ice block maker all solar powered with 250kW / $259,7252.3. Various training equipment incl. solar PV panels etc. / $6,0002.4. Furnitures and other goods for the association's office / $4,000		269,725			269,725			269,725	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Equipment	2.3. IT hardware and software useful for trainings / $3,0002.4. Laptop, printers, software for a functioning office of the RE private sector association / $3,000		6,000			6,000			6,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

Equipment	Laptops, software, printers, etc. / $6,000					-		6,000	6,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Contractual services-Individual	2.1. 3 prizes for the innovation contest ($5,000, $3,000, $2,000) / $10,000. Innovation contest will follow UNDP rules and procedures.		10,000			10,000			10,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Contractual services-Company	1.5. DREI Analysis on Year 1 / $50,000; 4 roundtable workshops with key stakeholders / 4*$2,500= $10,000 ; total = $60,0001.6. Pre-feasibility studies (demand assessment and technical aspects incl. demand assessment at each site, so in-house surveys, focus groups, identification of productive end-users, topographical survey) for each of the 3 pilot sites / $5,000 * 3 sites = $15,000; and 1 social & environmental impact study for the 3 pilots sites combined/$6,000 ; total = $21,0001.8. Local company to conduct study on existing training offer and relevant gaps, as well as recommendations to overcome then / $16,000	97,000				97,000			97,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Contractual services-Company	2.1. ANADEN to organize and communicate on the innovation start-up contest (incl. venue, etc.) / $33,0002.2. installation and annual offshore support service, training of local partners, communities, rural electricians at the 3 sites / $56,949 over 4 years2.4. Development of the Private Sector RE association and relevant communications strategy and roll-out / $4,000		93,949			93,949			93,949	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

Contractual services-Company	3.1. Conduct a benchmarking of existing financial products supporting access and use of energy design the MFF, develop an operation manual, recommend resource mobilization sources, etc. / $39,0003.2. General market intelligence study and dissemination of the main findings etc./ $20,000			59,000		59,000			59,000		Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
	4.1. Digital strategy: Same company as for Lessons Learned taking care of all Knowledge Management / $9,0004.2. National digital convening platform for key stakeholders /$8,000, Financing platform for running tenders to select minigrid pilot beneficiaries $8,000, National monitoring and evaluation platform (remote monitoring & analytics) 300/site/year data collection, storage, and management fee / $300*3sites*3 year = $2,700; additional training and support of IP & co /$3,000 total = $21,7004.3. Setting up the Quality Assurance and Monitoring Framework for the project complying and in coordination with the AMP regional requirement. Training the PMU and other targeted consultants / $9,3124.4. Project Monitoring support: Same company as for Lessons Learned taking care of all Knowledge Management / $8,0004.5. Lessons learned captured: gather data and audio-visual content (video footage, photos, etc.) on the national project subject of choice for the 'insight brief'Translation services of the insight brief into English / $8,0004.6. Knowledge networks / Communities of practice / industry associations / other strengthened to promote Company / minigrids development / rural										
Contractual services-Company				67,012		67,012			67,012		Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

	energy access Same company as for Lessons Learned taking care of all Knowledge Management / $6,0004.7. National communication campaign incl. lessons learned captured and disseminated / $5,000; Same company as for Lessons Learned taking care of all Knowledge Management and M&E related topics										
International Consultants	1.1. Senegalese delegation of 2 consultants paid at USD 500/day for 5+2travel days to provide training and advisory for the national dialogue platform / 2 consultants * 7 days * $500 = $70001.2. 15 days for international consultant work for the drafting of minigrid paragraphs in the Electricity Code and adopting a "regulation by contract" in the meantime, as well as 5 days to adapt and enforce customs procedures and import requirements / 20 days * $600 = $12,0001.3. 20 days to develop a procedure and templates for tenders and contract templates for minigrid implementation and operation / 20 days * $600 = $12,0001.4. GIS analysis: 28 days; Interconnection potential: 12 days; Minigrid tariffication analysis: 20 days / (28+12+20) days * $600 = $36,0001.7. International consultants for knowledge gap analysis, developing comprehensive modular training materials, conducting training and ToT - 40 days / 40 days * $ 500= $20,0001.8. 12 days of Training facilitator/Capacity building specialist to train the trainers of relevant institutions in Comoros / 12 days / $500 = $6,000	93,000				93,000			93,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

International Consultants	2.1. 20 days Analysis on key national rural economic outputs and their value chains, and social activities / 20 days * $600 = $12,0002.3. Pedagogical engineering, Training and ToT on business models, cost-reduction levers, new technologies depending on the topics, tariff negotiation, understanding of anchor loads, remote monitoring, etc. all services - several modules; and knowledge transfer / 30 days *$500 = $15,000		27,000			27,000			27,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
International Consultants	3.3. 25 days to develop and conduct relevant training on business models and innovative finance solutions for national financial institutions (incl. philanthropic) / 25 days * $500 = $12,500			12,500		12,500			12,500	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
International Consultants	4.8. Replication plan – 12 days of work – remotely / 12 days * $600 = $7,200				7,200	7,200			7,200	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
International Consultants	Mid-Term Evaluation costs International consultant/ $20,000Terminal Evaluation costs / $40,000					-	60,000		60,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Local Consultants	1.1. National consultant to facilitate National Dialogue Platform meetings (incl. meeting organization) / $300 per meeting x 20 meetings over 4 years = $6,0001.2. 20 days for international consultant work for the drafting of minigrid paragraphs in the Electricity Code and adopting a "regulation by contract" in the	35,100				35,100			35,100	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

	meantime, as well as 10 days to adapt and enforce customs procedures and import requirements / 25 days * $300= $7,5001.3. GIS analysis: 20 days; Interconnection potential: 12 days / (20+12) days * $300 = $9,6001.7. 60 days national consultant's knowledge gap analysis, developing comprehensive modular training materials, conducting training / 60 days * $200 = $12,000									
Local Consultants	2.1. 30 days Analysis on key national rural economic outputs and their value chains, and social activities incl. field visits on key value chains and stakeholder consultations / 30 days * $300 = $9,0002.3. Pedagogical engineering, Training and ToT on business models, cost-reduction levers, new technologies depending on the topics, tariff negotiation, understanding of anchor loads, remote monitoring, etc. all services - several modules; and knowledge transfer / 40 days *$200 = $8,0002.4. An assistant (or similar) in charge of the bureau and association, updates the website, organizes meetings etc. / part time for 3 years / 36 months * $180 = $6,480		23,480			23,480			23,480	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Local Consultants	4.3. 2 consultants - 1 SES and 1 Gender - 12 days per year per consultant for 4 years in charge of monitoring and recommending corrective measures where needed for Quality Assurance and Monitoring Framework / 12 days *4 years * 2 consultants * $200 = $19,2004.8. Replication plan: 25 days incl. field visits in all islands incl. on the 3 pilot sites and some eligible communities according to the DREI and GIS analyses (Component 1) / 25 days * $300 = $7,500				26,700	26,700			26,700	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

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Local Consultants	Mid-Term Evaluation costs local consultant / $15,000Terminal Evaluation costs/ $15,000						30,000		30,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Local Consultants	PMU - full time for 4 years/partial: Project Manager, Project Assistant/Coordinator (incl. M&E)/ (salary $1083*12 months *4 years)+(salary $800*12month*4years) = $90,400					-		90,400	90,400	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Staff Costs	1.3. 15 days for a UNV to support the international consultant in developing relevant tender documents and contracts / 15 days * $200 = $3,000	3,000				3,000			3,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Staff Costs	2.1. Support to organize innovation start-up contest around rural electrification through minigrids / 30 days * $200 = $6,000		6,000			6,000			6,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Training, Workshops, Meetings	1.1. Various workshops for National Dialogue Platform members including workshop with Senegalese delegation for 2 days / $6,0001.2. 1.2. Stakeholder validation workshop for the regulatory framework and a workshop on customs procedures etc. / $5,0001.3. 1.3. Validation workshop related to tender documents and management & operation contract between communities and private sector player / $2,0001.4. 1.4. 1 restitution workshop half day per study (DREI, GIS Analysis,	40,000				40,000			40,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

	Interconnexion potential) / $4,0001.5. 1.5. 4 roundtable workshops to present the full DREI analysis to various key stakeholders in Year 2 / $6,0001.6. 1.7. 4 trainings over 2 years incl. 2 ToT sessions in Moroni, and 1 training in Mohéli and 1 in Anjouan – for institutional capacity building / $10,0001.7. 1.7. 4 trainings including venues for members of the National Dialogue Platform / $5,0001.8. 2 ToT to trainers of relevant academic institutions and vocational training centers in Comoros / $2,000										
Training, Workshops, Meetings	2.1. Half day workshop on the analysis and recommendations to boost economic and social activities through electricity access and productive use / $1,5002.3. Venue & co for 3 trainings for private minigrid developers and communities of the 3 pilot sites / $6,0002.4. Venue, breaks for meetings & study tour, fees to attend conferences, fairs etc. / $5,001		12,501			12,501			12,501	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Training, Workshops, Meetings	3.1. Workshops (stakeholder consultations, validation/awareness raising) presenting at part of the fund mobilization efforts (incl. dissemination at training) on the MFF / $3 sessions * $3,000 = $9,0003.3. Venue and related costs for the 3 training sessions to strengthen the capacities of the national financial sector / 3 sessions * $1,500 = $4,500			13,500		13,500			13,500	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Training, Workshops, Meetings	4.1. Digital Strategy validation workshop / $2,0004.2. Training venue and related costs for up to 3 trainings of DGEME and relevant stakeholders around the minigrids data management platform / $1,3004.5. Various workshops for Knowledge networks / Communities				11,300	11,300			11,300	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

	of Practice / industry associations / Other strengthened to promote minigrids development / rural energy access / $5,0004.8. Replication plan validation workshop / $3,000									
Training, Workshops, Meetings	4.4. Inception workshop / $2,000					-	2,000		2,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Travel	1.1. One Exchange visit with Senegal's successful national dialogue platform $4,380.1.2. 1.1. Local travels for National dialogue members to participate to the meeting $14,370.1.3. 1.2. International travel costs for a total of 14 days over 1 mission to conduct stakeholder consultations and work on the review of the Electricity Code $5,332.1.4. 1.3. 7 days of mission from international expert incl $3,666.1.5. 1.4. 2 international consultants - 1 mission to Comoros each for GIS analysis and interconnection potential study $8,284.1.6. 1.4. GIS analysis on the ground data collection local travel $2,110.1.7. 1.7. 2 missions to Comoros - 1 for initial phase and ToT, 1 for ToT on Year 2 for institutional capacities $7,808.1.8. 1.7. 2 return tickets to Anjouan and Mohéli to conduct training $1,678.1.8. 8 days missions once on year 1 and once on year 2 for the international consultant specialist to train the trainers (ToT) of relevant institutions in Comoros $5,904.	53,532				53,532			53,532	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

Travel	2.1. 1 mission to Comoros for the analysis on opportunities to boost economic and social activities through minigrid power access $4,1422.1. 4 return tickets (international & local consultant) to Anjouan and Mohéli for field visits and stakeholder consultations $3,1162.3. 1 mission to Comoros for ToT to build/strengthen the capacities of private minigrid developers and communities in pilot sites $4,1422.4. Travel costs for relevant conferences / $10,500		21,900			21,900			21,900	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Travel	3.4. 3 visits for 3 trainings in Comoros / (3 international return tickets * $2000) + (3 missions *4 days *$238 DSA) = $ 8,856			8,856		8,856			8,856	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Travel	4.3. Quality Assurance & Monitoring Framework $6,8004.4. Visits to Mohéli & Anjouan of 2 PMU members as part of the Inception workshop $2,6364.5. Attend events hosted by regional project (1 AMP Comoros Community of Practice rep per event) / $18,0004.8. Field visits to elaborate the replication plan for the national consultant to Anjouan and Mohéli $2,110				29,546	29,546			29,546	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Office Supplies	1.7. Supplies related to training / $3,000	3,000				3,000			3,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Office Supplies	2.4. Office supplies for the RE private association / $3,000		3,000			3,000			3,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for

										Energy, Mining and Water
Other Operating Costs	Auditing services / yearly flat fee $2,500 * 4 years = $10,000					-		14,000	14,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Other Operating Costs	1.7. Printing training materials costs / $1,0001.8. Printing training materials costs / $800	1,800				1,800			1,800	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Other Operating Costs	2.4. Communication materials for the RE private association / $2,000		2,000			2,000			2,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Other Operating Costs	4.7. Audio visual & Print production costs for national promotion campaign on minigrids, access to available, reliable, affordable and greener energy, EE, etc. / $8,000				8,000	8,000			8,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
Other Operating Costs	1.1. Miscellaneous Expenses	4,000				4,000			4,000	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water

Other Operating Costs	Miscellaneous expenses				2,862	2,862			2,862	Direction Générale de l'Énergie, des Mines et de l'Eau, i.e., Directorate General for Energy, Mining and Water
		345,432	475,555	93,856	152,620	1,067,463	92,000	110,400	1,269,863	

Annex 2: GEF execution support letter

STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE GOVERNMENT FOR THE PROVISION OF SUPPORT SERVICES

Dear Mr Ali Ibrahim MAZIADA,

1. Reference is made to consultations between officials of the Government of the Union of Comoros (hereinafter referred to as "the Government") and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.

2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.

3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:

a) Identification and/or recruitment of project staff and consultants;
b) Personnel management;
c) Payments and financial transactions;
d) Procurement of goods and services;
e) Travel management;
f) Technical support.

4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies, and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project,

the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.

5. The relevant provisions of the standard basic assistance agreement signed on January 27, 1976, between UNDP and Government (the "SBAA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document or project document.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the programme support document or project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be done only by mutual written agreement of the parties hereto.

10. If you agree with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

Signed on behalf of UNDP
Fenella Frost
Resident Representative

For the Government
Mr Ali Ibrahim MAZIADA
09/29/2021

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Attachment

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between the Ministry of Energy, Water and Hydrocarbons, the institution designated by the Government of the Union of Comoros and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project "*National child project under the GEF Africa Mini-grids Program Comoros*".

2. In accordance with the provisions of the letter of agreement signed on 29/09/2021 and the project document, the UNDP country office shall provide support services for the project as described below.

3. Support services to be provided:

Support services	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1. Payments, disbursements, and other financial transactions	Throughout project implementation	46637,40 USD	UNDP will directly charge the project upon receipt of request of services from the Implementation Partner (IP)
2. Personnel management services:payroll, administration and banking management		46 637,40 USD	
3. Recruitment of project staff and consultants		5 973,63 USD	
4. Procurement process for goods and services involving the local CAP (ITB, RFP requirements)		4 764,10 USD	
5. IT and communication services		1 510,89 USD	
6. Travel management		11 202,80 USD	
7. Technical support: risk management, environmental and social safeguards, technology, and skills transfer		24 500 USD	
TOTAL		**112 700,80 USD**	

4. Description of functions and responsibilities of the parties involved:

UNDP:

a) As the GEF executing agency, UNDP is responsible for achieving the expected results and is committed to monitoring the implementation of all activities described in the project document, in partnership with key stakeholders, in accordance with the project document,

b) UNDP is committed to providing technical and financial oversight support and will closely monitor the implementation of the project in accordance with UNDP regulations and procedures,

c) UNDP will provide technical support services to the project and will play a key role in overall donor coordination within the framework of the Development Partners Forum,

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d) UNDP will be responsible for the recruitment of international and national technical assistance for the project, after consultation with the national project manager, the project manager and the technical adviser,

e) UNDP is committed to effectively managing all contracts with service providers. Contract preparation will follow an open, transparent, and independent tendering process in accordance with UNDP procurement procedures.

Ministry of energy, water, and hydrocarbons

a) The Ministry through the Directorate General of Energy, Mines and Water (DGEME) undertakes to ensure the management of the government's contribution to the project, including the disbursement of funds and the production of financial reports, in accordance with UNDP rules and procedures, as the national counterpart of the project,

b) The Ministry through the DGEME is committed to supporting the effective coordination of the project with other national partner bodies and to ensuring that the lessons learned from the project are integrated into new initiatives,

c) The Ministry through the DGEME is committed to supporting the sustainability and replication of the project's results,

d) The Ministry through the DGEME will ensure the overall direction of the project as a national implementing partner, in close collaboration with the partners in Moheli, Anjouan and Grande Comore,

e) The Ministry through the DGEME undertakes to provide the premises and facilities of the project team,

f) The Ministry through DGEME will be responsible for the day-to-day management of the project.

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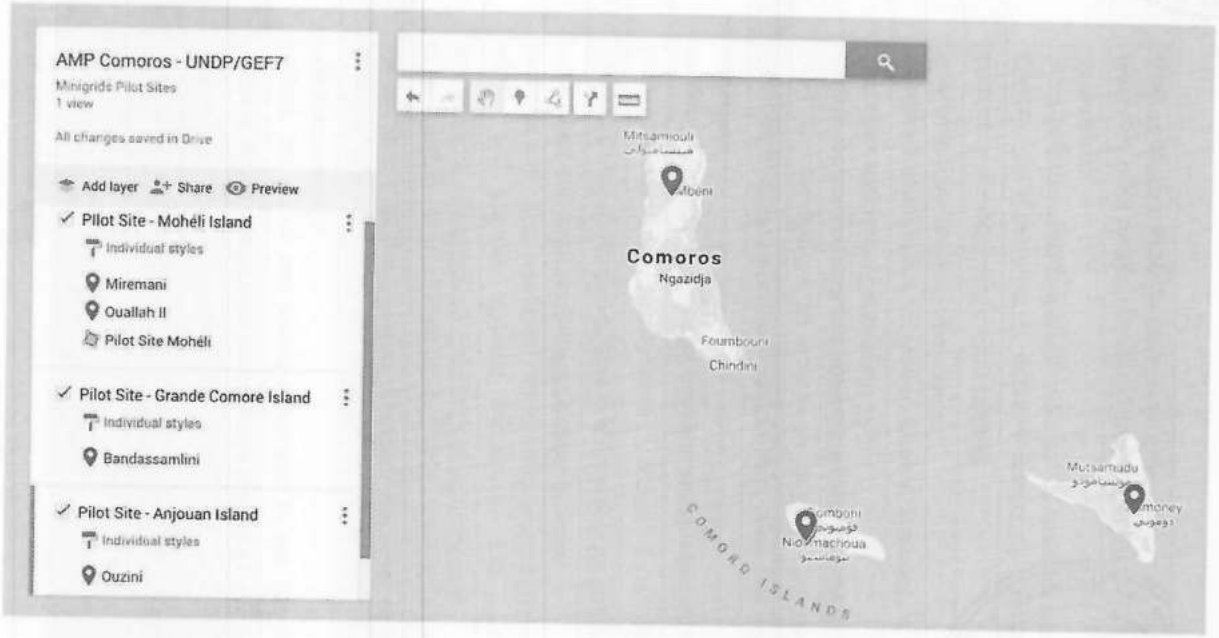
Annex 3: Project map and Geospatial Coordinates of project sites

The Project map and relevant coordinate can be found under this GoogleEarth link: **https://www.google.com/maps/d/u/0/edit?mid=1aLcbE-7E1nwi8WfVL0ktQH-KgScj_FtK&usp=sharing**



	Latitude	Longitude	Altitude	Precision
Miremani (Mwali/Mohéli Island)	-12.357735	43.6745031	23.4554443359375	4.883
Ouallah II (Mwali Mohéli Island)	-12.34689	43.66975	0.0	3334.0
Ouzini (Ndzuani/ Anjouan Island)	-12.27046325	44.47946715	594.134521484375	6.068
Bandassamlini (Ngadzija/Grande Comore Island)	-11.5212649	43.3310015	669.212646484375	4.288

Annex 4: Multi Year Work Plan

Activity #	Activity Description	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Project Component 1: Policy and Regulation																	
1.1.	**National dialogue platform on access to adapted clean electricity is operational, based on the revitalization and adaptation of the Energy Task Force**																
1.1.1	Support the set-up and operationalization of the National Dialogue Platform																
1.2.	**A review of the political and regulatory frameworks on the possible minigrid delivery models and suitable incentives is proposed in close collaboration with the National Dialogue Platform members and other development partners**																
1.2.1	Draft minigrid regulation paragraphs in the Electricity Code and adopt a "regulation by contract" in the meantime																
1.2.2.	Adapt and enforce customs procedures and import requirements, and strengthen capacities of public officials to implement and enforce simplified import process																
1.3.	**Templates of tender documents and contracts for the implementation and operation of minigrids (between community and private operator) are prepared**																
1.3.1	Develop a procedure and templates for tenders on minigrids																
1.3.2	Prepare contract templates for minigrid implementation and operation																
1.4.	**Geospatial, techno-economic modelling of least-cost off-grid renewable electricity technologies (mini-grids, grid expansion, solar home systems)**																
1.4.1	Conduct a geospatial (GIS) analysis to identify communities eligible for isolated minigrid implementation (in addition to pilot sites selected in Component 2)																
1.4.2	Conduct a national grid analysis to identify potential for interconnected minigrid application																
1.4.3	Conduct a minigrid tariffication analysis																
1.4.4.	Conduct an assessment of negative impact of competing fossil-fuel and main-grid utility subsidies on competitiveness of minigrids																
1.5.	**Mini-grid DREI techno-economic analyses carried out to propose most cost-effective basket of policy and financial de-risking instruments and contribute to AMP Flagship Report on Cost Reduction**																

Activity #	Activity Description	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.5.1	Conduct initial, full quantitative national DREI analysis																
1.5.2.	Disseminate DREI analysis and adaptive management																
1.5.3.	Coordinate with regional project on national DREI analysis update																
1.6.	**Pre-feasibility studies conducted for selected mini-grid sites to enhance sector planning and decision-making on a delivery model for minigrid development**																
1.6.1.	Conduct preliminary feasibility studies for pilot sites (demand forecast, minigrid sizing, providers mapping) incl. an environmental and social impact study																
1.7.	**Institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, are strengthened**																
1.7.1	Analyze the knowledge gaps related to minigrids																
1.7.2	Offer comprehensive training materials																
1.7.3	Conduct Training of Trainers (ToT)																
1.8.	**Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labor market in minigrids facilitated**																
1.8.1	Identify minigrid market needs in terms of competencies and jobs																
1.8.2	Analyze existing university and higher learning institutions programs and gap analysis																
1.8.3	Analyze existing vocational training programs and gap analysis																
1.8.4	Train the trainers of relevant institutions in Comoros																
Project Component 2: Project and Business Model Innovation with Private Sector Engagement																	
2.1	**Opportunities to boost economic and social activities through electricity access and productive use, with focus on minigrids, are identified and innovation is promoted**																
2.1.1	Conduct an analysis on key national rural economic outputs and their value chains, and social activities																

Activity #	Activity Description	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.1.2	Organize an innovation start-up contest around rural electrification through minigrids																
2.2.	**Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids**																
2.2.1	Develop a top-level project action plan for advancing the pilots																
2.2.2	Design a tender process for pilots using a digital platform																
2.2.3	Prepare tender on digital platform, conduct contracting and payments to the selected pilot beneficiaries																
2.2.4.	Monitor pilots, collect and aggregate data shared by pilots																
2.2.5.	Provide technical assistance to support viability of the minigrid																
2.3.	**Capacities of private minigrid developers and communities are strengthened**																
2.3.1	Provide training and support to local private sector developers and operators																
2.3.2	Raise awareness and building capacities of communities																
2.4.	**Group of Private Sector RE Services Providers is formalized, operational and its capacities are strengthened**																
2.4.1	Formalize and operationalize a national association of private sector RE providers																
2.4.2	Strengthen the capacities of the RE private sector association																
Project Component 3: Innovative Financing																	
3.1.	**The design and operations of a Minigrid Funding Facility under the Electricity Code is supported**																
3.1.1	Identify existing financing schemes available in the country supporting access and use of energy																
3.1.2	Design the MFF																
3.1.3	Operationalize the MFF																

Activity #	Activity Description	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.2.	**General market intelligence study on minigrids prepared and disseminated amongst public officials and finance community**																
3.2.1	Conduct a general market intelligence study																
3.2.2	Prepare a report summarizing all findings from GIS analysis and site identification efforts to quantify the size of the potential minigrid pipeline																
3.3.	**Capacities of the national financial sector (including philanthropic) in terms of business models and innovative financial solutions (including digital) in connection with minigrids are strengthened and facilitate access to financing**																
3.3.1	Build the capacities of the national financial sector																
Project Component 4: Digital, Knowledge Management and Monitoring & Evaluation																	
4.1.	**A Digital Strategy is developed and implemented, including linkages to and following guidance from the regional project**																
4.4.1	Develop and implement a project Knowledge and Data Strategy																
4.2.	**Minigrids data management platform implemented to run tenders and manage data from pilots, and to support minigrids scale-up and cost-reduction**																
4.2.1	Develop Terms of Reference (TORs) for procuring Minigrids data management platform																
4.1.2	Procure Minigrids data management platform																
4.3.	**A Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of all minigrids pilots supported, including GHG emission reductions, is adopted and operationalized based on standardized guidance from the regional project**																
4.3.1	Provide inputs and feedback to the regional project on the development of a standardized Quality Assurance and Monitoring Framework (QAF)																
4.3.2	Adopt and utilize the standardized Quality Assurance and Monitoring Framework (QAF)																
4.4	**Monitoring and Evaluation (M&E) and Reporting, including (i) Conducting Inception workshop and preparing report, (ii) Ongoing M&E, (iii) Mid-Term Evaluation and (iv) Terminal Evaluation**																
4.4.1	Conduct inception workshop and prepare report																
4.4.2	Undertake ongoing project monitoring																

Activity #	Activity Description	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
4.4.3	Undertake a mid-term review																
4.4.1	Conduct a terminal evaluation																
4.5.	**Engage with regional project, including, but not limited to, via (i) participating in Communities of Practice and (ii) capturing and sharing lessons learnt**																
4.5.1	Participate in AMP Communities of Practice (CoP)																
4.5.2	Share lessons learned with the regional AMP project																
4.5.3	Collaborate with the regional project on an 'Insight Brief'																
4.6.	**A Community of Practice to promote minigrids development and rural energy access is established, in close collaboration with Communities of Practice at AMP regional level and others at SIDS, regional, continental and international levels**																
4.6.1	Establish a national Community of Practice																
4.6.2	Link up the Community of Practice with other knowledge networks at various levels																
4.7.	**Awareness raising campaigns, including lessons learned, are developed and disseminated at all levels nationally (incl. intervention zones) and with the regional project**																
4.7.1	Design a communication strategy																
4.7.2	Implement and monitor the communication strategy																
4.7.3	Share lessons learned with the regional AMP project																
4.7.4	Collaborate with the regional project on an 'Insight Brief'																
4.8.	**Replication plan (including investment plan) for scaling up rural energy access developed**																
4.8.1	Develop a replication plan for scaling up investment in minigrids																
4.8.2	Conduct relevant market survey																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Annex 5: Monitoring Plan

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	Indicator 1: **Greenhouse gas emissions mitigated (Units of measure: metric tons of carbon dioxide equivalent (tCO2e))**	*Direct: 11,951 tCO2e* *Indirect: 9,000 tCO2e*	*Amount of greenhouse gas emissions mitigated (in metric tons of carbon dioxide equivalent). The target value was derived using GHG measurement methodology.*	*Installed pilots as estimated during PPG phase* *GEF GHG emissions calculation methodology*	*Yearly*	*Pilot project developers* *Project Management Unit*	*Pilot Project monitoring reports from field visits and measurements, and verification reports* *Consultant report*	*Pilot project development and implementation is not delayed* *DGEME, the Government of the Union of Comoros and SONELEC commit to support electrification efforts via off-grid renewable minigrids* *Target beneficiaries are willing to participate in the project and adopt minigrid system*
	Indicator 2: **Increase in installed solar PV capacity (MW) and battery storage (MWh)**	*0.449 MW installed PV capacity*	*Total size of pilot projects developed by direct*	*Feasibility studies* *Procurement/tenders documents* *Country Energy Statistics*	*Yearly*	*DGEME* *Pilot project developers and*	*Reports of feasibility studies of pilot projects installed*	*Pilot project feasibility study envisage other capacity levels*

[17] Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
		1.137 MWh installed battery storage	*financing from the project.* *20 kW_p is derived from the total size of the 3 projects developed directly with project funds 30 kW_p is the capacity installed from minigrids developed indirectly as a result of learning and activities from this project (incl. extension on pilot projects supported*	*Remote monitoring system data* *Field visits*		*other microgrid project developers* *Project Management Unit*	*Procurement and Tenders documents* *Project monitoring reports* *Pilot projects Remote monitoring reports*	*Development of the pilot project is delayed or not implemented as planned* *When estimating the values, it was assumed that funding for pilot project will be available and also co-financing will be made available. Moreover, other players (incl. communities and diaspora via demo/pilot project visits, and donors) will use best-practices from AMP project to initiate and implement more innovative minigrid projects.*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
			by this project) *Currently, the total installed capacity of minigrids is not known.*					
	Indicator 3 / GEF Core indicator 11: Number of direct beneficiaries benefitting from energy access via minigrids, disaggregated by gender and by customer segment (residential, social, commercial/productive use), as co-benefit of GEF investment. (number of people, number of connections)	*3,042 people (of which 50% women)* --- *2,990 people (residential)* *16 people (social)* *36 people (commercial/PUE)* *3042 people (total)* --- *98 connections (residential)* *4 connections (social)* *12 connections (commercial/PUE)*	*Additional beneficiaries of renewable minigrids across the archipelago, disaggregated by gender (male/female) and customer segment (residential, commercial and social)* *The total and disaggregated number*	*Baseline: local authorities' office of each of the 3 pilot sites as well as field survey undertaken during PPP (using KoboTools)* *List of power connection customers disaggregated* *Local surveys & field visits* *Focus groups*	*Quarterly* *Reported in DO tab of the GEF PIR*	*Pilot project operators /community associations* *DGEME* *Project Management Unit*	*Track records/list of minigrid customers* *Project monitoring reports* *Field visit reports*	*DGEME, the Government of the Union of Comoros and SONELEC commit to support electrification efforts via off-grid renewable minigrids* *Target beneficiaries are willing to participate in the project and adopt minigrid system.*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
		614 connections (total)	*of people* that have access to *clean, affordable and sustainable energy via minigrids pilots for domestic and productive use.* *Currently, it is unclear how many beneficiaries benefit from clean, affordable and sustainable energy access via minigrids. The value of the target was derived from beneficiaries targeted by each of*					

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
			the 3 pilot projects					
	Indicator 4: **Number of direct and indirect primary jobs created in the minigrid sector, disaggregated by gender, for mini-grid development, operation and productive use.**	*15 Women (50 indirect)* *25 Men (30 indirect)*	*Total No. of people employed in minigrid development, operation and productive use. This indicator is disaggregated by gender to ensure vulnerable population like women and youth are included.* *Most jobs will be covered by youth – men and women*	*Project developer and implementer feedback* *Project monitoring on job creation incl. rural electricians etc.* *Field visits and stakeholder consultations (incl. Productive use)*	*yearly*	*PMU* *DGEME*	*Field visit and surveys reports* *Project monitoring reports* *Pilot Project developers HR records*	*The assumption is that qualified human resources available to work in minigrid sector; trainings planned in the project will materialize in a timely fashion to allow recruitment of personnel before; productive end-users adopt sustainable energy access from minigrids.*
Project Component 1: Policy and Regulation								

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Outcome 1 Stakeholder ownership in a national minigrid delivery model is advanced, and] appropriate policies and regulations are adopted to address barriers and facilitate investment in renewable minigrids with storage.	*Indicator 5:* Number of policy derisking instruments[18] for minigrid investments - whose development has been supported by the project - are endorsed/adopted by the national government *(Units of measure: Absolute number of policy derisking instruments)*instruments[19] for minigrid investments - whose development has been supported by the project - are endorsed/adopted by the national government *(Units of measure: Absolute number of policy derisking instruments)*	*4 policy derisking instruments:* *1 comprehensive DREI study carried out and applied* *At least 2 policy derisking instrument(s).* *1 proposal for an appropriate regulatory framework for renewable mini-grids finalized, validated and adopted by the Government* *1 Enforcement of tax exemption for renewable energy*	*Policy instruments developed ad adopted by the DGEME and the Government of the Union of Comoros that support communities & private sector to scale-up investments in the minigrid sector*	*Baseline:* *1 GIS study carried out but rather superficial* *Weak knowledge about minigrids at Government level* *Regulatory framework for minigrids not comprehensive, especially autonomous ones (Electricity Code – Article 19)* *Limited enforcement of tax exemption for renewable energy equipment* *National Dialogue Platform*	*Yearly*	*Ministry of Economy, Energy and Investments* *National Dialogue Platform* *Consultants/Contractual Services*	*Relevant studies & propositions* *Project monitoring reports* *Reviewed Electricity Code*	*Government of the Union of Comoros remains committed to short, medium and long-term plans and strategies for decentralized electrification through renewable solutions supported by the communities in combination with the private sector (contracted by the community).* *The theory of change implies that policy and regulatory instruments once implemented via AMP Comoros will act as a lever to develop Comoros'*

[17] A list of policy derisking instruments can be found in the Derisking Table found in the "DREI: Off-Grid Electrification" (UNDP, 2018) report. As an illustration, example policy derisking instruments can include: off-grid planning/site mapping; mini-grid policies/regulations/tenders; grid service and technical standards; awareness campaigns; technical skill building programs.

[18] A list of policy derisking instruments can be found in the Derisking Table found in the "DREI: Off-Grid Electrification" (UNDP, 2018) report. As an illustration, example policy derisking instruments can include: off-grid planning/site mapping; mini-grid policies/regulations/tenders; grid service and technical standards; awareness campaigns; technical skill building programs.

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
		equipment generalized		*Stakeholder Consultations* *GIS analysis*				*nascent minigrids market, especially with private investments (communities, diaspora, private sector)*
	Indicator 6: **A minigrid delivery model to enable minigrid development is endorsed/adopted by the national government through a consultative process involving key stakeholders (e.g. relevant ministries, local authorities, rural populations, private sector, media, etc.)** **(Units of measure: binary (1/0))**	*At least one minigrid delivery model is identified and endorsed by the government through the work of the multi-stakeholder platform and dialogue. (1)*	*A stand-alone mini-grid delivery model is selected and clearly articulated through a consultative process*	*Regulatory framework for minigrids not comprehensive, especially autonomous ones (Electricity Code – Article 19)* *Regulation by contract followed by approved review of Electricity Code – Artcle 19*	*Once developed*	*DGEME/Ministry* *National Dialogue Platform* *PMU* *UNDP country office*	*National validation meeting report* *Electricity Code* *Pilot sites monitoring report*	*The delivery model is selected/adopted through a consultative process through the National Dialogue platform.* *The risk of not achieving this indicator might result in the project's failing to showcase the minigrid and its related delivery mode as part of the electrification solution in Comoros.* *In addition, without a clear delivery model and regulatory framework, installed minigrids*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
								could be "endangered" to be taken by the national utilities as it has been done a few times in the past both for water and energy micro/pico grids
Project component 2: Project and Business Model Innovation with Private Sector								
Outcome 2 **Innovative business models based on cost reduction operationalized, with strengthened private sector participation in renewable minigrid development**	*Indicator 7* Minigrid pilots implemented that demonstrate a delivery model, cost-reduction measure(s) and/or productive use of electricity *(binary (1/0))*	*At least 3 renewable mini-networks are developed and operational (1 in Grande Comore, 1 in Mohéli and 1 in Anjouan, respectively) (1)* *A minigrid delivery model to enable minigrid development is endorsed/adopted by the national government through a consultative*	*Total number of minigrid pilot projects incorporating a delivery model, innovative business model and solutions, cost-reduction measure(s) and/or productive use of electricity*	*Procurement tenders* *Inspections and field visits*	*Once at installation and subsequent yearly*	*DGEME* *Project developers/Installers* *PMU*	*Procurement tenders' reports* *Inspections and field visit reports on pilot projects installed*	*The 3 selected pilot sites are still considered to be feasible (study, etc.) and are compliant with the adopted delivery model in Comoros.* *Innovative business models, technology solutions, power cost reduction and productive use of energy remain possible in each of the 3 sites.*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
		process involving key stakeholders (e.g. relevant ministries, local authorities, rural populations, private sector, media, etc.) (1)						
	Indicator 8: Capacity of communities, as well as minigrid developers and operators, is enhanced to implement innovative business models and incorporate cost-reduction levers in minigrid projects *(binary (1/0))*	*Planned capacity building activities for year 3 and 4 are implemented. (1)* *The capacity of targeted recipients is assessed by survey towards the end of the project. On a scale of 1 to 5, an average score of at least 4 is achieved.*	*Enhancing capacity of minigrid developers and/or operators as well as communities to implement minigrid projects*	Trainings Certificates issued (including attendance and/or completion certificates) Awareness raising activities Workshops	Quarterly	Project Manager/Coordinator	*Training/Workshops/* *Awareness raising activities reports*	*Communities, minigrid developers and operators are willing to participate in the trainings and to implement innovative business models and incorporate cost-reduction levers in minigrid projects.* *Trainings and other efforts are adapted and suitable to the*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
		- 1 represents a low level of capacity *- 5 represents a strong capacity to understand relevant issues and apply knowledge and skills to find effective solutions. (1)*						*needs of each type of beneficiary*
Project component 3: Innovative Financing								
	Indicator 9: **Capacity of financial institutions is enhanced through training, knowledge sharing, and/or awareness raising events aimed at increasing the financial sector's capacity to evaluate investments in MINIGRID (binary (1/0))**	*Planned capacity building activities for year 3 and 4 are implemented. (1)* *The capacity of targeted recipients is assessed by survey towards the end of the project. On a scale of 1 to 5, an average score of at least 4 is achieved.*	*Workshops on risk mitigation measures, development /adaptation of relevant financial products, as well as on the creation of links with international actors and donors to access hybrid and*	*Workshops* *Potentially other capacity building means incl. AMP regional training virtual platform, webinars, B2B networking events, etc.*	Yearly	PMU	*Training and events reports*	*The Comoros' Government sends clear inducive signals through new policy instruments for financial sector actors to invest in minigrid.* *Pilot sites are implemented successfully and create the momentum.*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
		- 1 represents a low level of capacity *- 5 represents a strong capacity to understand relevant issues and apply knowledge and skills to find effective solutions. (1)*	*innovative financing adapted to the needs of the Comoros*					
	Indicator 10: **Number of government or impact investor-supported financing mechanisms offering concessional finance for renewable minigrids (binary (1/0))**	*A Minigrid Funding Facility (MFF) dedicated to minigrids is designed within the framework of the Electricity Code (1)*	*The Minigrid Funding Facility MFF (designed withing the Electricity Code framework) is operational and integrates various national and internation*		Yearly	PMU *Subcontractor/expert* *Financial institutions* *Ministry of Economy, Energy and Investments*	Project monitoring Report MFF Report Available targeted financing mechanisms	*Finance institutions are willing to design and offer dedicated and adapted financial products & services* *The Comoros Government is willing to support minigrids and supervise the MFF, as well as to make it operational (incl. mobilizing funds)*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
			al funding (including innovative ones) *At least 2 financial mechanisms for supply and 2 for demand, linked to minigrid, are proposed and operational in the MFF, including 1 targeting women and young people*					
Project component 4: Data, Knowledge Management and Monitoring & Evaluation								
Outcome 4 **Data and digitalization are mainstreamed across stakeholders, into local**	*Indicator 11:* ***A digital strategy for the project is prepared and implemented by the PMU to contribute to project implementation and local minigrid market***	*The project digital strategy is implemented: (1)* *Recommendations for rolling out digital solutions for minigrids at national level*	*A data access and digitization strategy for the project is designed and implemented*	*Baseline: no data strategy, no national repository leading to waste of time and other resources*	*Based on the data strategy and regional project guidance*	*PMU*	*Data strategy document* *Project monitoring reports*	*When knowledge and data gaps in minigrid sector exist, private investment (commercial and communities/diaspora) and large-scale deployment*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
minigrid market development. Increased knowledge, awareness and network opportunities in the minigrid market and among stakeholders, including benefitting from linkages to international good practice	*development (binary (1/0))*	*have been shared with key national stakeholders. (1)*	*A national repository of studies and other data related to minigrids in particular, and to renewable energies in general, is created and operational online (similar to the one about to be implemented on Climate Change in Comoros with UNDP's support* *A post-project strategy is developed to ensure*	*Short demand survey undertaken in each of the 3 selected pilot sites (via KoboTools) during PPG phase* *Surveys, focus groups, interviews, etc.* *Smart metering data at pilot sites*			*National repository platform*	*of RE minigrids are jeopardized. The theory of change is built on the case that if a data strategy is adopted and stakeholders' capacity are built to fully use the data strategy more private sector investment will follow.*

Monitoring	Indicators	End of Project Target	Description of indicators and targets	Data source/Collection Methods[17]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
			data's sustainability, regularly updated and shared with all stakeholders					
	Number of minigrid pilots sharing data on minigrid performance with the regional project and other stakeholders following best practices and guidance provided by the AMP Regional Project (*binary (1/0)*)	*100% of the planned minigrid pilots, as identified in the project's Minigrid Pilot Plan, are collecting and sharing data with the AMP Regional Project using the project's 'digital & data management platform'. (1)*	*Total number of minigrid pilots sharing data on minigrid performance*	*Smart metering and remote data collection* *Surveys, focus groups, interviews, GIS analysis, etc.*	Monthly collection of metering data Quarterly collection of socio-economic impact data And based on regional project guidance	*Pilot Project developers/operators* *PMU*	Pilot projects remote monitoring reports	Smart metering systems do not function properly Information on minigrid performance are not transparent


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Annex 6: UNDP Social and Environmental Screening Procedure (SESP)

QUESTION 1: How Does the Project Integrate the Programming Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the project mainstreams the human-rights based approach
Rights holders are women and men, a great number belongs to the poor and marginalized sector such as customary community groups, rural population and resource dependent groups. This project will ensure that their rights are exercised by facilitating their own capacity to think, act, organize, and advocate these rights; and Primary duty-bearers comprise the State, with all its provincial agencies and institutions, and the staff dedicated to the project. This project will ensure their mandate will respect, protect, promote and fulfill the rights of the poor and marginalized sectors/groups in all spheres of life. The project addresses the human rights to sustainable development through the provision of measures to prevent the potential pollution from batteries and e-waste used at the project, as well as the monitored reduction of greenhouse gases emissions. Likewise, the project addresses the human rights to poverty alleviation and sustaining peace by taking into account the local communities as a workforce, including the fuel/energy sellers from the informal sector. Similarly, the project will ensure fair distribution of development opportunities and benefits through the empowerment of disadvantaged groups for example by capacity building. Altogether, the project fully incorporates the human Leave No One Behind approach, in particular through ensuring the participation, inclusion, equality and non-discrimination of disadvantaged groups (marginalized, discriminated and excluded), including the informal sector. This is achieved by design in the project, to empower them as active agents of the development process, facilitating their participation on the project design and implementation through the requirements established in this report. Similarly, the requirements here include actions to be taken related to advocacy, creating enabling environments, capacity development and support for civil society, community empowerment, and enhancing the quality and accessibility of services. Across all project components, activities include the participation of varied stakeholders through capacity building strategies at the policy, program, monitoring and evaluation, knowledge management on environmental conservation, human rights, gender equality, and social protection perspectives so that the intended project results are achieved also beyond the project cycle.
Briefly describe in the space below how the project is likely to improve gender equality and women's empowerment
As the implications of gender in the sector are not fully understood or appreciated, a gender analysis has been conducted during project preparation to fully gauge the gender implications, identify possible interventions that can meaningfully improve and enhance women's participation, and develop specific indicators and targets related to gender equality. Based on that a gender action plan has been established at the same phase for the preparation of specific investment interventions that will include along the whole project cycle special attention for vulnerable groups, especially women and girls, who face multiple and intersecting forms of discrimination in the energy sector and in general in the society. Women are often marginalized and excluded from other forms of formal participation in the sector and the economy; often, they are reduced to the lower positions in the job market and as beneficiaries.
Briefly describe in the space below how the project mainstreams sustainability and resilience
The project is primarily focused on environmental sustainability. It should be noted that no activities that could cause harm may proceed until assessments are undertaken and management plans are in place for specific sites. The monitoring, reporting and verification (MRV) system that will be set up by the project will include social, environmental and financial indicators to safeguard the improvement of the individuals and local communities, with an emphasis on the most vulnerable groups and individuals identified. Additionally, a comprehensive Quality Assurance Framework (QAF) is expected to be operationalized through technical support from the regional AMP. Finally, the mechanisms established in this report will help to strengthen the enforcement of existing laws interacting with the energy sector in order to fulfil public services while promoting the vulnerable groups and their human rights involved to achieve such task.
Briefly describe in the space below how the project strengthens accountability to stakeholders

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The stakeholder engagement plan, the information disclosure process, the grievance redress and the accountability mechanisms will strengthen remarkably the accountability of the most vulnerable groups and individuals affected by the Project both directly and indirectly at a fair level to the conventional groups. These processes and mechanisms have been established at the design phase and will continue along the project cycle. For example, to achieve this a multi-stakeholder platform will be set up to enhance horizontal participation and will include representatives from a varied range of groups in society.

Le Directeur

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Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Complete SESP Attachment 1 before responding to Question 2.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5below before proceeding to Question 5*			**QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High**
Risk Description (broken down by event, cause, impact)[20]	*Impact and Likelihood (1-5)*	*Significance (Low, Moderate, Substantial, High)*	*Comments (optional)*	*Description of assessment and management measures for risks rated as Moderate, Substantial or High*
RISK 1: Risk on lack of capacities. The scope of this risk belongs to Overarching Principle 1 and Programmatic Principle 2. Event: It may occur that the capacity of duty-bearers (e.g. government agencies, local skilled staff) for implementation of some project activities may be insufficient. Similarly occurs with the capacity of rights-holders (e.g. project-affected persons) to claim their rights. Cause: The project activities considered involve innovation and so that may be relatively new in the project's area of influence for both duty-bearers and right-holders. Also, the UNDP Universal Human Rights Index informs concerns in this country regarding the capacities of right-holder related groups and public officials/institutions. Impact: This may pose a potential harm to meeting the rights of right-holders.	I = 4 L = 3	Substantial	This risk is relevant to the project activities supporting all components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	As the project is Substantial risk, an ESMF has been prepared and annexed to the ProDoc. The ESMF covers all project risks. It contains procedures for the further screening, assessment and management measures that are required during the project's implementation for compliance with the SES. A Stakeholder Engagement Plan has been prepared to manage this risk. See ESMF Attachment II (Risks A&M specifications) for details of assessment and management of this risk and all others.

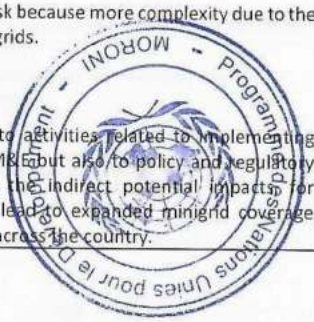
[20] See "SESP Summary" for detailed breakdown by event, cause, impact.

RISK 2: Risk of project activities not being safeguards responsive during the project life cycle. . The scope of this risk belongs to Overarching Principle 1 and Programmatic Principle 2. Risk description: See tools implemented for the Programmatic Principles 3 and 5, Standards 3-7.	I = 3 L = 4	Moderate	Note that prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth, health status or other status including as an indigenous person or as a member of a minority. Unless safeguard measures are applied and enforced in terms of project interventions and future replicates when market escalates, the reality on the ground is that government policy decisions and investment promotion strategies take limited consideration of certain environmental and social aspects. A transversal aspect that could pose an unintended impact, particularly from the duty-bearers end. Therefore, this risk is relevant to the project activities supporting all components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation	See ESMF Attachment II for details of assessment and management of this risk.
RISK 3: Risk of exclusion of affected stakeholders due to their vulnerability and/or potential concerns about the project. The scope of this risk belongs to Programmatic Principle 5. Event: Stakeholders may be excluded at the participatory/beneficial activities of the project, and/or retaliation/reprisals may occur based on their grievances and objections . Cause: The UNDP Universal Human Rights Index informs concerns in this country regarding the situation of vulnerable groups/persons and some forms of freedom. And, there is no evidence that the national regulatory framework requires and/or implements clear practices at mini-grid projects for the inclusion of all potentially affected stakeholders, in particular disadvantaged groups, to fully participating in decisions that may affect them for the type of activities included in this project. Similarly, there is no evidence that grievances or objections from these same stakeholders are being managed and resolved as a usual	I = 3 L = 4	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level. -	A Stakeholder Engagement Plan has been prepared to manage this risk. A project-level GRM will be put in place. See ESMF Attachment II for details of assessment and management of this risk.

practice through internationally recognized methods. Impact: This may pose a challenge to ensure that affected stakeholders will fully participate in decisions that will affect them, they will feel safe to express grievances or objections, these will be taken into account, and no retaliation or reprisals will take place against those stakeholders who express concerns or grievances or seek to participate or obtain information on the project.				
RISK 4: Risk on Women. The scope of this risk belongs to Programmatic Principle 3. Event: Women may be excluded at the participatory/beneficial activities of the project. Cause: The male oriented nature of energy and the limited social statues and opportunities identified for women. Impact: This may pose a challenge to ensure that women will have the chance to participate at the decisions-making level.	I = 4 L = 4	Substantial	Unless safeguard measures are applied and enforced in terms of project interventions and future replicates when market escalates, the reality on the ground is that decisions and investment promotion strategies take limited consideration on the involvement of women from the participatory and beneficial aspects. A transversal aspect that could pose an unintended impact, particularly from the duty-bearers end. Therefore, this risk is relevant to the project activities supporting all components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Gender empowerment is a core objective of the project. If no mitigation or management measures within the Environmental and Social safeguards were to be put in place this risk would be important given the male oriented nature of energy and the limited social statues and opportunities identified for women.	Measures have been established through the Gender Analysis and Action Plan established at the PPG phase, to manage and reduce the risks identified on women. See ESMF Attachment II for details of assessment and management of this risk.
RISK 5: Risk of damage to biodiversity and natural resources due to land changes and new productive uses of the	I = 3 L = 3	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to

energy. The scope of this risk belongs to Project Standard 1. Event: It may occur that they are within critical habitats and/or environmentally sensitive areas, will require changes to the use of lands and resources, and therefore will affect the ecosystems in it. This may be particularly important for productive use of the energy generated depending on the type of sector and activity to support. Cause: All mini-grids involve the construction of new infrastructure, and this is especially the case where mini-grids are "greenfield" (i.e. where there was little to no preexisting infrastructure). New built structures alien to the pre-existing conditions in the area are an alteration, in essence, of the biodiversity and natural resources in the project area of influence. Impact: At the construction stage, expected impacts related to the removal and displacement of the existing natural resources to allow the new structures to be built. At the operational stage, expected impacts related to, for example, maintaining natural resources not needed by the project to a minimal despite their natural reproduction/growth. Furthermore, mini-grids with a productive use entail unforeseen impacts should be expected according to the type of sector and activity to develop. And at the decommission stage, since the project will leave in place a built structure alien to pre-existing conditions in the area, the recovery of the original habitat and/or ecosystems and/or ecosystem services will be challenged.			- Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. -	be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II and XIV for details of assessment and management of this risk.

RISK 6: Adverse transboundary environmental concerns. The scope of this risk belongs to Project Standard 1. Event: It may occur that the equipment/materials for the project will affect the ecosystems at a transboundary level. Cause: All mini-grids involve the procurement and management of new equipment/chemicals outsourced internationally and are regarded as very challenging from the sustainability perspective. Impact: Expected environmental impacts related to the procurement of equipment/materials outside the project influence	I = 3 L = 2	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. -	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.
RISK 7: Risk due to electrical shocks/effects on fauna, flora and people. The scope of this risk belongs to Project Standard 1 and 3. Event: Electrical shocks/effects may occur in fauna, flora and people. Cause: All mini-grids involve electrical equipment. Impact: At the operational stage, the electrical structure alien to pre-existing conditions in the area, may cause the damage/death/fire/etc... due to the interaction with fauna and flora.	I = 3 L - 3	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Project involves additional risk because more complexity due to the involvement of hybrid mini-grids. Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.



RISK 8: Risk of local climate change events, and weather & hydro related disasters. The scope of this risk belongs to Project Standard 2. Event: It is realistic to consider that climate events (i.e. earthquakes, floods, landslides, severe winds...) may occur in the project's area of influence and may affect to the built structures. Cause: The global increase of future climate change and subsequent disaster. And, all mini-grids are open air structures exposed to climate events and involve build structures that may be vulnerable to the impacts of climate change or disasters. Impact: They could increase climate related effects and the number of disasters in the project area.	I = 4 L = 3	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.
RISK 9: Risk of overestimated emissions due to embedded activities. The scope of this risk belongs to Project Standard 2. Event: The procurement of equipment for the project will probably be outsourced internationally resulting in embedded emissions. Cause: All mini-grids involve solar panels and other activities that be imply indirect carbon emissions due to the project. Impact: They could decrease the calculated climate impact related to emissions avoided by the project.	I = 3 L = 3	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. -	See ESMF Attachment II for details of assessment and management of this risk.

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RISK 10: Risk of overestimated emissions due to aggregation to a third-party project. The scope of this risk belongs to Project Standard 2. Event: The aggregation of the activities within the AMP to a third-party project may be accounted as reductions assigned to the AMP activities instead of the third-party project. Cause: Third party activities may be difficult to discern between projects. Impact: Assigning the achievements of the overall project (including third party activities) to which the AMP activities are aggregated would lead to an increase of carbon emission avoided to the atmosphere.	I = 3 L = 2	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country.	There are project activities potentially considering to act as an aggregation to third-party initiatives. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. See ESMF Attachment II for details of assessment and management of this risk
RISK 11: Risk on the community due to domestic connections and electricity usage, and presence of hazardous materials (mainly batteries and/or chemicals for land clearance). The scope of this risk belongs to Project Standard 3. Event: It may occur that activities and/or structures enabled by the project become hazardous to the community. Cause: The use of potentially hazardous materials by the project, domestic electrical wiring and connection activities and subsequent domestic usage of electricity. Impact: the novelty of some structures and practices brought about by the project could become a source of harm if not accompanied with concomitant	I = 4 L = 3	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. Project involves additional risks because more complexity due to the potential connection of minigrids to national grid, the potential involvement of hybrid mini-grids with existing fossil fuels (i.e. diesel) systems, and the potential involvement of hybrid mini-	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. In particular, operators, contractors and owners of sites shall be required to abide by the ESMP's requirements on safety measures and minimum qualifications for the handling of hazardous materials. Similarly, those responsible for connecting households should ensure the provision of qualified electrician services to do so. Consumer awareness campaigns should also be performed, including through local workshops, clear signage (pictograms and local language indications) and awareness-raising activities in schools and public spaces to inform communities of risks associated with installations (e.g. prevention of trespassing and/or makeshifts connections

awareness of risks and safe practices.			grids aggregated to other existing renewable technologies (hydro, biomass...).	attempts, etc.) and of the safe usage of electricity domestically. See ESMF Attachment II for details of assessment and management of this risk.
RISK 12: Ambient perturbance on the community due to intense works locally at construction and decommissioning, and new economic activities subsequent from productive use of the energy. The scope of this risk belongs to Project Standard 3. Event: It may occur that some new activities and/or structures may interact with the surrounding area and/or involve the alteration of the normal functioning of the community health, safety and/or security in the project's area of influence, mainly as noise and physical hazards. Cause: The construction or/and decommissioning of the mini-grid and the energy generated by the project will raise new activities and/or new built structures. Impact: This may lead to the perturbance of the community's health, safety and/or security.	I = 4 L = 3	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Project involves additional risks because more complexity due to the potential connection of mini-grids to national grid, the potential involvement of hybrid mini-grids with existing fossil fuels (i.e. diesel) systems, and the potential involvement of hybrid mini-grids aggregated to other existing renewable technologies (hydro, biomass...). Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.
RISK 13: Risk on community health, safety and/or security due to the influx of people, mainly project workers and other new comers subsequent to the new economic activities resulting from the productive use of the energy. The scope of this risk belongs to Project Standard 3. Event: It may occur that the new activities in the local area will attract new comers in the project's area of	I = 3 L = 3	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.

influence. Cause: The project construction/decommissioning and the energy generated by the project will raise new activities and/or new built structures. Impact: This may lead to effects on community health, safety and/or security as this new influx of people, expected to be mainly men, may interact with the local residents and/or involve the alteration of the normal functioning of the community leading to new diseases and/or gender safety concerns.			after the project across the country. This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	
RISK 14: Risk on damage of cultural heritage. The scope of this risk belongs to Project Standard 4. Event: It may occur that excavations and other environmental changes take place, and they may be within or adjacent to project's areas of influence containing some form of cultural heritage (i.e. sacred places). Cause: built structures involve excavations and are alien to the pre-existing conditions in the area are an alteration. Impact: At the construction stage, this may lead to impacts related to the removal and displacement of the existing cultural heritage to allow the new structures to be built. Furthermore, mini-grids with a productive use entail unforeseen impacts should be expected according to the type of sector and activity to develop. And at the decommission stage, since the project will leave in place a built structure and/or new activities alien to pre-existing conditions in the area, the recovery of the original	I = 3 L = 3	Moderate	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.

cultural heritage will be challenged.				
RISK 15: Risk of physical displacement and loss of livelihood due to eviction from land. The scope of this risk belongs to Project Standard 5. Event: All mini-grid systems involve the acquisition of land, and they may be within or adjacent areas containing existing energy/fuel providers, including those from the informal/traditional sectors. Cause: All mini-grids involve the construction of new infrastructure. New built structures occupy land, and access to the area may be restricted, and new energy service options for consumers arise. Also, the UNDP Universal Human Rights Index informs concerns in this country regarding forced evictions and/or land rights. Impact: At the construction stage, expected impacts related to the displacement of the existing legal or illegal inhabitants to allow the new structures to be built. And at the decommission stage, since the project will leave in place built structure and/or new activities alien to pre-existing conditions in the area, the return of the inhabitants and their livelihood will be challenged.	I = 4 L = 4	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.
RISK 16: Risk of economic displacement due to loss of income from fuel selling. The scope of this risk belongs to Project Standard 5. Event: Traditional fuels supplied by local providers, including those from the informal/traditional sectors see their market diminished. Cause: Some mini-grid systems and project appliances to be implemented may replace an activity	I = 4 L = 4	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management

that was fueled with other energy sources like wood charcoal, paraffin, kerosene, diesel. For example in the households these activities may be cooking and lighting while in the community/commercial scope it may be diesel for the existing mini-grids. Impact: the change on the fuel used (i.e. from charcoal, private diesel mini-grids... to the service the renewable energy mini-grid provides) would lead to the loos of income for fuel suppliers, potentially these are mainly poor women selling in the informal market.			example, if they lead to expanded minigrid coverage after the project across the country. This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	of this risk.
RISK 17: Risk of economic displacement towards the payment of energy services replacing the previous options. The scope of this risk belongs to Project Standard 5. Event: Electricity supplied by the project represents a higher cost to users that previously. Cause: Poor users have no economic means to face the increased costs of the energy provided by the project. Impact: this would lead to the increase of debt due to electricity buying.	I = 4 L = 4	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.

RISK 18: Risk to indigenous peoples. The scope of this risk belongs to Project Standard 6. Event: Indigenous Peoples may be excluded at the participatory/beneficial activities of the project. Cause: The formal oriented nature of energy and the limited social statues and opportunities identified for Indigenous Peoples. Impact: This may pose a challenge to ensure that Indigenous Peoples will have the chance to participate at the decisions-making level.	I = 3 L = 3	Moderate	Due to the relative nature of the term "indigenous" a generic concept is considered. This may include tribes, first peoples/nations, aboriginals, ethnic groups, occupational and geographical related groups like hunter-gatherers, nomads, peasants, hill people, etc., are also considered for all practical purposes as "indigenous peoples". This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	Country specifics: - At the PPG phase, teams have NOT confirmed the presence of indigenous groups at the national level. At the time of this document no information was yet available to study this risk at the site level therefore certain risk is yet possible. Given that up to now this Child Project has not counted with the involvement of an Indigenous Peoples Expert, to be conservative, it is realistic to assume that each site will require assessment and management to identify the potential indigenous peoples at the local level. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. As part of the ESIA/ESMP, an Indigenous Peoples Plan will be put in place and FPIC secured, if necessary for SES compliance. See ESMF Attachment II for details of assessment and management of this risk.
RISK 19a: Risk on labour opportunity and working conditions. The scope of this risk belongs to Project Standard 7. Event: It may occur that working conditions are not meet the minimum criteria to satisfy the UNDP's requirements. It may also occur that unskilled/manual labour loses their jobs. Cause: all project stages (i.e. construction, operation...) will require labour, some project activities will displace unskilled/manual labour, and the UNDP Universal Human Rights Index informs concerns in this country regarding labour rights, employment rates and/or working conditions for some of the stakeholder groups relevant to this project. Impact: This may lead to	I = 4 L = 4	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country. This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. In particular, operators, contractors and owners of sites shall be required to abide by OHS measures identified in the ESMP, including for instance operational procedures manual(s), safety information, training program for all workers, the provision of adequate safety equipment, and the clarification of roles and responsibilities at each phase of the project. See ESMF Attachment II for details of assessment and management of this risk.

the use of child, forces, discriminatory, under-minimum practices and/or occupational health and safety accidents/incidents.				
RISK 19b: Risk on labour opportunities. The scope of this risk belongs to Project Standard 7. Event: It may occur that unskilled/manual laborers see their jobs displaced. Cause: some project investment (productive machinery, minigrids) could displace unskilled/manual labour Impact: This may lead manual laborers whose labour is made redundant to seek out alternative income-generating activities which may involve greater risk. (NB: the UNDP Universal Human Rights Index informs concerns in this country regarding labour rights, employment rates and/or working conditions for	I = 3 L = 1	Low	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Scaled-up financing - Digital, Digital, Knowledge Management and Monitoring and Evaluation This project's activities will be aggregated to other ongoing projects with equivalent safeguard requirements to UNDP focused on this if it can be demonstrated the risk can be mitigated through such third-party requirements and capacity. Output specifics: - This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded mining coverage after the project across the country.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures, if any given that this risk is considered low, will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.

some of the stakeholder groups relevant to this project)			This risk is not covered by the national legal requirements to conduct the project activities and/or when requirements are in place there are signs of been inconsistently enforced to the UNDP SES level.	
RISK 20: Risk on pollution and resource efficiency. The scope of this risk belongs to Project Standard 8. Event: Pollution may occur and resource efficiency is not practiced to meet the minimum criteria to satisfy the UNDP's requirements. Cause: All mini-grids will require resources and/or will lead with materials, waste and/or chemicals. And the UNDP Universal Human Rights Index informs concerns in this country regarding responsible consumption and production, clean water and sanitation, and life on land. Impact: This may lead to the significant consumption of raw materials, energy and/or waste, and the release of pollutants, generation of waste, hazardous/phase-outs materials, chemicals, pesticides.	I = 4 L = 4	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Business model innovation and private business - Innovative financing - Digital, Knowledge Management and Monitoring and Evaluation Project involves additional risks because more complexity due to the potential connection of mini-grids to national grid, the potential involvement of hybrid mini-grids with existing fossil fuels (i.e. diesel) systems, and the potential involvement of hybrid mini-grids aggregated to existing other renewable technologies (hydro, biomass...). Output specifics: This risk applies to activities related to implementing pilots and their M&E but also to policy and regulatory activities due to the indirect potential impacts, for example, if they lead to expanded minigrid coverage after the project across the country.	Country specifics: - At the time of this document no information was yet available to study this risk at the site level. Therefore, to be conservative, it is realistic to assume that each site will require assessment and management. Potential gaps to be addressed will be identified through the gap analysis as indicated in the ESMF. The necessary management plan/measures will be put in place as part of ESMP(s), based on the ESIAs. See ESMF Attachment II for details of assessment and management of this risk.
RISK 21: Upstream risks due to policy or regulatory changes Event: It may occur that changes to the current policies and regulations will have an upstream effect. Cause: New policies and regulations alien to the pre-existing conditions are an alteration, in essence. Impact: Expected unforeseen impacts should be expected according to the type of sector and activity to develop.	I = 4 L = 4	Substantial	This risk is relevant to the project activities supporting the following components: - Policy and regulations - Digital, Knowledge Management and Monitoring and Evaluation	A SESA will be conducted on activities supporting policy and/or sector reforms to include the requirements and measures in order to minimise these unforeseen risks of future projects across the country during the scale-up of activities. See ESMF Attachment II for details of assessment and management of this risk.

QUESTION 4: What is the overall project risk categorization?			
Low Risk	☐		
Moderate Risk	☐		
Substantial Risk	X	Note: • Requirements from Question 5 apply to this level of risk, for each Programmatic Principle and Project Standard triggered at this level of risk, a scoped study on key risks is required.	
High Risk	☐		

QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)					
Question only required for Moderate, Substantial and High Risk projects					
Is assessment required? (check if "yes")	X			*Status? (completed, planned)*	

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	if yes, indicate overall type and status		X	Targeted assessment	Stakeholder Analysis - Completed, a Stakeholder Engagement Plan has been conducted at the PPG phase before PAC approval of the project. - Planned, a Stakeholder Engagement Plan for each sub-project (as needed for SES compliance) and will need to the completed previous to the approval of the sub-project. Gender Analysis: See ProDoc; completed during PPG. Capacity assessment for duty-bearers - Ongoing, a Capacity Assessment for duty-bearers (top and bottom, i.e. government and security personnel) at the project has been initiated at the PPG phase before PAC approval of the project. See ProDoc. - Additionally, at the sub-project level, further capacity assessment for duty-bearers locally is planned and will need to the completed previous to the approval of each sub-project. Capacity assessment for right-holders - Ongoing, a Capacity Assessment for rights-holders (top and bottom, i.e. pan-African/national and local) at the project has been initiated at the PPG phase before PAC approval of the project. See ProDoc. - Additionally, at the sub-project level, further capacity assessment for right-holders locally is planned and will need to the completed previous to the approval of each sub-project. Indigenous Peoples, initial analysis: Completed, an Indigenous Peoples Analysis has been completed at the PPG phase before PAC approval of the project. Other targeted assessments might be required (separate from the ESIA requirements noted below), and will be determined during implementation of the ESMF. That could include (inter alia): - A Cultural Heritage Analysis - A climate risk assessment, - A disaster risk assessment, - A hazard assessment, - A health impact assessment

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			X	ESIA (Environmental and Social Impact Assessment)	Planned, to be developed for each sub-project and will need to the completed previous to the approval of the sub-project.
			X	SESA (Strategic Environmental and Social Assessment)	Planned.
	Are management plans required? (check if	X			

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	If yes, indicate overall type		X	Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)	Capacity Management Plan: Planned, for each sub-project and will need to the completed previous to the approval of the sub-project. Stakeholder Engagement Plan - Completed, a Stakeholder Engagement Plan has been conducted at the PPG phase before PAC approval of the project. - Planned, a Stakeholder Engagement Plan for each sub-project and will need to the completed previous to the approval of the sub-project. Gender Action Plan: See ProDoc; completed during PPG Other targeted management plans might be required (separate from the ESMP requirements noted below), and will be determined during implementation of the ESMF. That could include (inter alia): • Emergency Response Plan • Waste Management Plan • Labor Management Procedures (LMP) • Biodiversity Action Plan
			X	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	Planned, as noted in the ESMF.

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			X	ESMF (Environmental and Social Management Framework)	Completed during PPG (covering this AMP child project and others). Exceptionally, only if the project design (i.e. components, activities) change along the project cycle, this ESMF will need to be re-visited. See exclusion criteria in the ProDoc, Annex 10.
	Based on identified risks, which Principles/Project- level Standards triggered?		**Comments (not required)**		
	Overarching Principle 1: Leave No One Behind	n/a			
	Programming Principle 2: Human Rights	X			
	Programming Principle 3: Gender Equality and Women's Empowerment	X			
	Programming Principle 5: Accountability	X			
	Project- level Standard 1. - Biodiversity Conservation and Sustainable Natural Resource Management	X			
	Project- level Standard 2. Climate Change and Disaster Risks	X			
	Project- level Standard 3. Community Health, Safety and Security	X			
	Project- level Standard 4. Cultural Heritage	X			
	Project- level Standard 5. Displacement and Resettlement	X			
	Project- level Standard 6. Indigenous Peoples	X			

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	Project- level Standard 7. Labour and Working Conditions	X	
	Project- level Standard 8. Pollution Prevention and Resource Efficiency	X	

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Final Sign Off

Signature	*Date*	*Description*
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases, PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the Project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
Overarching Principle 1: Leave No One Behind **Programming Principle 2: Human Rights**		**Answer (Yes/No)**
P.1	Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
P.2	Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	Yes
P.3	Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	Yes
Would the project potentially involve or lead to:		
P.4	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	Yes
P.5	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? [16]	Yes
P.6	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	Yes
P.7	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Programming Principle 3: Gender Equality and Women's Empowerment		
P.8	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
Would the project potentially involve or lead to:		
P.9	adverse impacts on gender equality and/or the situation of women and girls?	Yes
P.10	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	Yes
P.11	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	Yes
P.12	exacerbation of risks of gender-based violence? *For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.*	Yes

[16] Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

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Programming Principle 4: Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below		
Programming Principle 5: Accountability		
Would the project potentially involve or lead to:		
P.13	exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?	Yes
P.14	grievances or objections from potentially affected stakeholders?	Yes
P.15	risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	Yes
Project-Level Standards		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
Would the project potentially involve or lead to:		
1.1	adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	Yes
1.2	activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3	changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	Yes
1.4	risks to endangered species (e.g. reduction, encroachment on habitat)?	Yes
1.5	exacerbation of illegal wildlife trade?	Yes
1.6	introduction of invasive alien species?	Yes
1.7	adverse impacts on soils?	Yes
1.8	harvesting of natural forests, plantation development, or reforestation?	Yes
1.9	significant agricultural production?	Yes
1.10	animal husbandry or harvesting of fish populations or other aquatic species?	Yes
1.11	significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	Yes
1.12	handling or utilization of genetically modified organisms/living modified organisms?[17]	Yes
1.13	utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)[18]	Yes
1.14	adverse transboundary or global environmental concerns?	Yes
Standard 2: Climate Change and Disaster Risks		
Would the project potentially involve or lead to:		

[17] See the Convention on Biological Diversity and its Cartagena Protocol on Biosafety

[18] See the Convention on Biological Diversity and its Nagoya Protocol on access and benefit sharing from use of genetic resources

2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?	Yes
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters? *For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes*	No
2.3	increases in vulnerability to climate change impacts or disaster risks now or in the future (also known as maladaptive or negative coping practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	Yes
Standard 3: Community Health, Safety and Security		
Would the project potentially involve or lead to:		
3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	Yes
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	Yes
3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	Yes
3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	No
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	Yes
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	Yes
3.7	influx of project workers to project areas?	Yes
3.8	engagement of security personnel to protect facilities and property or to support project activities?	Yes
Standard 4: Cultural Heritage		
Would the project potentially involve or lead to:		
4.1	activities adjacent to or within a Cultural Heritage site?	Yes
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	Yes
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	Yes
4.4	alterations to landscapes and natural features with cultural significance?	Yes
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	Yes
Standard 5: Displacement and Resettlement		
Would the project potentially involve or lead to:		
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	Yes

5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	Yes
5.3	risk of forced evictions?[19]	Yes
5.4	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	Yes
Standard 6: Indigenous Peoples		
Would the project potentially involve or lead to:		
6.1	areas where indigenous peoples are present (including project area of influence)?	Yes
6.2	activities located on lands and territories claimed by indigenous peoples?	Yes
6.3	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? *If the answer to screening question 6.3 is "yes", then the potential risk impacts are considered significant and the project would be categorized as either Substantial Risk or High Risk*	Yes
6.4	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	Yes
6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	Yes
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? *Consider, and where appropriate ensure, consistency with the answers under Standard 5 above*	Yes
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	Yes
6.8	risks to the physical and cultural survival of indigenous peoples?	Yes
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? *Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.*	Yes
Standard 7: Labour and Working Conditions		
Would the project potentially involve or lead to: (note: applies to project and contractor workers)		
7.1	working conditions that do not meet national labour laws and international commitments?	Yes
7.2	working conditions that may deny freedom of association and collective bargaining?	Yes
7.3	use of child labour?	Yes
7.4	use of forced labour?	Yes
7.5	discriminatory working conditions and/or lack of equal opportunity?	Yes
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	Yes

[19] Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

Standard 8: Pollution Prevention and Resource Efficiency		
Would the project potentially involve or lead to:		
8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	Yes
8.2	the generation of waste (both hazardous and non-hazardous)?	Yes
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	Yes
8.4	the use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention*	Yes
8.5	the application of pesticides that may have a negative effect on the environment or human health?	Yes
8.6	significant consumption of raw materials, energy, and/or water?	Yes

[20] Significant displacement and/or resettlement refers here to potential scale. projects involving physical resettlement and/or economic displacement are generally considered High Risk. However where potential displacement and/or resettlement may be minimal, UNDP may determine that its requirements could be met with application of standard best practice and mitigation measures without the need for a full ESIA.

[21] Large dams are defined as those with a height of 15 meters or more from the foundation. Dams that are between 5 and 15 meters high and have a reservoir of more than 3 million cubic meters are also classified as large dams.

Complex dams are those of a height between 10 and 15 meters that present special design complexities, including an unusually large flood-handling requirement, location in a zone of high seismicity, foundations that are complex and difficult to prepare, or retention of toxic materials.

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Annex 7: UNDP Risk Register

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
1	Lack of political will and commitment to support rural electrification through off-grid minigrids by communities with the support of the private sector, and risk of government turnover	Political Regulatory	Without political will, commitment and potential turnover, the nascent minigrid market in Comoros will not develop and private sector involvement and investment will not take off. L = 4 I = 5	• Component 1 to include the conduction of GIS analysis to identify communities eligible for isolated minigrid implementation as well as national grid analysis to identify potential for interconnected minigrid application. The second study could possibly be supported by some AfDB remainder • MINIGRIDs allowed through communities contracting private operators at a negotiated tariff. Hence a way to include private sector (operations) and communities • Will of the DGEME/Ministry to consider MINIGRIDs as part of the electrification efforts and backed by the replicable pilot sites under Component 2	DGEME, Ministry of Economy, Energy and Investments

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
				• Leveraging the recent development of main grid solar power plants by private sector developers with a PPA negotiated directly with the government at specific tariffs • Open to revise the Electricity Code to clarify the MINIGRID delivery model and the related procurement process under Component 1. This would be based on a participatory approach via the creation of a national dialogue platform, as well as South-South Cooperation with the AMP Regional Programme as well as RMI's SIDS expertise in the Caribbean. • Selected pilot sites as part of Component 2 will be supported by a Call for Projects and some CAPEX and OPEX support by the project and co-financiers	
2	Relatively small market outlook and potential due to the relatively high electrification rate and small market size of Comoros (< 900k inhabitants)	Operational	The relatively small size and potential of the Comorian market in terms of minigrids combined with a lack of access to relevant information (no central repository of studies and co) is a substantial hurdle to replicate successful pilot projects across the country. L = 5 I = 5	• Potential for isolated MINIGRIDs and interconnection to the national grid to be covered through targeted studies under Component 1, including GIS and DREI analyses across the country • Innovative financing to support communities incl. existing trusted mechanisms and players incl. microfinance, diaspora remittances, mobile money, etc. as well as new suitable mechanisms based on success stories inland and abroad • Modular sizing approach whereby a subsidy by the project could support a first module of the MINIGRID. Additional modules to cover a larger spectrum of users (and considering the increasing electricity demand trend), would be financed by the community and its backers • Facilitate the centralization of all relevant energy and energy market studies in a central repository at the Ministry to avoid reinventing the wheel and wasting money and time - knowledge sharing (component 4)	DGEME, Ministry of Economy, Energy and Investments, Finance Institutions
3	Competition of fossil-fuel solutions at local level (rural villages)	Operational Social & Environmental	Diesel generation industry could sabotage the development of minigrids in electricity-underserved rural areas in Comoros L=2 I = 3	• Given the high prices of imported diesel, generators and maintenance (spare parts, local know-how) and the insularity aspects of the Comoros (with multiple islands), diesel generators are barely present in rural villages so far. In the pre-selected pilot sites (validated by all relevant stakeholders), there are (almost) no diesel generator (or if any of very small capacity and only for a very limited number of users). • In the case of potential local diesel or petrol generator owners are operating in a given site, alternative income generating activities will be offered to them including related to the renewable minigrid. A case-by-case approach will be favored at minigrid project level. • Renewable power solutions are developing more and more	DGEME, Private sector players, communities

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#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
				including solar home systems, biodigesters, or pico-hydro at rural levels. In addition, solar power plants and a geothermal plant of 3-10MW are planned to support the national grid.	
4	Questionable adoption of affordable and profitable tariffs	Financial Social & Environmental	If the minigrid offered tariffs are not affordable for end-users (especially households/residential) and not profitable enough for private sector developers/operators, the sustainability of the pilot projects and the replication will be jeopardized.	• Subsidized national grid tariff leaves space for MINIGRID private operators to offer competitive prices when CAPEX is not covered by the private sector player • Existing set-up for isolated MINIGRID tariffs enables cost-reflective tariffs • Study on minigrids tariffs to be conducted to facilitate ensuring affordable tariffs for end-users as well as profitable tariffs for private sector developers and operators	DGEME, Ministry of Economy, Energy and Investments, Private sector players, communities
5	Lack of technical standards for RE minigrids and related equipment	Operational Regulatory	Missing technical standards and compliance could negatively impact the proof of concept of pilot site minigrids L = 2 I = 3	• Call for Projects under Output 2.2. on pilot project sites should include clear technical specifications and products and service quality requirements • Government, rural communities and private sector operators will have their capacity built around minigrids, procurement process, minigrid management and operations, quality standards, etc. under Components 1 and 2 • Existing tax incentives on RE products should encompass quality standards to avoid importing lower quality RE products and enforcement measures and means (Component 1) • Technical standards should be included in partners' projects – World Bank's ComorSol as well as SACREEE's standardization efforts	DGEME, Ministry of Economy, Energy and Investments, Private sector players, communities, partners (World Bank, SACREEE)
6	Communities are used to take care of building and operating some public services aspects and have a limited awareness on solar and hybrid minigrids	Social and Environmental	Communities would continue to (try to) find solutions to their electricity problems but not necessarily targeting suitable clean technologies. Hence, an impediment to the minigrid market development. L = 2 I = 2	• During PPG, various stakeholders have been met during stakeholders' consultations & workshops, field missions and a demand profile survey in potential pilot project sites in rural areas. Some preliminary awareness raising, and social acceptance has been initiated • During project implementation, several activities will support social acceptance further: the national dialogue platform (Component 1), the demo projects and national study on productive use (social and commercial) (Component 2), Innovative financing to facilitate both demand and supply of electricity via MINIGRIDs as well as dedicated awareness-raising campaigns and efforts *inter alia* with the support of Telco operators (Component 4)	DGEME, Ministry of Economy, Energy and Investments, Communities
7	Limited availability of quality and affordable hardware	Operational	Hardware risk – quality, warranty, limited availability of quality solar products especially batteries and inverters (linked to technical standards – Risk 4) combined to the nascent solar solutions market (minigrids as well as SHS	• Quality efforts by other partners to develop standards based on international and regional norms (initiated with SACREEE) and as part of the revision of the Renewable Energy Law by the UNDP GEF Geothermal project and the Ministry of Energy tbc • Technical specifications for pilot sites and in relevant	DGEME, Ministry of Economy, Energy and Investments, Customs Directorate,

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
			and more) can have a negative effect on the minigrids operations and user experience. L = 4 I = 4	procurement process to include quality standards to be respected (Component 2) • Building capacity of all relevant players including ministry, SONELEC, customs, private operators and communities around technical and quality specifications of solar products (MINIGRIDs, solar ancillary equipment, etc.) (Components 1 & 2)	Partners (SACREEE, ComorSol), UNDP GEF Geothermal Project
8	Lack of knowledge around minigrids and digital (payment) solutions	Organizational Operational Financial Social & Environmental	Missing knowledge on a given solution always represent a significant hurdle in the acceptation and adoption of the solution, and hence the overall objective of the project. In addition, as innovation is in the DNA of the AMP project, digital aspects are key. While the mobile penetration rate is relatively high (75%), mobile money solutions are still at their beginning but growing both by Telco operators and financial institutions in the country (and also targeting Comoros' large diaspora). L = 3 I = 3	• Efforts in terms of awareness raising (clear communication plan, leveraging efforts made in a previous project with the Indian Ocean Commission). This should also include an effective live awareness raising with all community members of pilot sites to understand how the MINIGRID works and how payment collection, etc. will function • Community of practice based on the national dialogue platform and a digital presence while interacting with other communities of practices (AMP projects and regional project, SACREEE, etc.) of Component 4 will enable sharing of best practices, lessons learned and more • Co-financing and concrete activities with the 2 existing telecom operators in the country. This included SMS awareness-raising campaigns on a monthly abscess over the 48-month implementation (Component 4). Mobile money is offered by one telco operator (and soon by the incumbent telco operator) and a local bank (BDC and BIC Comores soon) which is included in Component 3 on Innovative Financing.	DGEME as PMU, National Dialogue Platform, Telco operators, Financial institutions
9	Limited capacities of local developers and energy service providers	Strategic Operational	The rather limited capacities of local players in Comoros around minigrids (some experience in pico/micro minigrids and mostly in SHS) – in terms of competencies and financing - represents a hurdle to the markets' uptake. L = 3 I = 4	• Cooperation with international developers (see labor risk below) and local energy service providers for knowledge and technology transfer (Component 2) • Facilitating supply financing for local developers contracted by communities for MINIGRIDs (Component 3)	DGEME as PMU, Financial institutions
10	Limited human competencies and knowledge in the country on minigrids (DGEME, SONELEC, labor market)	Strategic Operational	Lack of human competencies on the topic, and hence understanding, support and adoption of minigrids as part of the solution of an available, reliable, affordable and greener power in Comoros may question the entire theory of change of the project and its impact L = 3 I = 5	• Capacity building of government and national utilities to be built in collaboration with the University of Comoros and external expertise incl. in collaboration with AMP Child Project in Burkina Faso (Component 1). The training would be modular to adapt to the needs and knowledge level of the participant. • Capacity building of local private energy services providers and communities on MINIGRIDs, operations and management, awareness raising, etc. will be provided under component 2. As for the government and SONELEC the training would be modular.	DGEME as PMU, local training institutions

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#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
				• Particularly for local private sector operators, knowledge transfer would occur with international minigrid developers and operators. Fact is that today in Comoros, there is only some expertise and experiences in minigrids (especially pico and nano), way more in SHS and solar-based equipment. Hence, a partnership between international developers and local private operators to design, install and operate at least at the beginning of the operations) could be thought of especially for innovative solutions targeted in Output 2.2. • In order to ensure the sustainability of such training, ToT for targeted trainees with high potential will be undertaken for each of the targeted audience: government/SONELEC, private sector energy services providers, communities • At community level, selected youth and women will be in trained to cover basic maintenance of the MINIGRID as well as after-sales service support	
11	Ability of end-users to pay for electricity might be questionable	Financial	The lack of end-user credit scoring mechanism of end-users to pay for initial connection fees, ongoing electricity bills and ancillary equipment, relative low purchasing power especially in remote rural areas (such as in Ouzini, Anjouan), the fact that public services do not pay their power bills in general (agreement with SONELEC) and limited energy-focused consumer finance products may lead to difficulties in collecting money for electricity usage. L = 4 I = 4	• Leveraging the efforts of IMFs such as Meck and SANDUK, co-financiers of the project, very close to the population and with a large customer base in rural areas and some credit data. Mobile money payment is growing but still at its earlier stages (offered by one telco and one bank) • Facilitate consumer finance access and design/adaptation of relevant consumer finance products, including mobile banking and other innovative financing (fintech, service-based and equipment financing by the diaspora, etc.) - Component 3 as well as to be included in the Call for Proposals under Output 2.2. • Promote productive use of energy (businesses) to reduce the risks of non-payment of electricity bills and improve creditworthiness of end-users • Leverage anchor tenants in the private sector (e.g. telco towers) for each site - e.g. Telco operators as co-financiers and using energy for their towers • Electricity for schools and health centers in minigrid areas could be covered by the communities and local taxes based on a local agreement with relevant stakeholders	DGEME, Financial institutions
12	FOREX issues due to the fact that pilot project developers and financial institutions often receive loans and investment in USD	Financial	While the Comorian Franc is fixed with the EUR, volatility exist with the USD and other currencies. Insufficient domestic currency revenues to cover hard currency debt/equity servicing as well as high interest rate and collateral requirements from local financial institutions. L = 3	CAPEX related to project site implementation to be covered by communities according to the Electricity Code. The project will support preliminary CAPEX through a modular approach of MINIGRIDs whereby initiation investment will be supported largely by the GEF and its co-financiers (incl. UNDP) as well as communities' in-kind contributions. Extension of the MINIGRIDs would be supported by additional financing incl. diaspora, other partners and MFF	DGEME

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
			I = 3		
13	Co-financing commitments do not materialize	Financial	Co-financing commitments, expressed in letters, are not binding. Hence due to various parameters related to each co-financier, some could not materialize their pledge. This would lead to reducing the planned impacts of the AMP Comoros project. L = 3 I = 5	• Co-financing commitments have been confirmed by various players including UNDP TRAC (critical for the pilot sites) as well as the government (DGEME), the national utilities SONELEC, a national agency ANADEN and various donors. • Private sector players – financial institutions, telecom operators, energy service providers – have indicated their will to actively participate to the project. This encompasses support to the national awareness campaigns via SMS campaigns with telecom operators, or adapted financing products for both the supply and demand of autonomous minigrids, or trainings on renewable energy and minigrid maintenance by energy service providers • Monitoring of co-financing materialization will be conducted by the PMU and UNDP. Efforts will be made to ensure these commitments do materialize. In addition, during implementation, additional partnerships and co-financing will be sought by the PMU and UNDP supported by the members of the National Dialogue Platform.	DGEME, UNDP, National Dialogue Platform
14	Turbulent political environment and potential high-level turnover along with reduced international pledges on the Plan Comores Émergent	Strategic Political	High turnover of high-level staff at Ministries and Public Companies might lead to changes in terms of AMP project support as well as potential last-minute changes of minigrid pilot sites because of personal interests. Reduced or suspended pledges made in December 2019 by the International Community for the Plan Comores Émergent including for the energy loop might negatively impact Comoros' energy transition. L = 4 I = 4	• Access to energy and RE is a priority in the Plan Comores Émergent 2030 • Selecting pilot sites at PPG phase to avoid any risks of subjective selection at project implementation on an assisted NIM basis and where communities are dynamic and taking care of basic infrastructure themselves (one of the objective selection criteria is the various efforts made by communities to find solutions for public service goods and more) • Complying with and leveraging existing policy on minigrids for communities with a revision of the Electricity Code planned to clarify delivery model, tariffs, procurement procedures, etc. • Focus on rural areas and villages with high replicability rate of installed and operational minigrids across the country • Suitable consumer and supply financing mechanisms put in place (Component 3)	UNDP, DGEME, National Dialogue Platform
15	Persistence of COVID-19 until project start and/or throughout project implementation, and/or spread of similarly communicable diseases among the	Health Operational	COVID-19 has hampered the economic and social recovery post-cyclone Kenneth and might still at project launch and part of its implementation. Priorities are reassessed and procurement delays may arise due to COVID restrictions L = 4 I = 3	• Relying on COVID-19 assessments undertaken in Comoros by UNDP, UN Country Teams and International Financial Institutions (IFIs) • Pilot sites include access to electricity for health centers (when there is a health center) to facilitate lighting, power medical devices, provide clean water, enable cold chains for vaccines and other medications available, sterilization, etc. As health centers are used not to pay their electricity in Comoros, a community tax could support the payment of the	

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
	population (malaria – one of Comoros' main diseases)			electricity bills for public services including healthcare facilities • Pilot sites focus as well as on productive use and households to support productivity and provide social protection to vulnerable populations in rural areas. Electrical clean-cooking appliances could be promoted where suitable • Procurement to be started as early as possible during first half of Year 1 of project implementation	
16	Increased climate change occurrences (cyclones, rain patterns, sea-level rise, deforestation and. Vulcanic and seismic activities) and negative impact on Comoros could lead to delay or abandonment of the project	Environmental	Climate change effects can negatively impact the project: its implementation and sustainability L = 4 I = 4	• Pilot sites design will incorporate the climate risks and suitable solutions with higher security vs. disaster situation (Component 2) • Close collaboration with the GEF/UNDP project: "Strengthening Comoros Resilience Against Climate Change and Variability Related Disaster" to work on improving climate resilience of communities and their infrastructure incl. power by integrating climate change and disaster risk management in the development.	DGEME as PMU, project developers, UNDP

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Annex 8: Overview of Project Staff and Technical Consultancies

Consultant	Time Input	Tasks, Inputs and Outputs
		For Project Management
Local / National contracting		
Project Manager (PM) *Rate: $1,500/month*	Full-time for 4 years *Total value of about $72,000*	The PM will be responsible for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors. <u>Duties and Responsibilities</u> • Manage the overall conduct of the project. • Plan the activities of the project and monitor progress against the approved work plan. • Execute activities by managing personnel, goods and services, training and low-value grants, including drafting terms of reference and work specifications, and overseeing all contractors' work. • Monitor events as determined in the project monitoring plan, and update the plan as required. • Provide support for completion of assessments required by UNDP, spot checks and audits. • Manage requests for the provision of UNDP financial resources through funding advances, direct payments or reimbursement using the FACE form. • Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports. • Monitor progress, watch for plan deviations and make course corrections when needed within project board-agreed tolerances to achieve results. • Ensure that changes are controlled, and problems addressed. • Perform regular progress reporting to the project board as agreed with the board, including measures to address challenges and opportunities. • Prepare and submit financial reports to UNDP on a quarterly basis. • Manage and monitor the project risks – including social and environmental risks - initially identified and submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log. • Capture lessons learned during project implementation. • Prepare revisions to the multi-year work plan, as needed, as well as annual and quarterly plans if required. • Prepare the inception report no later than one month after the inception workshop. • Ensure that the indicators included in the project results framework are monitored annually in advance of the GEF PIR submission deadline so that progress can be reported in the GEF PIR. • Prepare the GEF PIR. • Assess major and minor amendments to the project within the parameters set by UNDP-GEF. • Monitor implementation plans including the gender action plan, the ESMF and the SEP. • Monitor and track progress against the GEF Core indicators. • Support the Mid-term review and Terminal Evaluation process. • Add technical tasks as necessary • Liaise with the AMP Regional Project PMU Staff to request and receive operational and technical support as needed, to participate in activities led by the AMP Regional Project, and share data and information with the AMP regional Project as required.

Consultant	Time Input	Tasks, Inputs and Outputs
		The Terms of Reference (ToR) for this position should include a clear statement indicating that a minimum of 10% of the person's time will be allocated to AMP Regional Project activities. If the PM is also delegated as the 'beneficiary(ies) representative' on the AMP Regional Project board, this should also be included in their ToR.
Project Assistant/ Coordinator *Rate: $800/month*	Full-time for 4 years *Total value of about $38,400*	Duties and Responsibilities Under the guidance and supervision of the PM, the Project Assistant will carry out the following tasks: • Assist the Project Manager in day-to-day management and oversight of project activities. • In charge of M&E and knowledge resources management including project progress, support the production of progress reports ensuring that they meet the necessary reporting requirements and standards, etc. • Oversee and ensure the implementation of the project's M&E plan, including periodic appraisal of the Project's Theory of Change and Results Framework with reference to actual and potential project progress and results. • Assist in the preparation of progress reports. • Ensure all project documentation (progress reports, consulting and other technical reports, minutes of meetings, etc.) are properly maintained in hard and electronic copies in an efficient and readily accessible filing system, for when required by PB, TAC, UNDP, project consultants and other PMU staff.
Administrative Assistant/ Coordinator *Rate: $550/month*	Full-time for 4 years (48 months per year) *Total value of about $26,400*	Duties and Responsibilities Under the guidance and supervision of the PM and Project Coordinator, the Administrative Assistant will carry out the following tasks: • Manage all aspects related to the good functioning of the PMU in relation to all secretarial activities • Provide administrative backstopping to the project team, and also manage project finances • Provide logistical assistance
International / Regional and global contracting		
For Technical Assistance		
Component 1: Policy and regulation		
Local / National contracting		
Local Consultant to support GIS Analysis *Rate: $300/day*	20 days during Year 2 *Total value of about $6,000*	The purpose of this consultancy is to support the GIS national electrification planning international expert in relation to support the replicability and eligibility of other sites in addition to the 3 selected pilot sites and clearly delineate areas for mini grids. The duties include data collection on supply and demand of electricity as well as demographic, social infrastructure, and economic information, stakeholder consultations and site visits.
Local Consultant to support Minigrid interconnection potential *Rate: $300/day*	12 days during Year 3 *Total value of about $3,600*	The purpose of this consultancy is to support the study on minigrid interconnection potential to SONELEC's grid. Close collaboration with SONELEC and its electrification plan is critical.
National Dialogue Platform Organizer & Facilitator	20 meetings over 4 years *Total value of about $6,000*	The purpose of this consultancy is to support the project team with planning, organizing, facilitating the operationalization and meetings of the National Dialogue Platform. The consultant(s) will also act as the point of contact for the National Dialogue Platform, facilitating the work between the members of the Platform as well as with other stakeholders and the PMU.

Consultant	Time Input	Tasks, Inputs and Outputs
Minigrid Policy and Regulations Expert *Rate: $300/day*	25 days over year 1 & 2 *Total value of about $ 7,500*	The purpose of this consultancy is to work together with the international consultant to analyze exiting regulations and policies of relevance to mini-grid development, proposed tariff structures and relevant incentives (incl. customs) to advise the enabling environment required to operationalize the proposed delivery model for mini-grid development. The work will be conducted in accordance with the results of the DREI analyses and other relevant studies. A close collaboration with the DGEME and the National Dialogue Platform is critical.
Training Facilitator and Capacity Building Specialist with background in minigrids and energy policy & tendering *Rate: $200/day*	60 days over 2 years *Total value of about $12,000*	The purpose of this consultancy is to support the project team with conducting the necessary training workshops, and other individual and institutional capacity building activities involved in successful achievement of Component 1. In the preparation of training materials and operations manuals, the consultant(s) will collaborate with the AMP Regional Project and follow the guidance issued by the Communities of Practice (CoPs) to ensure harmonization and knowledge sharing on the activities under Component 1.
Professional services	*Contract value: $16,000*	This service provider will be responsible for conducting a diagnostic study of the existing public programmes to develop a competitive, skilled labor market in minigrids. This includes performing baseline assessment for existing training programmes, researching relevant programmes worldwide and establishing contacts with reputable institutions for potential partnership with national parties. It is recommended that the contract for these services is awarded to a consortium consisting of national and international experts, to ensure quality, contextualization, and knowledge production and transfer.
International / Regional and global contracting		
2 National Dialogue Platform Experts *Rate: $500/day*	7 days in year 1 *Total value $7,000*	The purpose of this consultancy is to provide training and advisory on setting up, operationalizing and moderating a national dialogue platform around energy/minigrids. 2 experts from the successful implementation and operations of the Senegalese national dialogue platform will undertake a South-South Cooperation visit and exchange.
Minigrid Policy and Regulations Expert *Rate: $600/day*	20 days over year 1 & 2 *Total value of about $12,000*	The purpose of this consultancy is to analyze exiting regulations and policies of relevance to mini-grid development, proposed tariff structures and relevant incentives (incl. customs) to advise the enabling environment required to operationalize the proposed delivery model for mini-grid development. The work will be conducted in accordance with the results of the DREI analyses and other relevant studies. A close collaboration with the DGEME and the National Dialogue Platform is critical.
Minigrids Tendering Expert *Rate: $600/day*	20 days over year 1 *Total value of about $12,000*	The purpose of this consultancy is to develop a procedure and templates for tenders and contract templates for minigrid implementation and operation
GIS Expert *Rate: $600/day*	28 days over year 2 *Total value of about $16,800*	The purpose of this consultancy is to conduct a GIS analysis at national level considering the supply and demand of electricity, as well as demographic, social infrastructure, and economic information. This will enable to determine other sites eligibility for minigrid.
Minigrid Interconnection Potential Expert *Rate: $600/day*	12 days over year 3 *Total value of about $7,200*	The purpose of this consultancy is to evaluate the potential of interconnection to SONELEC's national grid for minigrids and make relevant recommendations.
Tariff Expert *Rate: $600/day*	12 days over year 1 *Total value of about $7,200*	The purpose of this consultancy is to analyze the potential tariffication mechanisms as well as the "right" pricing to support the minigrid delivery model's viability.
Fossil-fuel subsidy and market expert	8 days over year 1 *Total value of about $4,800*	The purpose of this consultancy is to assess the impact of fossil-fuel subsidies in Comoros on minigrids tariffs and acceptance of the end-user as well as the viability of the minigrid business model.

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Consultant	Time Input	Tasks, Inputs and Outputs
Training Facilitator and Capacity Building Specialist with background in minigrids and energy policy & tendering *Rate: $500/day*	40 days over 2 years *Total value of about $20,000*	The purpose of this consultancy is to conduct a knowledge gap analysis of institutional capacities at technical, managerial and regulatory levels, in particular to design procurement and tendering processes incorporating cost-cutting levers and innovative business models, developing comprehensive modular training materials, conducting training and ToT
Mini-grid Education and Vocational Training Expert *Rate: $500/week*	*12 days, over 2 years* *Total value of about $6,000*	The purpose of this consultancy is to work with universities and vocational training centers on the development of the certification programmes for min-grid education, including on the formulation of curricula, preparing course material and organizing/conducting ToT for local staff at national institutions.
Contractual services - Companies	*Contract value: $60,000*	The purpose of this consultancy is to conduct a comprehensive quantitative DREI Analysis for Year 1 and to hold roundtables with relevant stakeholders in Year 2.
Contractual services – Companies	*Contract value: $2,000*	These service providers will be responsible for undertaking the feasibility studies (incl. demand assessment and minigrid capacity sizing) for each of the 3 pilot sites as well as social & environmental impact study for the 3 pilot sites combined, in accordance with the Procurement Plan to be developed during Year 1 of project implementation. Local service providers have proven competencies for this.
Component 2: Business Model innovation with private sector engagement		
Local / National contracting		
Productive Use & Value Chain Expert *Rate: $300/day*	20 days in Year 1 *Total value of about $9,000*	The purpose of this consultancy is to maximize the potential for productive use integration into energy-intensive value chains and social activities across Comoros, including in the 3 pilot sites.
Training Facilitators and Capacity Building Specialist with Engineering background *Rate: $200/day*	40 days over 4 years *Total value of about $8,000*	The purpose of this consultancy is to support the project team and the international consultant with developing and conducting the necessary training workshops, and other individual and institutional capacity building activities involved in successful achievement of Component 2. In the preparation of training material and operation manuals, the consultant(s) will collaborate the AMP Regional Project and follow the guidance issued by the Communities of Practice (CoPs) to ensure harmonization and knowledge sharing on the activities under Component 2.
Private RE Services Provider Association Assistant *Rate: $180/day*	36 days over 4 years *Total value of about $6,480*	The purpose of this consultancy is to take care of the bureau and the association, update the website and social media, organize meetings, etc.
Contractual services – Companies	*Contract value: $15,000*	These service providers are training centers that will be responsible for conducting the trainings with the consultants and integrating them in their curricula. As such knowledge transfer and sustainability (post-project) will be ensured.
Subcontract	*Contract value: $56,950*	Professional services related to the installation and annual remote support services, as well as training of local partners, communities, rural electricians at the 3 sites. It is recommended that the contracts for these services are awarded to consortiums involving national and international companies and individuals, to ensure quality, contextualization, and knowledge production and transfer.
Subcontract	*Contract value: $25,000*	Professional services related to organize and communicate on the innovation start-up contest (incl. venue, etc.)
Contractual Services - Companies	*Contract value: $4,000*	Support to the development of the Private Sector RE association and relevant communications strategy and roll-out

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LE MINISTRE

Programme des Nations Unies pour le Développement
MORONI

Le Directeur

Consultant	Time Input	Tasks, Inputs and Outputs
International / Regional and global contracting		
Productive Use & Value Chain Expert *Rate: $600/day*	20 days in Year 1 *Total value of about $12,000*	The purpose of this consultancy is to maximize the potential for productive use integration into energy-intensive value chains and social activities across Comoros, including in the 3 pilot sites.
Training Facilitators and Capacity Building Specialist with Engineering background *Rate: $500/day*	30 days over 2 years *Total value of about $15,000*	The purpose of this consultancy is to develop and conduct the necessary training workshops, and other individual and institutional capacity building activities involved in successful achievement of Component 2. In the preparation of training material and operation manuals, the consultant(s) will collaborate the AMP Regional Project and follow the guidance issued by the Communities of Practice (CoPs) to ensure harmonization and knowledge sharing on the activities under Component 2.
Component 3: Scaled-up financing		
Local / National contracting		
Professional Services	*Total value of about $20,000*	This service provider will be responsible for conduction a study on the general market intelligence on minigrids project (including the results of other studies inc. GIS and DREI analyses of Component 1). The service provide will share the results of the study amongst public officials and finance community
International / Regional and global contracting		
Training Facilitators and Capacity Building Specialists with background in Finance *Rate: $500/day*	25 days over 3 years *Total value of about $15\2,500*	The purpose of this consultancy is to support the project team with conducting the necessary training workshops, and other individual and institutional capacity building activities involved in successful achievement of Component 3. In the preparation of training material and operation manuals, the consultant(s) will collaborate the AMP Regional Project and follow the guidance issued by the Communities of Practice (CoPs) to ensure harmonization and knowledge sharing on the activities under Component 3. ToT will also be included with relevant financial institutions to ensure sustainability (incl. post-project)
Professional Services	*Total value of about $39,000*	This service provider will be responsible for setting up a Minigrid Financing Facility (as part of the Electricity Code and under the MoEIE) to identify existing financing schemes available in the country supporting access and use of energy, design the MFF, that can help domestic financial institutions and local & international mini-grid investors engage in the development and operation of renewable mini-grids in Comoros. The responsibilities under this contract also include the preparation of operational guidance and training manuals for the MFF as well as recommendations in terms of fund mobilization effort and the integration of solar PV-batteries mini-grid systems in existing funding instruments and financing mechanisms. It is recommended that the contracts for these services are awarded to consortiums involving national and international companies and individuals, to ensure quality, contextualization, and knowledge production and transfer.
Component 4: Knowledge Management (KM) and Monitoring and Evaluation (M&E)		
Local / National contracting		

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Le Directeur

Consultant	Time Input	Tasks, Inputs and Outputs
SES Expert *Rate: $200/day*	12 days each per year, over 4 years *Total value of about $9,600*	The expert will be nationally recruited by UNDP and she/he will be responsible for undertaking social and environmental studies related to the activities of the project. Duties and Responsibilities: • Monitor progress in development/implementation of the project ESMF ensuring that UNDPs SES policy is fully met and the reporting requirements are fulfilled; • Oversee/develop/coordinate implementation of all safeguard related plans; • Ensure social and environmental grievances are managed effectively and transparently; • Review the SESP annually, and update and revise corresponding risk log; mitigation/management plans as necessary; • Ensure full disclosure with concerned stakeholders; • Ensure environmental and social risks are identified, avoided, mitigated and managed throughout project implementation; • Work with the M&E officer to ensure reporting, monitoring and evaluation fully address the safeguard issues of the project; • Assist the finance and administration staff by providing technical inputs during the preparation and revision of the Management Plan, Annual Work Plans, periodic reports such as the Combined Project Implementation Review/Annual Project Report (PIR/APR), inception report, technical reports, quarterly reports for submission to UNDP, the GEF, other donors and Government Departments, as required; • Ensure quality control of interventions/outcomes/deliverables; • Document lessons learned from project implementation and make recommendations to the Steering Committee for more effective implementation and coordination of project activities.
Gender Expert *Rate: $200/day*	12 days each per year, over 4 years *Total value of about $9,600*	The expert will be nationally recruited by UNDP and she/he will be responsible for undertaking social and environmental studies related to the activities of the project. Duties and Responsibilities for the Gender role: • Monitor progress in implementation of the project Gender Action Plan ensuring that targets are fully met and the reporting requirements are fulfilled; • Oversee/develop/coordinate implementation of all gender-related work; • Review the Gender Action Plan annually, and update and revise corresponding management plans as necessary; • Work with the M&E officer and Safeguards Officer to ensure reporting, monitoring and evaluation fully address the gender issues of the project.
Local M&E Consultant to support the Mid-term Review (MTR)	Year 3 (Q1) *Total value of about $18,000*	Contracted to support the international M&E Consultant on performing the MTR for the project.
Local M&E Consultant to support the Terminal Evaluation (TE)	Year 4 (Q3 & Q4) *Total value of about $18,000*	Contracted to support the international M&E Consultant on performing the TE for the project.
Contractual services - Companies	*Contract value: $10,000*	This local contractor will be responsible for data collection and development of communications content (including photos and/or video footage) for the preparation of an 'insight brief' capturing (in an accessible format) selected key highlights from a successful national project activity. This insight brief will be developed in a standard format provided by the AMP Regional Project – noting that the fees include translation of the final output from French to English. The AMP Regional Project will also support the dissemination of the Insight Briefs developed by the national AMP projects.
International / Regional and global contracting		

Consultant	Time Input	Tasks, Inputs and Outputs
International M&E Consultant	Year 2 (Q4) *Total value of about $50,000*	Contracted to conduct the MTR for the project, including review of available document, field mission, interviews with stakeholders, providing recommendations, and issuance of the MTR report. Liaise with the AMP Regional Project PMU Staff to request and receive operational and technical support as needed, to participate in activities led by the AMP Regional Project, and share data and information with the AMP regional Project as required. The Terms of Reference (ToR) for this position should clearly indicate commitment not only to the national project but also to the Regional Project's M&E protocols as regards provision of timely reporting data to the regional project staff. The ToR should also include a clear statement indicating that a minimum of 10% of the person's time will be allocated to regional project activities.
International M&E Consultant	Year 4 (Q3) *Total value of about $50,000*	Contracted to conduct the TE for the project, including review of available document, field mission, interviews with stakeholders, assessment of lessons learned, and issuance of the TE report. Liaise with the AMP Regional Project PMU Staff to request and receive operational and technical support as needed, to participate in activities led by the AMP Regional Project, and share data and information with the AMP regional Project as required. The Terms of Reference (ToR) for this position should clearly indicate commitment not only to the national project but also to the Regional Project's M&E protocols as regards provision of timely reporting data to the regional project staff. The ToR should also include a clear statement indicating that a minimum of 10% of the person's time will be allocated to regional project activities.
Contractual services - Companies	*Contract value: $28,700*	National digital convening platform for key stakeholders (10k), Financing platform for running tenders to select minigrid pilot beneficiaries (13k), National monitoring and evaluation platform (remote monitoring & analytics) 300/site/year data collection, storage, and management fee (can vary by number of connections at site); additional training and support of IP & co (3k)
Contractual services - Companies	*Contract value: $35,312*	This service provider will be responsible for supporting the project team with the design and implementation of effective KM and M&E and QA systems and procedures. This includes the development of templates for the team to use in reporting, as well as the design of suitable surveys in English and French, as appropriate.

Annex 9: GEF focal area specific annexes (GHG calculations)

Attached as separate document.