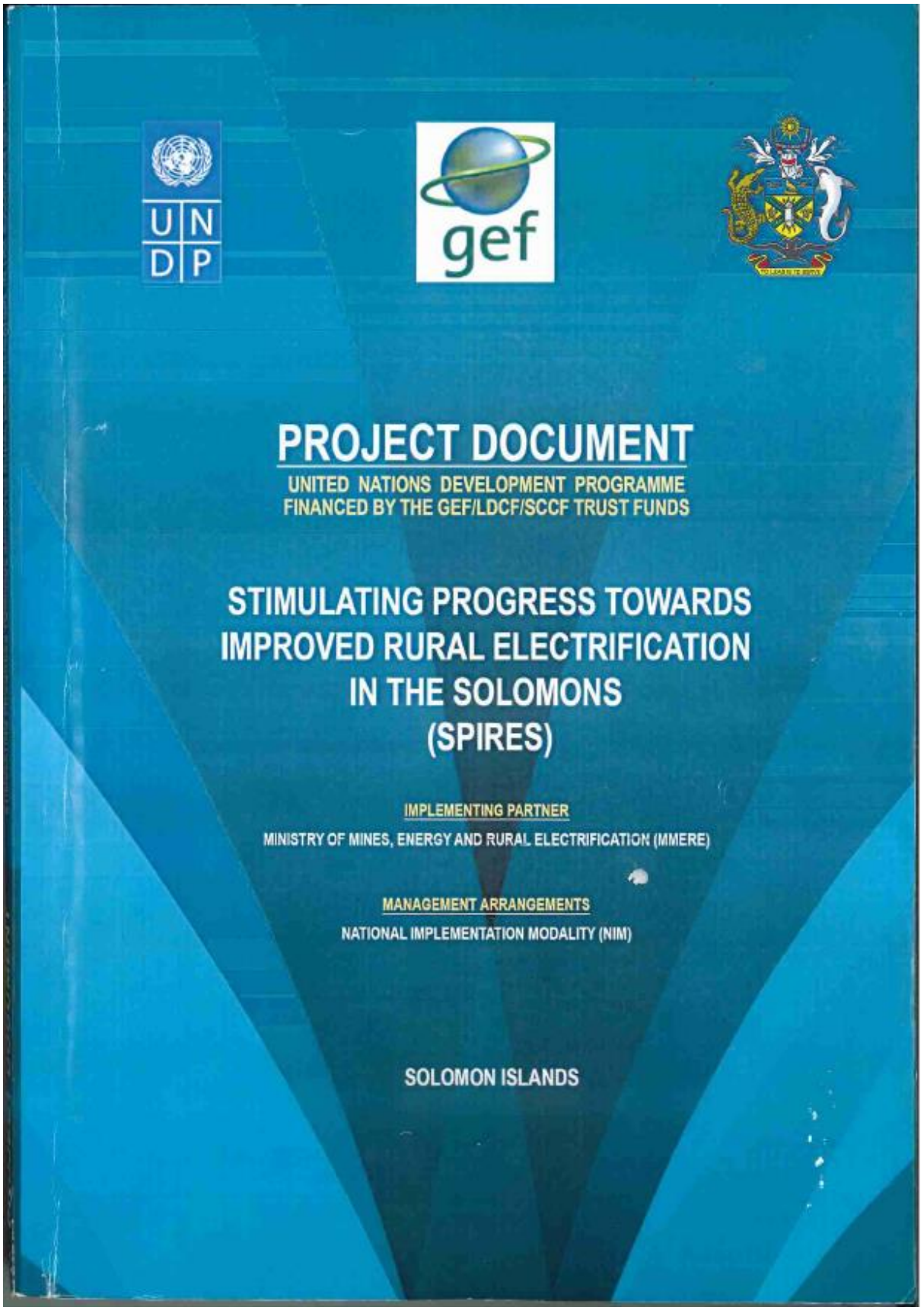
UNDP
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PROJECT DOCUMENT
UNITED NATIONS DEVELOPMENT PROGRAMME
FINANCED BY THE GEF/LDCF/SCCF TRUST FUNDS
STIMULATING PROGRESS TOWARDS IMPROVED RURAL ELECTRIFICATION IN THE SOLOMONS (SPIRES)
IMPLEMENTING PARTNER
MINISTRY OF MINES, ENERGY AND RURAL ELECTRIFICATION (MMERE)
MANAGEMENT ARRANGEMENTS
NATIONAL IMPLEMENTATION MODALITY (NIM)
SOLOMON ISLANDS

STIMULATING PROGRESS TOWARDS IMPROVED RURAL ELECTRIFICATION IN THE SOLOMONS (SPIRES)

Country: Solomon Islands
PROJECT DOCUMENT
United Nations Development Programme
Financed by the GEF/LDCF/SCCF Trust Funds

Project Title: Stimulating Progress towards Improved Rural Electrification in the Solomons (SPIRES)		
Country: Solomon Islands	**Implementing Partner:** Ministry of Mines, Energy and Rural Electrification (MMERE)	**Management Arrangements:** National Implementation Modality (NIM)
UNDAF/Country Programme Outcome: Strategic plan outcome 5. Countries can reduce the likelihood of conflict and lower the risk of natural disasters, including from climate change.		
UNDP Strategic Plan Output: Solutions adopted to achieve universal access to clean, affordable and sustainable energy		
UNDP Social and Environmental Screening Category: Moderate	**UNDP Gender Marker: 2**	
Atlas Project ID/Award ID number: 00092265	**Atlas Output ID/Project ID number: 00097073**	
UNDP-GEF PIMS ID number: PIMS 6089	**GEF ID number: [1] 9787**	
Planned start date: 1 November 2020	**Planned end date: 31 October 2024**	
Expected date of Mid-Term Review: 1 November 2022	**Expected date of Terminal evaluation: 31 July 2024**	
LPAC date: 27 August 2020		
Project duration in months: 48		
Brief project description: The SPIRES Project's goal is reduced annual growth rate of GHG emissions in the energy and energy end use sector of the Solomon Islands. Its objective is the facilitation of the achievement of increased access to electricity in rural communities in the country. It is focused on the enhanced application of low carbon technologies, techniques and practices to support Solomon Islands' rural electrification program, particularly in achieving the set target of 35% electricity access in rural areas in line with the following major strategies: (a) Review, improvement, approval and enforcement of appropriate policy, planning and regulatory frameworks that will support enhanced and accelerated electrification of the off-grid areas in the country; (b) Development and enforcement of suitable institutional and financial mechanisms in the integrated planning and implementation of rural electrification in the country; (c) Development and implementation of cost-effective demonstrations of various schemes for rural electrification in the off-grid areas involving the private sector, CSOs, NGOs and local communities; and, (d) Design and conduct of information, communication and education activities to improve levels of awareness and knowledge of the government, private sector and citizenry on climate resilient and low carbon development of off-grid areas. This will be achieved through the implementation of the corresponding four components: (1) RE and Rural Electrification Policies, Regulations and Planning Improvements; (2) Promotion of RE and Rural Electrification Initiatives; (3) RE Technology Applications for Supporting Rural Socio-Economic Development; and (4) RE & EE Capacity Building. The total cost of the project is USD 19,165,257. This is financed through a GEF grant of USD 2,639,726, and total co-financing of USD 16,525,531 from MMERE, MECDM, MFMR, MHMS, MCILI and UNDP.		
FINANCING PLAN		

[1] Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

GEF Trust Fund	USD 2,639,726
(1) Total Budget administered by UNDP	**USD** 2,639,726
PARALLEL CO-FINANCING *(all other co-financing that is not cash co-financing administered by UNDP)*	
Ministry of Mines, Energy and Rural Electrification (MMERE)	USD 11,416,334
Ministry of Environment Climate Change Disaster Management and Meteorology (MECDM)	USD 1,025,641
Ministry of Fisheries and Marine Resources (MFMR)	USD 3,409,720
Ministry of Health and Medical Services (MHMS)	USD 100,000
Ministry of Commerce, Industry, Labor and Immigration (MCILI)	USD 473,836
UNDP	USD 100,000
(2) Total co-financing	**USD 16,525,531**
(3) Grand-Total Project Financing (1) + (2)	**USD 19,165,257**

SIGNATURES

Signature: print name below MELCHOR MAMAE	**Agreed by Government**	**Date/Month/Year:** 12/11/20
Signature: print name below	**Agreed by Implementing Partner**	**Date/Month/Year:** 12/11/20
Signature: print name below Berdi	**Agreed by UNDP**	**Date/Month/Year:** 12.11.2020

Key GEF Project Cycle Milestones:

Project document signature : within 25 days of GEF CEO endorsement
First disbursement date : within 40 days of GEF CEO endorsement
Inception workshop date : within 60 days of GEF CEO endorsement
Operational closure : within 3 months of posting of TE to UNDP ERC
Financial closure : within 6 months of operational closure

List of Abbreviations & Acronyms

Abbreviation	Meaning
ACSE	Adapting to Climate Change and Sustainable Energy
APR/PIR	Annual Project Report/Project Implementation Review
ADB	Asia Development Bank
BOT	Build operate and transfer
BAU	Business-as-usual
CSO	Civil society organization
CDM	Clean development mechanisms
DFAT	Department of Foreign Affairs and Trade - Australia
EE	Energy Efficiency
ESS	Environmental and Social Safeguards
GESI	Gender Equality Social Inclusion
GEF	Global Environmental Facility
SIG	Government of Solomon Islands
GHG	Greenhouse gases
IRRs	Implementing rules and regulations
JICA	Japan International Cooperation Agency
LDC SIDS	Least developed country, Small Island developing state
LED	Light emitting diode
LFA	Logical Framework Analysis
MW	Megawatt
MOA	Memorandum of Agreement
$MtCO_2$	Million tons CO_2
MCILI	Ministry of Commerce, Industry, Labor and Immigration
MDPAC	Ministry of Development Planning and Aid Coordination
MEHRD	Ministry of Education Human Resources Development
MECDM	Ministry of Environment Climate Change Disaster Management and Meteorology
MFMR	Ministry of Fisheries and Marine Resources
MHMS	Ministry of Health and Medical Services
MID	Ministry of Infrastructure Development
MMERE	Ministry of Mines Energy and Rural Electrification
MPGIS	Ministry of Provincial Government and Institutional Strengthening
MRD	Ministry of Rural Development
MWYCA	Ministry of Women Youth and Children's Affairs
M&E	Monitoring and evaluation
NEPF	National Energy Policy Framework
NIM	National Implementation Modality
NAMAs	Nationally Appropriate Mitigation Actions
NDC	Nationally Determined Contributions
NGO	Non-governmental organization
OFP	Operational Focal Point
PICs	Pacific Island Countries
PALS	Pacific Islands Labeling and Standards Project
PIREP	Pacific Islands Renewable Energy Project
PV	Photovoltaic (Solar)
PMU	Project Management Unit
RE	Renewable energy
RESCOs	Renewable Energy Service Companies
SHS	Solar home systems
SIEA	Solomon Islands Electricity Authority
SINU	Solomon Islands National University
SIWIBA	Solomon Islands Women In Business Association

SP	Solomon Power
SPIRES	Stimulating Progress towards Improved Rural Electrification in the Solomons
TWG	Technical Working Group
ToT	Training of Trainers
UNDP	United Nations Development Programme
WARA	West Are'are Rokotanikeni Association

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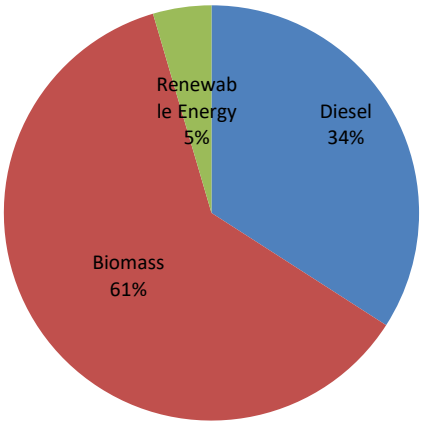
II. DEVELOPMENT CHALLENGE

Context and Global Environmental Significance

The Solomon Islands is an archipelago in South Pacific consisting of about 996 islands. Its total land area is 28,450 km^2), and the total sea area occupied is 800,000 km^2. Of the country's 615,804 citizens and 108,041 households[1], about 80% live in rural villages and 20% in urban areas (80% of which lives in the national capital Honiara. The total population comprises of 317,205 males and 298,598 females. The sex ratio of the population is 106 males per 100 females. During the period 1999-2009, the average annual growth rate (AAGR) of the country's population is 2.3%. In urban areas, the population's AAGR was 4.7%.

The country's economy is comprised of a mixed subsistence sector on which most of the population is dependent, and a small sector dominated by large scale commercial enterprises. In 2010 the economy grew by 7.1% and in 2011 it grew even further by 9.3%. The country's leading export is natural forest timber. Export of this commodity is expected to rapidly decline by 2015 lowering long-term economic projections.

While the country is endowed with some renewable energy resources, e.g., geothermal, hydro, solar, ocean, and biomass, most of these (except for solar and hydro) have not yet been tapped[6]. The country is almost entirely dependent on imported petroleum fuels for electricity generation, for transport (land, sea and air) and for modern energy services at household level. It is heavily dependent on fossil fuel for its commercial energy demand, but biomass still accounts for about 61% of gross national energy production, petroleum products for 34%, and hydropower and solar about 5%.



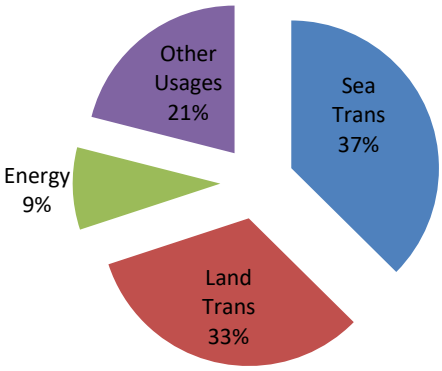


Fig. 1: Energy Supply Mix in Solomon Islands **Fig.2: Petroleum Fuel Consumption**

According to a survey[2] in 2016 to estimate the fully imported petroleum fuel consumption distribution in the country, sea transport constituted more than one-third of fuel usage in Solomon Islands for domestic vessels, outboard motorboats and fishing vessels[3]. Petroleum fuel importation has increased less than 2% annually by volume since 1990 but this commodity constitutes a high percentage of total imports by value, even higher than that of the early 1980s during episodes high oil prices. With the

[1] Based on 2012/13 HIES
[2] Report on the Fuel Consumption Survey on The Sea Transportation Sector in Solomon Islands, 2016
[3] Fishing vessel contributed approximately 51% of the sea transport, while outboard motor contributed about 28% and Domestic vessel uses about 21%.

current policy by the government to support shipping service it is likely that the sea transport fuel consumption will increase significantly.

Biomass remains the main source of national energy source especially in the rural areas[4] and that all urban centers are being provided energy using fossil fuel, hydropower and solar energy. Renewable energy is increasingly becoming the crucial source of energy particularly in the rural areas where solar energy as an important source of light for the households, albeit still very limited if matched with the demand for it.
The presence of solar home lighting supplied under the local government programs, foreign-funded projects or donations of political leaders to constituents (with one to three LED light bulbs, depending on the size), is evident as a trend to introduce better lighting systems or replace the traditional kerosene lamps. In some villages such as in one village visited, the survey indicated 68% of the households are currently having solar home lighting systems installed in varying capacities and operating conditions. It was also observed that there are still many areas for improving the maintenance and sustainability of installed units for the households to gain the expected benefits fully.

Grid-connected electricity (100% diesel-based) is generated and supplied by the state-owned utility Solomon Islands Electricity Authority (SIEA), which supplies electricity to Honiara and 8 provincial centers (Auki, Buala, Gizo, Kirakira, Lata, Malu'u, Noro-Munda, and Tulagi)[7]. The total installed power generation capacity in the country is 30 MW, of which 26 MW is in Honiara —with a peak load of 14.3 MW. The combined installed capacity in the provincial centers is 4 MW. In 2016, the total net electricity generation was 87.45 GWh, of which 81.4% was sold, and 18.6% were distribution losses. Power tariffs in Solomon Islands are among the highest in the Pacific islands.

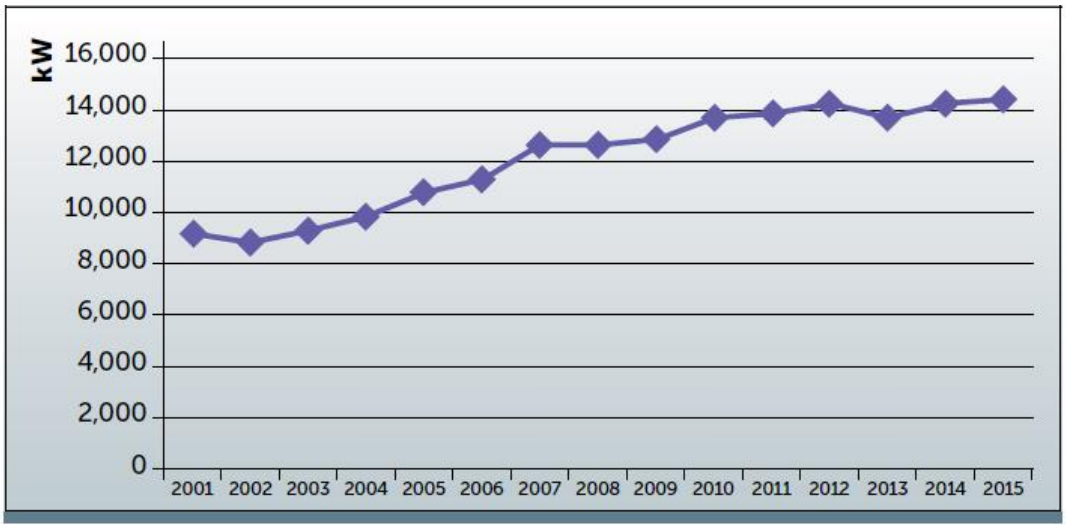


Fig.3: Electricity Demand Growth (Kw) in Honiara in 2001 to 2015

On the part of the Government of Solomon Islands (SIG), it is the MMERE that manages the energy sector policy and set its power tariffs based on government regulations. The current tariffs allow SIEA to recover costs and invest in infrastructure, which is now doing under its restructuring program. Due to the high cost of diesel transport, generation costs in the provincial centers are considerably higher than in Honiara (almost 50%), which has a negative financial impact on SIEA's operations and has

[4] A PIREP Report **(**Pacific Regional Energy Assessment 2004) estimated 2001/2002 petroleum demand of 78 million liters (ML) or 68 kilo tonnes of oil equivalent (ktoe), with transport accounting for 56%, electricity 28%, commerce and industry 15% and direct household use (mostly cooking and lighting) one per cent. About 89% of all households rely mainly on biomass for cooking. Fuel wood burning probably totals about 110 ktoe, with additional biomass used for copra and cocoa drying.

impeded grid expansion. The high cost of electricity and the limited reach of the distribution grid are slowing economic growth in the provincial centers.

In terms of global environmental significance, Solomon Islands is a least developed country, small Island developing state (LDC SIDS) that contributes to a very minimal degree for the unfolding climate change catastrophe, yet it is highly vulnerable to adverse impacts of climate change. It is estimated that in 2015, greenhouse gas (GHG) emissions level from Solomon Islands is approximately 20 $MtCO_2e$/year. This is extremely small, i.e. representing approximately just 0.01 % of global emissions. In terms of per capita emissions, it has a very low level merely at just 1.2 tCO_2 per person. This is fourteen times less than the average per capita emissions of Australia (16.5tCO_2/capita), and less than the estimated level required to stay below 1.5 ^oC (as compared to 2^oC) of warming, of around 1.5tCO_2e/capita[5].Thus, any contribution from Solomon Islands is more than fair, and must be considered ambitious, given Solomon Islands national circumstances. Nevertheless, the country is pursuing an aggressive RE/EE program to address the energy needs of rural population for their electrification requirements.

Barrier Analysis

The main basis of the SPIRES Project is the Solomon Islands' National Energy Policy adopted in 2014 (SINEP 2014) and the National Development Strategy 2011 – 2020 where the country has initially set its targets on electricity access, renewable energy and energy efficiency in line with the development objectives. However, there are various barriers and gaps that prevent the country in achieving these targets, and these must be adequately addressed. While the country has carried out baseline initiatives, the presence of these interrelated barriers hampers the timely realization of the set renewable energy and energy efficiency targets. From the Logical Framework Analysis (LFA) Workshop that was conducted in January 2018, the core problem that must be addressed is the limited access to electricity in rural communities in the Solomon Islands[6].

With the current strategy on awareness raising and information dissemination, the current rather low level of public awareness of cost-effective RE technology applications not only for power applications, and the idea of conserving energy, using renewable energy, and using energy efficiently will continue as in the past. The immediate causes of the core problem include the following:

1) Inadequate enforcement of policies and plan to support application of cost-effective RE Technologies for electricity access in the off-grid areas.
2) Limited financial and institutional support in terms of integrated plans on the implementation of rural electrification and RE-based energy production in off grid areas.
3) Low level of confidence in and application of RE technologies and RE-based power generation to support socio-economic development in off-grid areas.
4) Limited applications of climate resilient and low carbon technologies in providing electricity access in off-grid areas.
5) Low level of awareness and knowledge of the SIG, private sector & communities on cost-effectiveness applications of RE and EE technologies.

Policy, Regulatory and Planning Barriers

The country has a very broad draft national Energy Policy (2013), and for rural electrification there are several broad policies for achieving 35% electricity access in rural areas by 2020. These policies are mostly without the necessary implementing rules and regulations and plans. Hence their enforcement

[5] **World Bank (2011); http://databank.worldbank.org/data/home.aspx**

[6] UNDP-Solomon Islands, Proceedings of the SPIRES Logical Framework Analysis Workshop Report, 30 Jan 2018.

to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands is not adequate. These are results of the lack of formal national policies on renewable energy, energy efficiency and rural electrification, which leads to unclear energy regulatory framework including on rural electrification. The lack of regulatory framework also led very limited stakeholders in the energy sector, apart from the SIG and SIEA. There are no clear policies regarding private sector participation in energy sector, and there are inadequate legislations for consumer protection, price control, fuel storage and handling, water rights and permits for hydro-power systems and power sector regulation. Moreover, because of the informal energy policies, there is lack of formal energy planning work at the national and local levels. There are also no data/information collected that can be used for national energy balance and for energy planning. This situation results to the lack of plans on formal rural electrification development and standards or regulations regarding electricity use and development, despite the government's targets to achieve a rather ambitious level of RE electricity generation. The cause and effect analysis of the above barriers showed that Inadequate enforcement of policies on plan to support application of cost-effective RE Technologies for Electricity access in the Off-grid areas is the main policy/regulatory barrier, and that the 2 root causes are: (1) Limited and weak standards and regulation regarding electricity supply and consumption in Solomon Islands; and, (2) Lack of political will to support sustainable and carbon energy development.

Institutional and Financial Barriers

The main barrier in this aspect of rural electrification in the Solomon Islands is the weak institutional and financial mechanisms in the integrated planning and implementation of electricity infrastructure projects and RE-based electricity production in the off-grid areas. This is due to the MMERE's: (1) limited of permanent personnel and financial resources; (2) limited capacity for energy planning and analysis; and, (3) limited capacity for energy monitoring, reporting, data processing and management to support national energy planning. Poor coordination of rural electrification and RE-based energy generation activities due to unclear institutional arrangements has also led to many stand-alone, fragmented and uncoordinated initiatives in the off-grid areas to implement electricity access projects. RE-based power generation projects in rural communities funded and implemented the communities themselves, or by individual households or private sector entities, by schools (government- and donor-funded), or by NGOs/CSOs were implemented without the benefit of proper design and operations expertise. The results from these initiatives were varied. The implementation of such projects also led to lack of government community service obligation funding for rural electrification, e.g., grid extensions. The government (national and local) also lacks capacity to develop bankable renewable energy technology project proposals that are acceptable to donors or financiers. The causes of the lack of financial resources for RE projects are also manifold. So far, most of the financial support comes from the donor agencies. There are other potential sources of RE project financing, but their contribution is limited due to various reasons, among them are the inability of banks to use customary land as security or equity for loans; low level of participation of the private sector, which is also due to various causes like lack of legislation for Renewable Energy Service Companies (RESCOs), and no incentives for implementing RE projects (e.g., loans/subsidies for RE projects). The relatively high initial costs of RE technology applications has also created a perception among people in rural areas that RE and EE projects are risky investments, especially because there are very low cash incomes in rural communities. The high cost of diesel power generation in the provincial centers, which leave SIEA little incentive to expand the distribution network in the absence of adequate community service obligation funding, not to mention the small, dispersed pockets of population. All the above stems from the following root causes: (1) Limited knowledge and understanding of energy consumers on how to access financing from local and regional banks and financial institutions; (2) High transportation cost for the supply of RE system equipment and

components in outer islands; and, (3) Lack of sustainable socio-economic development support in the off-grid areas.

Technical Barriers

The varied results from various uncoordinated RE technology application projects, there has been low level of confidence in, and application of, RE technologies and RE-based power generation to support socio-economic development in off-grid areas. This has led to limited adoption and implementation of climate resilient and low carbon energy applications in increasing access to electricity. The geographical circumstances of the country (rough terrain, and widely spread islands) isolate large load demand centers from potential RE sources, like hydropower and geothermal sources that can substantially produce base load electricity. Apart from this, there is a serious lack of technical skills and virtually no RE industry except in Honiara. There is lack of technical capacity in the design and operation of RE-based power generation systems (e.g., solar PV systems, mini/micro-hydro power systems), and low local capacity in the design, engineering, operation and maintenance of installed RE-based power generation systems in off-grid areas. These are due to the limited support for increasing local technical knowledge on RE/EE technologies, limited opportunities for local engineering firms to carry out design, engineering and implementation of RE-based energy system projects, and the limited availability of RE system components and parts in the country. The cause and effect analysis of the above problems showed that the root causes of these are: (1) Limited local technical capacity as can be gleaned from the number of operational and qualified ESCOs/RESCOs in the country; and, (2) Limited availability of quality RE system equipment and components in the country.

Awareness & Information Barriers

With a few exemptions, in general, the SIG (national and local), private sector and the general citizenry, particularly in off-grid areas, have relatively low level of awareness and knowledge about the cost-effective application of RE and EE technologies/practices. This is mainly due to the lack of adequate data, including hydrological data for hydropower, and data for geothermal, ocean energy, wind and biomass potential. Even the data on fuel imports and consumption due to non-cooperation from responsible government departments and oil companies are either lacking or not available to the public. The low level of public awareness of RE and EE technologies/techniques in rural areas is due to little or no energy training available locally to help with operating and maintaining any technical capacity developed by electricity access projects, resulting in low level of knowledge of applying feasible RE technologies, and limited reliable information on potential RE resources. The root cause s of all of these are: (1) Poor community participation in or buy-in of RE and EE technology application projects; and, (2) Lack of communication facilities in some outer islands.

Thus, if the core problem is not adequately addressed and solved, the expected immediate effects are poor and inadequate socio-economic development services in the rural and off-grid areas of the country; increased annual growth rate of GHG emissions in the energy sector of the country; and, increased air pollution from the increased utilization of fossil fuels in the energy sector of the country.

III. STRATEGY

Applied Project Strategy

Considering the current approach in improving awareness raising and information dissemination, the current low level of public awareness, particularly in the rural areas about cost-effective RE technology applications not only for electrical energy purposes, and the low level of efforts to conserve energy and use energy efficiently will continue as in the past. If this is not adequately addressed, the country may fall short of reaching its set target of 35% electricity access in rural areas. This may even persist for a much longer period if the current strategy (and lack of appropriate support policies) would remain as the primary feature of capacity building, awareness raising, and information/data generation and dissemination. The opportunities to achieve the 2020 rural electrification target, and for reducing GHG emissions to achieve the country's commitments in its Nationally Determined Contributions (NDC) document, while improving the living conditions of the citizenry will be lost if only the baseline projects/activities will be implemented. The realization of significant GHG emission reduction through the implementation of applicable and feasible RE technologies and EE measures, techniques and practices in support of the rural development of the country will not be realized if an alternative development path that will facilitate the achievement of the rural electrification target will not be taken and facilitated.

Approach to Full Project Design

Based on the initial formulation of the SPIRES PIF which was approved on 30 October 2017 and the UNDP GEF project development procedures, the SIG with the assistance of UNDP has come up with the full project design for GEF-funding on facilitating the development and utilization of feasible renewable energy resources and application of energy efficiency technologies for achieving realistic energy targets in the Solomon Islands. A Logical Framework Analysis (LFA) Workshop, which is one of the required project development activities in the design of GEF-funded projects, was conducted on 23-24 January 2018 at the UNDP Office in Honiara, in coordination with the MMERE, MECDM, and the UNDP-GEF Team of the UNDP Bangkok Regional Hub in Bangkok to design and develop the SPIRES project. It focused on an incremental analysis that determined the developmental gaps in the RE/EE program in the country vis-à-vis the current state of development in pursuing the rural electrification targets to support national socio-economic and environmental goals. The gaps could be on: (1) aspects that are not covered by the baseline projects; (2) modifications (e.g., additional features) that can be done; and, (3) follow-up interventions to enhance the realization of the rural electrification target.

Building on the ongoing and planned rural electrification and RE/EE technologies application projects in the country will involve incorporation of relevant enhancements or modifications to the above-mentioned baseline projects to enhance the realization of not only national benefits but also global environmental benefits through a barrier removal process. For the overall project design, the gaps will be addressed by the project under the different groups of barriers identified. Regarding the policies and regulations, necessary government enactments and guidelines will be pursued. For institutional and financial support, integrated plans that optimize partnerships and co-financing will be developed and adopted. Regarding RE/EE technology applications, pilot demonstrations will be conducted to introduce delivery and market mechanisms to accelerate adoption and sustain operation and maintenance of RE and EE technologies that are applicable to the SOI needs and long term national objectives in energy and environment, For capacity building and awareness, the needs of the stakeholder will be validated and the corresponding training and information programs will be developed and implemented based on needs in line the project's capacity building and knowledge management plans.

The project comprises components that will specifically address each major group of barriers to enhanced rural electrification to support climate resilient and low carbon development of rural communities in the Solomon Islands. Specifically, these components comprise the interventions to enable increased installation of feasible RE-based power generation systems in the country to facilitate rural electrification and stimulate energy efficiency applications to reduce electricity demand in the major end use sectors. The expected outcomes from each project will be realized through the implementation of the project's major strategies.

Alternative Scenario

The facilitation of the achievement of the energy objectives of the country including for rural electrification would not only help the country in its low carbon development path, but also enable the country to have the energy security that it wants for ensuring its citizens' access to reliable and safe energy services. It also enables the realization of Solomon Islands' contribution to the global effort to mitigate climate change as stated in the NDC. With the assistance of the GEF, the proposed project will facilitate the application of appropriate policy, institutional, financial, technological and information-oriented options that would enable the removal of the current gaps in the widespread application of EE and RE technologies in the electricity sector in Solomon Islands that will ultimately also realize the timely achievement of the rural electrification target. Achieving this target is currently hampered by the focus on the SIEA's mainly on-grid projects. RE-based power generation units in off-grid areas are currently being studied and planned (e.g., solar home systems (SHS) for individual houses or decentralized solar PV mini-grid systems serving villages). Moreover, addressing the barriers that are hindering the achievement of increased efficiency of utilizing electricity in specific end use sectors (government, residential and commercial) will result in lower electricity demand. The reduction of electricity demand will also contribute to the achievement of the country's %RE electricity target.

SPIRES will facilitate the realization of the 2020 rural electrification and 2030 %RE electricity targets of the country by removing barriers related to awareness, policy/regulatory, institutional, technical and financial aspects affecting the application of RE and EE technologies in the country. Thus, for this GEF-funded project a barrier removal approach will be applied.

The project focus is on the enhanced application of low carbon technologies, techniques and practices to support Solomon Islands' rural electrification program, particularly in achieving the set target of 35% electricity access in rural areas in line with the following major strategies:

1. Review, improvement, approval and enforcement of appropriate policy, planning and regulatory frameworks that will support enhanced and accelerated electrification of the off-grid areas in the country.
2. Development and enforcement of suitable institutional and financial mechanisms in the integrated planning and implementation of rural electrification in the country.
3. Development and implementation of cost-effective demonstrations of various schemes for rural electrification in the off-grid areas involving the private sector, CSOs, NGOs and local communities.
4. Design and conduct of information, communication and education activities to improve levels of awareness and knowledge of the government, private sector and citizenry on climate resilient and low carbon development of off-grid areas.

These four barrier removal strategies are by and large based on the UNDP's flagship Derisking Renewable Energy Investment (DREI) methodology, which in this project will involve quantitative analysis of the barriers and risks for sustainable off-grid rural electrification in the Solomon Islands. As a tool for the barrier removal activities, this methodology will be applied to come up with the most

cost-effective interventions to mitigate or transfer whatever risks that need to be addressed to facilitate investments, particularly private sector investment, in the rural electrification program of the government. A more detailed risk and barrier analysis (inclusive of quantification of risks and power generation cost modeling), will be done during the project implementation, and in so doing also assist in evaluating the impact of the interventions. The proposed GEF project will also contribute to the achievement of the country's RE and EE targets and NDC commitments.

Innovativeness and Replication

This proposed project will involve the initiatives that will enable and facilitate the establishment of RE-based electricity systems in the off-grid areas of the Solomon Islands that will be far removed from the usual dependency on the government providing electricity access/services in the off-grid areas. In the context of the Solomon Islands, this approach of encouraging community-led, and private sector-financed and commercial business operated energy service provision is considered innovative in achieving the rural electrification objectives of the country. Such approach in a country like Solomon Islands is rather novel because policies and regulations that will facilitate community-based, private sector-financed RE-based electricity systems, as well as energy-integrated development planning are currently non-existent. Moreover, the inclusion of interventions to improve the energy efficiency in the electricity end use sectors of the country as a means of speeding up the realization of the country's %RE and rural electrification targets is also an innovation to the usual approach of PICs like Solomon Islands in RE development and utilization. The Project includes in its target beneficiaries those that could be left behind in the rural areas: including households, villages and institutions (schools).

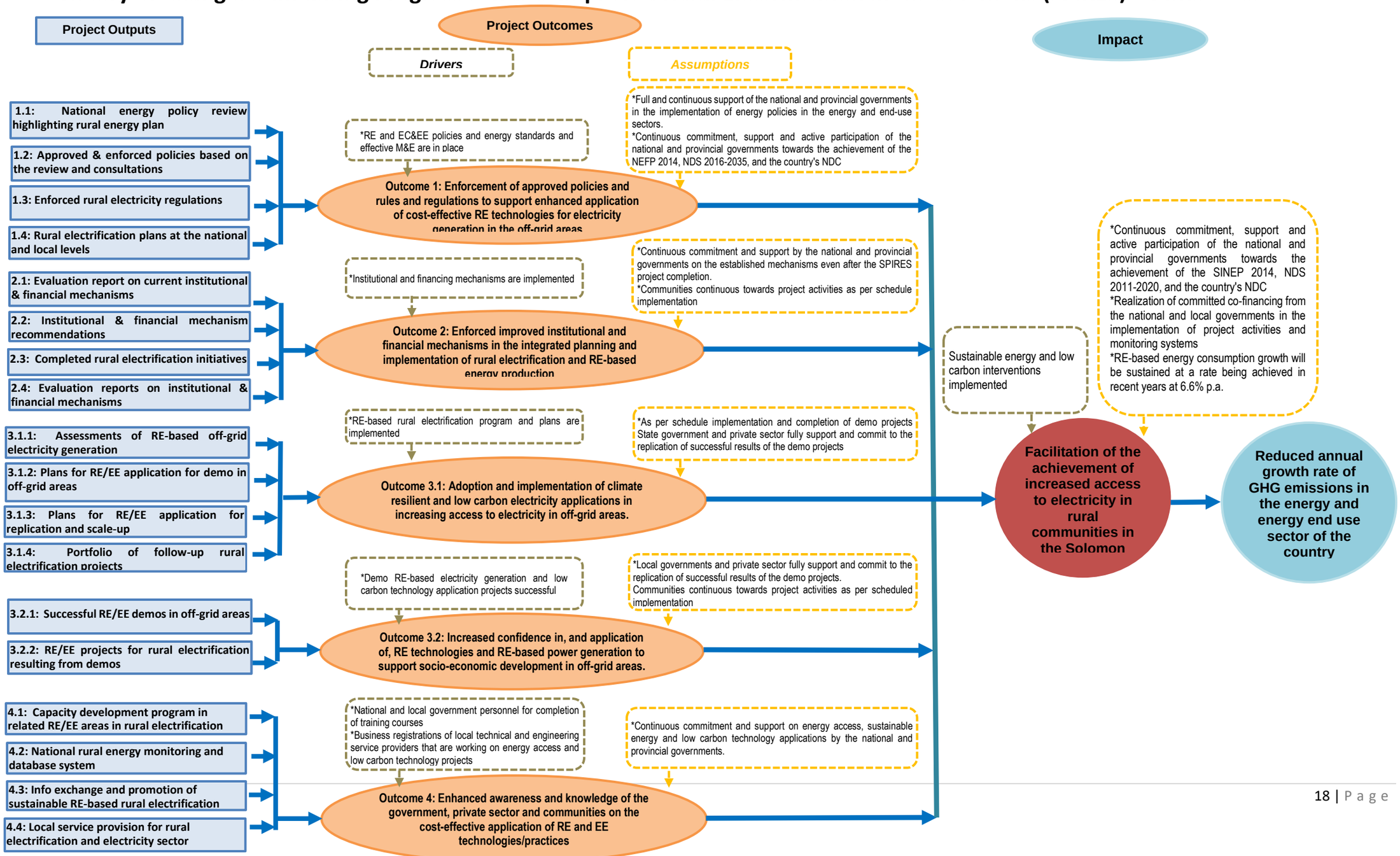
The current low level of electricity access in the country's rural areas presents the best opportunity to scale up and replicate the planned RE-based power generation schemes that will be demonstrated under this project. The successful demonstrations that will be implemented in selected off-grid areas can be replicated as is, or at a scaled-up configuration in the other areas in the other provinces. After all, these planned demonstrations are meant to be replicated and/or scaled-up to achieve the enhanced rural electricity access. The approved portfolio of follow-up rural electrification projects in other major off-grid areas that will be delivered in Component 3 of the project would most likely include those that are scale-up and replication of the demo projects. Best practices and lessons learned that will come out from the project implementation will also be shared with other PICs and SIDS with similar circumstances of the country, thereby ensuring the scaling up of the project interventions beyond Solomon Islands.

The project design has also considered specific findings and recommendations from relevant assessments, evaluations and experiences from other energy projects in the country at various stages of implementation such as electrification projects of boarding schools, which follows the same scheme that were earlier implemented by GIZ and funded by European Governments (Italy, Turkey). There are small community-based RE projects (3 mini-hydros at 50 kW/unit) funded by constituency development funds. Moreover, there are also similar community-based projects that are funded, installed, operated and maintained by CSOs such as the religious institutions. The Japan International Cooperation Agency (JICA) has also funded solar PV power generation projects for SIEA (Improvement of the Honiara Power Supply; and, Lunga Power Generation Development). The United Nations International Children's Emergency Fund (UNICEF) is also implementing a 5-year project (NZD 2.0 million) that involves, among others, the electrification of primary schools in Guadalcanal. SOI has been participating in many regional projects in South Pacific which provide good sources of experiences that were referred to in the development of the project and experiences in providing solutions to rural energy access concerns.

The Theory of Change for the SPIRES Project involves the facilitation of the achievement of the energy objectives of the country focusing on rural electrification as the country pursues its low carbon development path. It illustrates how the realization of Solomon Islands' contribution to the global effort to mitigate climate change as stated in the NDC is enabled and facilitated. With the assistance of the GEF, the SPIRES Project will facilitate the application of appropriate policy, institutional, financial, technological and information-oriented strategies that would enable the removal of the current gaps in the widespread application of EE and RE technologies in the electricity sector in Solomon Islands that is designed to realize the achievement of the country's rural electrification target. The project Outputs under each Component will result to the corresponding expected Outcomes that will collectively contribute to the achievement of the project objective. These Outputs include, among others, those that will demonstrate the commercial applications of RE-based power generation units in off-grid areas that are currently being studied and planned (e.g., solar home systems (SHS) for individual houses such as decentralized solar PV mini-grid systems serving villages and microhydro units and energy efficiency technology application to lower energy demand. Moreover, several activities are designed to address the barriers concerning technology, policy, capacity development and awareness. For each of the Outcomes, the proposed changes in the Alternative Scenario takes into consideration the Assumptions, which refer to the situations and/or requirements that the project should happen and/or be in place to realize these outcomes. Several Drivers are important to realize since these will necessarily push the achievement of the desired results and project impacts in terms of energy savings and GHG emission reductions.

The figure in the next page shows the project's Theory of Change illustrating how the four strategies that lead to four project Outcomes towards the achievement of the Project Objective. The Project Results Framework in **Section VI** also shows another presentation of the integrated and purpose-driven theory of change described above in tabular form with other details such as success indicators (including baseline and target values), means of gauging project success and critical assumptions.

Theory of Change: Stimulating Progress towards Improved Rural Electrification in the Solomons (SPIRES) – PIMS 6089



IV. RESULTS AND PARTNERSHIPS

4.1 Expected Results

Project Goal and Objective

The goal of the SPIRES project is reduced annual growth rate of GHG emissions in the energy and energy end-use sector of the country.

The objective of the SPIRES project is facilitation of the achievement of increased access to electricity in rural communities in the Solomon Islands.

Project Components, Outcomes, and Outputs

COMPONENT 1: RE AND RURAL ELECTRIFICATION POLICIES, REGULATIONS AND PLANNING IMPROVEMENTS

This project component will address the weak enforcement of the rather limited policies and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in the country. The existing and proposed policies and plans will be reviewed in order to develop and support enhanced policies and regulations to boost RE-based electricity generation in the rural areas. National and local policies on renewable energy, energy efficiency and rural electrification within the context of an integrated energy policy and regulatory framework will be embodied in an enhanced national energy bill, that includes improvements in the integrated planning and implementation, institutional arrangements, financial and fiscal incentives and monitoring progress of the rural electricity generation and electrification program. This component will be on the development of and laying the groundwork for enforcement of the formal national master plan and local provincial rural electrification policies, plans and regulatory framework for the country.

Outcome 1: Enforcement of approved policies, and rules and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands

The following are the expected Outputs that will be delivered to result to Outcome 1 and bring about the enforcement of approved policies and the requisite rules and regulations. The table below summarizes the Activities that will be carried out under Component 1 to produce the expected Outputs that will collectively bring about Outcome 1.

Table 1: Component 1 Outcome, Outputs and Activities

Output	Activities
Outcome 1: **Enforcement of approved policies, and rules and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands**	
1.1: Completed review and enhancement of the draft national energy policy, including the proposed policies on renewable energy (RE Policy), energy efficiency (EE Policy) and rural electrification, associated	1.1.1: Establishment of the Technical Working Group (TWG) and technical assistance in the review of the proposed national energy policy and related legislations, institutional and financial arrangements, capacity building, information and awareness programs, gender mainstreaming and other project outputs

Output	Activities
investment plans, and the rural electrification program [N/A][7]	1.1.2: Conduct of policy studies to guide the development of road map, planning model and implementation requirements for the national energy policy and related legislations 1.1.3: Revision of the draft national energy policy
1.2: Formulated, approved and enforced policies, implementing rules and regulations (IRRs) on EE & RE technology applications for rural electrification [N/A]	1.2.1: Formulation and adoption of the national energy policy and program based on integrated development planning and gender mainstreaming to be included in the updated national energy bill 1.2.2: Endorsement and finalization of the national energy bill for passage in the Parliament 1.2.3: Drafting and adoption of the implementing rules and regulations and the necessary monitoring and evaluation (M&E) system 1.2.4: Promotional campaign and lobbying by the MMERE, MECDM and stakeholders in the Parliament for inclusion of the national energy bill in the legislative agenda and seeking its approval
1.3: Recommended, approved and enforced rural electricity regulatory framework [N/A]	1.3.1: Review of policies, develop recommendations and facilitate approval for rural electricity generation regulatory framework and its necessary organizational structure and standards to implement the regulatory framework and policies on pricing, market development and other related areas 1.3.2: Development of implementation and enforcement guidelines for the RE-based rural electricity generation and EE technology application framework and assistance in the establishment of an energy regulatory commission 1.3.3: Design and implementation of agreed upon pilots to test the effectiveness of selected applicable policies and policy & regulatory framework for rural electrification that are novel in the Solomon Islands, but have been adopted and enforced elsewhere in the world, particularly in SIDS. 1.3.4: Implementation and monitoring of the energy regulations including financial and fiscal policies and regulations to support RE-based rural electricity generation and electrification.
1.4: Formal rural electrification plans at the national and local levels [N/A]	1.4.1: Determination and engagement of key actors in rural electrification planning to develop the rural electrification policies and plans at the national and local (provincial) levels 1.4.2: Development and adoption of rural electrification planning methodology and tools involving integrated planning approach, primary data gathering, demand modeling, energy efficiency and techno-economic optimization 1.4.3: Formulation and approval of national master plan and provincial level plans on RE-based rural electrification and EE technology application

Output 1.1: Completed review and enhancement of the draft national energy policy, including the proposed policies on RE Policy, EE Policy, and rural electrification, associated investment plans, and the existing rural electrification program. [N/A]

[7] The Gender Marker is a tool that codes, on a 0-3 scale, whether a humanitarian project is designed well enough to ensure that women/girls and men/boys will benefit equally from it or that it will advance gender equality in another way. If the project has the potential to contribute to gender equality, the marker predicts whether the results are likely to be limited or significant.

Activity 1.1.1: Establishment of the Technical Working Group (TWG) and technical assistance in the review of the proposed national energy policy and related legislations, institutional and financial arrangements, capacity building, information and awareness programs, gender mainstreaming and other project outputs. This involves the creation of inter-ministerial and multi-stakeholder Technical Working Group (TWG) whose members represent the various key stakeholders/players in the area of energy, renewable energy (RE), energy efficiency (EE) and rural electrification that will coordinate and report on related policy issues concerning the residential, industry, financial and public sectors and gender mainstreaming activities. For this component, the TWG is tasked primarily with overseeing the review of existing RE and rural electrification practices in Solomon Islands and in similarly situated Pacific Island Countries (PICs), and the provision of data/information required on assessment of current situation and needs. After its creation, the TWG will be involved in overseeing and coordinating all the activities related to policies and regulations, technology program, capacity building and information towards their adoption and approval as covered under this and the other project components towards the smooth project implementation and realization of project goal. The TWG will back-stop the Project Board in terms of inputs and recommendations for the Board's consideration through the coordination of the PMU.

Activity 1.1.2: Conduct of policy studies to guide the development of a road map, planning model and implementation requirements for the national energy policy and related legislations. This entails the conduct of studies that are focused on RE-based rural electrification, energy efficiency measures, and integrated energy planning and investment guidelines. These studies will consider the unique constraints to the provision of electricity services in rural areas, given their geographical features, and the small scale of government systems and markets of the country. This activity will involve the provision of technical assistance in the review of, and formulation of relevant recommendations to the proposed Energy Bill. Consultations will be carried out with different stakeholders particularly the private sector and the participation of women to capture their respective true sentiments about what major concerns to facilitate RE/EE development must be addressed by the bill including the impacts of the relevant electricity generation and regulation and its implementing rules and regulations. Other potential programs and incentives particularly to include income generating activities and their proposed implementing rules and regulations to accelerate the growth of the RE/EE applications in the rural areas shall also be developed with thorough consultations with stakeholders and recommendations made through the TWG in support of attracting investments in rural electrification projects.

Activity 1.1.3: Revision of the draft national energy policy. This involves the updating and enhancing of the existing draft national energy policy to come up with the revised draft for endorsement to MMERE and to other appropriate government authorities prior to submission to the Parliament. The updating will be based on the results of the policy studies and the recommendations in enhancing the proposed energy policy developed through stakeholder consultations and expert technical assistance that will highlight income generating and investment opportunities in rural electrification projects. This activity will also ensure that in the review and finalization processes of the National Energy Bill (inclusive of the National Energy Policy, RE Policy, EE Policy and rural electrification associated investments) that these are gender-inclusive and outcomes are gender-responsive.

GEF support is required for the incremental technical assistance in the review, consultation meetings and policy studies and revision of the draft national energy policy focusing on RE-based rural electrification.

Output 1.2: Formulated, approved and enforced policies, implementing rules and regulations (IRRs) on RE and EE technology applications for rural electrification [N/A]

Activity 1.2.1: Formulation and adoption of the national energy policy and program based on integrated development planning and gender mainstreaming to be included in the updated national energy bill. This involves the drafting of the necessary national energy policy, legal and regulatory framework and realistic targets for RE and EE and the related legislations into the proposed Bill. The proposed draft will be based on the recommendations of the policy studies and the agreed road map, making sure that the formulated policies are in accordance with the country's goals in the utilization of indigenous resources in various RE forms, electricity generation regulations, demand management and energy conservation, RE-based rural electrification and income generating activities due to enhanced energy access. Discussions with, and guidance by, the TWG will be carried out until the draft is adopted and endorsed to MMERE for its appropriate action[8].

Activity 1.2.2: Endorsement and finalization of the national energy bill for passage in the Parliament. This involves the coordination of the revision and improvement of policies by the TWG, with the PMU as the Secretariat, until these are finalized This activity will facilitate the processes of approval and enforcement of the National Energy Bill (inclusive of National Energy Policy, RE Policy, EE Policy and rural electrification associated investments) are gender-inclusive and outcomes are gender-responsive.

Activity 1.2.3: Drafting and adoption of the implementing rules and regulations and the necessary monitoring and evaluation (M&E) system. This involves the formulation of the implementing rules and regulations (IRRs) for the approved policies. The drafting of the IRRs, while the policies, regulatory frameworks and bill are being evolved and reviewed in parallel, will help clarify the intentions of the Bill[9]. While the Bill is being finalized, the TWG shall regularly update the IRR to incorporate possible changes in the contents of the Bill for eventual endorsement and adoption by the Parliament and the pertinent authorities. This activity also includes the development of the system for the monitoring and evaluation of the impacts of the enforcement of policy, pricing and regulatory measures that are recommended and implemented to promote the use of RE/EE technologies and their applications, including gender-responsive IRRs and standard operating procedures (SOPs) at the national and local level.

Activity 1.2.4: Promotional campaign and lobbying by the MMERE, MECDM and stakeholders in the Parliament for inclusion of the national energy bill in the legislative agenda. This involves the MMERE and the stakeholders carrying out the necessary lobbying for the prioritization of the draft Energy Bill for consideration of the Parliament. Meetings with the TWG shall be regularly done to keep track of developments. This activity involves the promotion of the draft IRR including the modalities on how its various provisions ought to be implemented until the Bill is approved and prepared for implementation and institutionalized for enforcement.

[8] This form of regulatory reform will create commercial incentives for private and public sector power utilities to provide power in rural areas, both through extension of electricity networks, RE-based decentralized power provision and overall comprehensive energy regulatory framework that will pave the way for more investments in rural electrification. The overall regulatory reform will also address problems experienced in existing RE installations regarding the development of standards, acquisition, installation, operation and maintenance of RE-based decentralized systems. The regulatory reform shall focus on the following developmental issues: renewable energy, off-grid energization and electrification, energy efficiency, technical standards, access to clean development mechanisms (CDM) funding and reduction of first costs. The updated national energy bill will therefore focus on three components: renewable energy, off-grid energization and electrification of rural areas and energy efficiency and conservation and their regulatory frameworks.

[9] The TWG and the stakeholders can understand the Energy Bill provisions, and once enacted into law, can be effectively implemented. It will also facilitate communication and ownership with the stakeholders particularly the Parliament. The IRR shall include the regulatory framework and the M&E system to ensure that the intentions of the energy law are properly taken into full consideration.

GEF support is required for the incremental financial support and technical assistance in the formulation, adoption, finalization, endorsement, lobbying and preparation for implementation and enforcement of the energy legislations and IRR.

Output 1.3: Recommended, approved and enforced rural electricity regulatory framework [N/A]

Activity 1.3.1: Review of policies, develop recommendations and facilitate approval for rural electricity generation regulatory framework and its necessary organizational structure and standards to implement the regulatory framework and policies on pricing, market development and other related areas. Following the overall national energy policy development into a proposed national energy bill and its components, a rural electricity regulatory framework shall be initiated focusing on RE-based electricity generation. This activity includes the following:

a. Identification of critical issues for successful realization of rural electricity regulatory framework from previous, relevant studies including institutional, legal, financial and technical standards aspects
b. Analysis of the best international and regional practices in terms of necessary elements of a formal framework to promote and realize REs
c. Review of the existing regulations/policies governing grid and off-grid electricity and RE technology applications in the country including any subsidies applicable to it.
d. Development of a set of criteria to be used for comparing RE-based power with grid electricity or petroleum-based generation in the country including cost, technical capacity and sustainability (environmental, social and economic).
e. Formulation of practical recommendations on regulations, which should be recommended to the SIG to regulate the implementation of RE technologies with appropriate standards as well as put REs on a level playing field with grid electricity.

Activity 1.3.2: Development of implementation and enforcement guidelines for the RE-based rural electricity generation and EE technology application framework and assistance in the establishment of an energy regulatory commission. This activity involves the development of viable and effective ways to enforce the adopted regulations through an implementation plan and organizational structure with the assistance of the PMU and hired consultants. The TWG will be responsible for this. As the National Energy Bill is being deliberated on which includes already the proposed regulatory frameworks and establishment of the mandate for an energy regulatory commission, parallel preparatory work in terms of implementation plans and enforcement guidelines for the RE based rural electricity generation framework will be carried out. The developed guidelines will also include the designation and activation of the Gender Focal Point (GFP) to enforce IRRs to: (a) ensure gender promotion and application of EE; (b) promote role of gender in rural electrification; and, (c) ensure gender responsive national energy planning and energy integrated development planning. This activity involves the conduct of a series of formal and informal meetings with relevant ministries, through the TWG, on the promotion of the formulated policies to familiarize them with the aim of removing financial and non-financial barriers to the widespread application of RE-based electricity generation of Solomon Islands.

Activity 1.3.3: Design and implementation of agreed upon pilots to test the effectiveness of selected applicable policies and policy and regulatory framework for rural electrification that are novel in the Solomon Islands, and but have been adopted and enforced elsewhere in the world, particularly in SIDS.

- *Activity 1.3.3.1: Solicitation and evaluation of ideas for novel rural electrification policies* - This involves the review and discussion of rural electrification policies, including those of provision of incentives, applied elsewhere in the world, but not yet in Solomon Islands (and in PICs/SIDS) by experts and local policy makers. Among the ideas include allowing private sector entities or communities to venture into rural electrification projects in off-grid areas, particularly RE-based

power generation and distribution. Ideas will be discussed with local governments particularly in areas where identified/confirmed demos will be implemented.

- *Activity 1.3.3.2: Design of policy pilots* – The vetted ideas in Activity 1.3.3.1 will be used in this activity. The design will involve liaison with local government and reaching of consensus on location(s) for policy pilots and on the purpose and specifications of such piloting activity. The detailed design of policy pilots (at least 2) will then be carried out, including the pertinent system for monitoring, annual documentation, and dissemination of results. These pilots will involve the implementation of specific innovative policies that will promote rural electrification in off-grid areas in the country. For example, private-owned and operated RE-based power generation and distribution systems. The design and agreement on novel policies will extend the scope of policies in the country for RE-based power generation.
- *Activity 1.3.3.3: Implementation of agreed upon local-level policy pilots* - This includes preparation and approval of required government notices or other documentation, that will facilitate the implementation of the planned policy pilots. This includes outreach to potential entities that will benefit and will be positively affected by the piloted policies such as the private sector and community entities. Note that the implementation of policy pilots will provide proof of concept and lessons learned so that these novel policies can be replicated in other locations in the country.
- *Activity 1.3.3.4: Design and implementation of plan to monitor results of the local-level policy pilots* – This includes documentation and dissemination of the results of the pilots. The monitoring plan will assess the effectiveness of outreach to potential investors and seek to understand how influential the piloted policies were in regards their interest in participating in the rural electrification program of the country.

Activity 1.3.4: Implementation and monitoring of the energy regulations including financial and fiscal policies and regulations to support RE-based rural electricity generation, EE technology application and electrification. This activity involves the support actions to facilitate the passage of the energy bill within the SPIRES timeframe in order to optimize the impact of the entry of more RE-based rural electrification projects. As a follow-through of Activity 1.2.4, this activity will provide further support to MMERE and the government as a whole in laying the ground work for the introduction, launching and implementation of the energy bill as it becomes a law as well as the necessary guidance on the documentation and endorsement of the draft IRR produced in Activity 1.2.3 containing the proposed energy regulations including policies, plans and RE/EE standards to guide their implementation and enforcement. This will be augmented by the capacity building, information and awareness activities in Component 4 of the key stakeholders.

GEF support is required for the incremental financial support and technical assistance in the formulation, adoption, finalization, endorsement, and preparation for implementation and enforcement of the energy rural electricity regulatory framework and initial organizational structure.

Output 1.4: Formal rural electrification plans at the national and local levels [N/A]

Activity 1.4.1: Determination and engagement of key actors in rural electrification to develop the RE-based rural electrification and EE technology application policies and plans at the national and local (provincial) levels. This activity involves the formulation of the formal rural electrification plans, inclusive of rural energy development investment schemes; follow-up for enhancement of rural energy and EE technology application policies, regulations and plans; and consistent commitments by SIG, private sector, donor agencies and local communities, with the assistance of the TWG and support teams at the provincial level to formulate the rural electrification plans and associated investment plans that are also gender-inclusive and outcomes that are gender-responsive.

Activity 1.4.2: Development and adoption of rural electrification planning methodology and tools involving integrated planning approach, primary data gathering, demand modeling, energy efficiency and techno-economic optimization. This activity involves the carrying out the processes underlying electrification planning by first determining the range of possible approaches vis-à-vis what are existing planning methodologies and the required different levels of data inputs for each province. Depending on data availability and methodological differences applicable to a province, the type and amount of primary data to be collected in preparation of electrification planning exercise will be determined according to the situation and needs of each of the provinces. To achieve this, electrification planning will be based on the collection and geographical referencing of data in all the following areas: (i) Existing and planned electricity grid structures, (ii) Location and size of population centers, (iii) Infrastructure in the fields of health, education and economic institutions (e.g. markets, banks, microfinance institutions) and (iv) Assessment of renewable energy potentials. This activity will also involve modeling electricity demand based on the type and quality of available and additionally gathered primary data in line with the two basic approaches existing for demand modeling: Top-down (using econometric methods) or bottom-up (using extensive data for mapping education, health and economic services to model demand). The activity will result to the proposed RE-based rural electrification plans including EE technology application for each province.

Activity 1.4.3: Formulation and approval of national master plan and provincial level plans on RE-based rural electrification including EE technology application. This activity involves the assessment of electrification solutions (network expansion, mini-grid, stand-alone system, etc.) and the optimization of the corresponding installation setups in accordance with the agreed criteria as defined previously in Activity 1.4.2. Based on the PPG exercise, particularly in the selection process for demonstration sites, the locations vary in many respects; therefore, the planning process will have to incorporate additional considerations, e.g. regarding land-use management, availability of financing, social institutions, economic and social impact accounting of energy access and other considerations. Some of the main factors to be considered include geographic parameters such as the availability of energy resources, distance to grid and between localities, or the dispersal of housing in a specific area, topologic expediency and the prevalence of natural constraints (forests, protected areas, etc.). After the assessment of the electricity access solutions is done and the most appropriate approach is selected, the formulation and adoption of the formal rural electrification plans including EE technology application at the national and provincial levels will be carried out. The TWG will be involved in the review and endorsement of the recommended RE-based rural electrification approach and plan for each of the provinces that will be consolidated in a national RE-based rural electrification master plan. Based on the review, the MMERE will decide on the plan of action on the recommendations and formally approve the rural electrification plans in accordance with the set policies and approval guidelines regarding the matter which will be the main output of the activity to be disseminated in Component 4.

GEF support is required for the incremental financial support and technical assistance in the formulation, adoption, finalization, endorsement, and preparation for implementation and enforcement of the national master plan and provincial plan on RE-based electrifications.

COMPONENT 2: PROMOTION OF RE AND RURAL ELECTRIFICATION INITIATIVES

Component 2 will address the problem of weak institutional and financial mechanisms in the analysis, planning and implementation of electricity infrastructure projects and RE-based electricity production in the off-grid areas. The agencies involved still need the knowledge and tools as well as coordinating mechanisms and institutional arrangements in integrating the numerous stand-alone, fragmented and uncoordinated initiatives in the off-grid areas to implement electricity access projects and ensure

proper designs, installation and operation of the RE-based systems. The institutions involved led by MMERE and MECDM will be strengthened in planning, monitoring, evaluation, reporting, data processing and management to support the implementation of the national energy policy and rules and regulations which were formulated and adopted in Component 1. The mechanisms to meet the financial requirements of these systems shall be established through various sources consisting of government community service obligation funding on grid extensions, foreign-assisted projects, private sector participation, bank financing, etc. The experiences gathered in the institutional and financial mechanisms in this Component will feed into the refinements of the policies, regulations and targets set by the Government's integrated plan and implementing guidelines in Component 1 for rural electrification and RE-based energy production in the off-grid areas as guided by the periodic reviews.

Outcome 2: Enforced improved institutional and financial mechanisms in the integrated planning and implementation of rural electrification and RE-based energy production in the off-grid areas

The following are the expected Outputs that will collectively realize Outcome 2 and bring about the enforcement of approved policies and rules and regulations. The table below summarizes the Activities that will be carried out under Component 2 to produce the expected Outputs that will collectively bring about Outcome 2.

Table 2: Component 2 Outcome, Outputs and Activities

Output	Activities
Outcome 2: Enforced improved institutional and financial mechanisms in the integrated planning and implementation of rural electrification and RE-based energy production in the off-grid areas	
2.1: Evaluation report on the current institutional arrangements for the financing and implementation of the rural electrification program of the country. [Gen1]	2.1.1: Evaluation of existing institutional arrangements for financing and implementation of the rural electrification projects in the country with recommendations of institutional and financial mechanisms that best fit for purpose and context of the proposed site demonstrations 2.1.2: Documentation of the existing institutional and financing mechanism arrangements that have the potential to support rural electrification in the Solomon Islands 2.1.3: Establishment of institutional and operational frameworks to support national energy development, planning and implementation
2.2 Formulated and recommended institutional and financing mechanisms that support the enhanced implementation of the rural electrification program [Gen2]	2.2.1 Formulation and introduction of recommended institutional and financing mechanisms to owners or administrators to be hosts of the selected demonstration sites. 2.2.2: Negotiation and development of agreements, understanding and consent from partners and communities on the institutional and financing mechanisms, including a fee collecting system 2.2.3: Establishment of the recommended and institutional and financing mechanism that will best fit the demonstration sites 2.2.4: Design and implementation of a pilot program for micro-financing of solar PV powered appliances and devices to accelerate energy access in rural off-grid areas.
2.3: Completed rural electrification initiatives facilitated by the adopted and enforced institutional and financial mechanisms [Gen2]	2.3.1: Facilitation and operation of the enhanced institutional and financial mechanisms including gender mainstreaming towards increased available sustainable funding for RE in rural demonstration sites 2.3.2: Development of progress and lessons learned reports on enforced institutional and financial mechanisms for dissemination to stakeholders and financial institutions

Output	Activities
2.4: Completed evaluation report on the adopted institutional and financing mechanisms, including suggested policies and strategies for sustaining and/or enhancing the rural electrification program's institutional and financing mechanisms. [Gen2]	2.4.1: Assessment of the effectiveness of the enhanced institutional and financing mechanisms and provide suggested policies and strategies for further enhancing 2.4.2: Further enhancement of the institutional and financing mechanism on the operational side such as including sharing lessons with other schools and communities and development of a guidebook

Output 2.1: Evaluation report on the current institutional arrangements for the financing and implementation of the rural electrification program of the country [Gen2]

Activity 2.1.1: Evaluation of existing institutional arrangements for financing and implementation of the rural electrification projects in the country with recommendations of institutional and financial mechanisms that best fit for purpose and context of the proposed site demonstrations. This includes the evaluation of proposed project sites, e.g. Hunanawa Community water supply financing model, education grant system model and current school financing system that are in operation as well as other RESCOs or sinking funds (for example the Selwyn College fee collection system) operating in the country.

Activity 2.1.2: Documentation of the existing institutional and financing mechanism arrangements that have the potential to support rural electrification in the Solomon Islands. This activity involves the documentation of the institutional and financing mechanisms for proposed electrification demonstration projects, such as in Waimapuru NSS, Pamua NSS and Hunanawa Community, will be produced and printed for the project communities and schools. This may involve the engagement of private sector (Solomon Power and others) to support the fee collection in communities and schools.

Activity 2.1.3: Establishment of institutional and operational frameworks to support national energy development, planning and implementation. This activity involves the integration of the concepts in the planning and implementation of the rural RE-based demonstration projects in the institutional and financial aspects towards building up the national level of energy development, planning and implementation. Based on the principles and policies adopted in the National Energy Policy developed in Component 1, the practical experiences in the demo projects and other baseline projects and the working models of institutional and financial frameworks in other similarly-situated countries, the National Energy Development, Planning and Implementation for the Solomon Islands (that integrates rural electrification in the national context) will be formulated and adopted within the timeframe of the project to guide the medium- and long-term energy development plan for the country as post-project follow-up and sustainability plan. This will include practical institutional and financial mechanisms to be adopted to support the rural electrification program including EE technology application in a sustainable manner to attain the economic and environmental goals of the country.

This will be prepared and endorsed by the Project Board to MMERE for its review, adoption and implementation of the execution phase of the national framework. Consultation meetings and workshops, involving participation of all stakeholders and targeted beneficiaries through an expert and strategic planning facilitator will be organized to develop the comprehensive plan.

GEF support is required for the incremental technical and financial assistance in the conduct of the evaluation of existing or current institutional arrangements and producing the evaluation report at the project level and development of national level institutional and operational framework and organizational structure.

Output 2.2: Formulated and recommended institutional and financing mechanisms that support the enhanced implementation of the rural electrification program [Gen2]

Activity 2.2.1: Formulation and introduction of recommended institutional and financing mechanism to owners or administrators to be host of the selected demonstration sites. This involves the enhancement of awareness/knowledge and introduction of applicable community and school financing models and improving the understanding of owners or administrators of institutions to be hosts of the demos on how to operate these systems, the required resources, contributions from the rural-based institutions etc. As basis for the recommendation, an analysis of macro- and micro-level economic and social benefits of applicable RE-based electrification projects will be conducted. The analysis will evaluate social and economic returns of the different proposed RE-based rural electrification options, linkages to climate change initiatives and potential for scaling-up. Appropriate institutional and financing mechanisms, including practices in other PICs, RESCO operation, sinking funds, etc. will be assessed. Based on the assessment results, appropriate institutional and financing mechanisms will be formulated and introduced to owners and administrators of the institutions or schools to be hosts of the selected demonstration sites, ensuring that current financing models are enhanced and there is significant understanding, ownership and buy-in in the enhanced models.

Activity 2.2.2: Negotiation and development of agreements, understanding and consent from partners and communities on the institutional and financing mechanisms, including a fee collecting system. This activity involves the formulation of the institutional and financing mechanisms through consultations with owners, leaders and constituents at the village or institution level regarding be arrangement that will best suit their needs and applications. The output of this activity is a set of terms of reference of the agreed institutional and financial arrangements and details of the operation, management, maintenance, investment or financing plan, fee collection system and basic commitment to ensuring sustainability and participation of all members, including involvement of women in all possible areas, that will be beneficial for the community or institution.

Activity 2.2.3: Establishment of the recommended institutional and financing mechanism. This involves the design, implementation and establishment of the institutional and financial mechanisms that will facilitate the enhancement of current financing systems that are already in place in the communities and schools in the off-grid and rural areas of the country. For example, integrating fee collection system for energy services into the current system for water supply fees, and establishing RESCOs for electricity services fee collection system in schools, etc. These will be done through the development and selection of appropriate mechanisms adopted to rural electrification and institutionalizing the mechanisms through a special order from the MMERE to establish and implement the approved mechanisms and providing the necessary administrative and other support services to ensure the sustainability of said mechanisms.

Activity 2.2.4: Design and implementation of a pilot program for micro-financing of solar PV powered appliances and devices to accelerate energy access in rural off-grid areas. There are many women and community groups in the country that have been successful in the implementation of a monetary savings program for their members. Some of them have established and managed loan programs for members in acquiring Solar PV home systems, solar PV refrigerators, freezers, pumps, etc. that prove to be very good devices to support socio-economic activities and income generation at the household level. This activity involves the designing and implementation of a pilot program on micro-financing of solar PV powered appliances/devices that builds upon these financing initiatives by enhancing these existing successful financing programs to fund energy access projects in the off-grid rural areas of the country. By integrating these worthwhile practices, determining areas of improvement, conducting the necessary capacity building and opening access to sources of funds have been considered the way to go in increasing the impact and broaden the reach of microfinance assistance for Solar PV home

systems, solar PV refrigerators and Freezers[10]. WARA and SIWIBA are examples of women's groups in this category.

GEF support is required for the incremental technical and financial assistance in the conduct of the institutional and financing models, meetings to negotiate the agreements support for transportation, meeting expenses and consultations.

Output 2.3: Completed rural electrification initiatives facilitated by the adopted and enforced institutional and financial mechanisms [Gen2]

Activity 2.3.1: Facilitation and operation of the enhanced institutional and financial mechanisms including gender mainstreaming towards increased available sustainable funding for RE in rural demonstration sites. This includes the operationalization of the proposed enhanced mechanisms, such as the Hunanawa water and energy fee collection system and the applicable RESCO electricity fee collection system in schools towards increased available sustainable funding. For sustainability, established fee collection systems should sustain the RE technologies beyond the SPIRES project life. The mechanisms that will be adopted shall be based on the promotion of gender-balanced participation and decision-making responsibilities of identified groups such as Community Utilities Committees (CUCs) that are organized in some off-grid areas.

Activity 2.3.2: Development of progress and lessons learned reports on enforced institutional and financial mechanisms for dissemination to stakeholders and financial institutions. This activity involves the documentation of the progress of implementation of the demonstration and pilot activities of the SPIRES Project, particularly on the experiences in the application of the adopted institutional and financial mechanisms. The reported experiences gained, and lessons learned will be evaluated and recommendations for either sustaining or improving such mechanisms will be formulated. This also involves providing access and including female-headed households and other vulnerable groups such people living below the poverty line in project conversations and ensuring that they have equal participation and receipt of information from project discussions.

GEF support is required for the incremental technical and financial assistance in the conduct of the operational of the completed institutional and financing mechanism up to the completion of the project and preparation of monitoring and lessons learned reports.

Output 2.4: Completed evaluation report on the adopted institutional and financing mechanisms, including suggested policies and strategies for sustaining and/or enhancing further the rural electrification program's institutional and financing mechanisms. [Gen2]

Activity 2.4.1: Assessment of the effectiveness of the enhanced institutional and financing mechanisms and provide suggested policies and strategies for further enhancing. This entails the assessment of how successful or how relevant or appropriate the established and implemented institutional and financing mechanisms, evaluating possibilities of what went right and what went wrong. Further to the reports made at the demonstration level provided in Output 2.3, this activity will be involved in integrating all the reports from the demos, evaluate their effectiveness and impact in meeting the projects objectives. The activity will develop recommendations for further enhancing the institutional and financial mechanisms in the light of the lessons learned and recommendations for the benefit of the overall development of the institutional and financing support for the RE-based rural electrification program.

[10] This will be linked to sources of funding (such as UNCDF's "You Save" and UNDP micro-financing (Low Value Grants) and customer groups to increase the impacts and accelerate the access to energy and make services and devices more effective and sustainable.

Activity 2.4.2: Further enhancement of the institutional and financing mechanism on the operational side such as sharing lessons with other schools and communities and development of a guidebook. This involves the improvement of existing relevant funds/financing mechanisms that will be applied in the demonstration activities to promote rural electrification while looking at other parallel projects and initiatives that have tried institutional and financing mechanisms such as RESCOs or Sinking Funds to consolidate relevant experiences. Selwyn College may have also implemented a RESCO and sinking funding system for energy fee collection for sustainable repair and maintenance of the RE systems and upscaling to improved private sector engagement such as Solomon Power or other RE private companies for improved engagement in fee collection system. To further enhance the mechanisms, detailed guidance notes for the conduct of training in Gender Equality Social Inclusion (GESI), good governance and simple management, monitoring, record keeping and reporting for community-based RESCO members from a gender mainstreaming perspective, to be conducted in relevant capacity building activities in Component 4. The results of the assessments and proposed enhancements will be consolidated into a guidebook to provide guidance on the future use of the institutional and financing mechanisms that could be applicable to other proposed rural electrification areas.

GEF support is required for the incremental technical and financial assistance in the conduct of the operational of further enhancements on the institutional and financing mechanism and preparation of the guidebook.

COMPONENT 3. RE TECHNOLOGY APPLICATIONS FOR SUPPORTING RURAL SOCIO-ECONOMIC DEVELOPMENT

Component 3 will address the technical issues that are currently hindering investments on rural electrification in Solomon Islands through the technical assistance and investment-related activities that will be carried out under this component. Based on the results and recommendations of the studies and negotiations with institutions and stakeholders in Component 2.

Outcome 3.1: Adoption and implementation of climate resilient and low carbon electricity applications in increasing access to electricity in off-grid areas.

Table 3: Component 3, Outcome 3.1, Outputs and Activities

Output	Activities
Outcome 3.1: **Adoption and implementation of climate resilient and low carbon electricity applications in increasing access to electricity in off-grid areas**	
3.1.1: Completed DREI assessments of ongoing and planned RE-based electricity generation activities in the off-grid areas [Gen 2]	3.1.1.1: Assessment of RE-based electricity generation options for rural electrification projects in both on- and off-grid areas based on DREI methodology 3.1.1.2: Final selection of rural electrification projects for demonstration based on approved socio-economic criteria satisfying project objective
3.1.2: Improved system for sourcing of high-quality equipment at best cost for low carbon technology system (RE and EE) equipment and components	3.1.2.1: Conduct of assessments to improve the sourcing of equipment and components of RE-based power generation systems, and EE technology applications 3.1.2.2: Conduct of assessments to improve the sourcing of solar home systems (SHS) 3.1.2.3: Identification of quality best price sourcing channels for RE technology application equipment for non-power applications in the off-grid areas (e.g., water desalination, water pumping for agriculture systems)

Output	Activities
	3.1.2.4: Identification of energy efficient and reliable models of key EE technology application equipment for household use and productive uses and determination of high quality, cost effective sourcing channels for each 3.1.2.5: Evaluation of the typical average installed cost breakdown for RE and EE technology application systems in the country
3.1.3 Approved design, engineering, financial and implementation plans for the demonstrations on RE-based electricity generation and EE technology application in the electricity end-use sector in selected off-grid areas [Gen 2]	3.1.3.1: Finalization of the design, engineering, financial and implementation plans for the selected demonstrations on RE-based electricity generation and EE technology application 3.1.3.2: Approval and implementation of the Memorandum of Agreement for the selected demonstrations on RE-based electricity generation and EE technology application
3.1.4: Approved design, engineering, financial and implementation plans for the replication and/or scale up of demonstrated RE-based electricity generation and EE technology applications in other off-grid areas [Gen 2]	3.1.4.1: Evaluation of all project demonstrations (RE and EE technologies applications) and all other rural electrification projects done in the baseline. 3.1.4.2: Documentation of results and formulation of recommendations for the replication and/or scale up of appropriate RE-based electricity generation and EE technology application demos in other rural areas. 3.1.4.3: Development and approval of design, engineering, financial and implementation plans for the replication projects
3.1.5: Approved portfolio of follow-up rural electrification projects in other major off-grid areas, including investment plan [Gen 2]	3.1.5: Development and approval of the portfolio of follow-up rural electrification projects in other major off-grid areas including resource mobilization and identification of technical capacity development needs to support the expanded rural electrification of the country.

Output 3.1.1: Completed DREI assessments of ongoing and planned RE-based electricity generation activities in the off-grid areas [Gen 2]

Activity 3.1.1.1: Assessment of RE-based electricity generation options for rural electrification projects in off-grid areas based on DREI methodology. This activity involves the review and recommendations on RE-based power generation projects and development of innovative strategies for electrification in off-grid areas suitable for the Solomon Islands situation and market configurations. Technology-related issues such as intermittent generation, availability, capacity, hybrid configuration possibility, power quality, reliability, maintainability, interconnection possibilities, demand management, technology transfer, market potential and ancillary services that should be resolved to support investment decisions by private providers, direct consumers or community and institution clients will be evaluated for each RE and EE technology option. This will be done using the UNDP's De-risking Renewable Energy Investment (DREI) methodology to quantitatively analyze the barriers and risks for sustainable off-grid RE-based power generation options[11] in the Solomon Islands to determine the ones (from those options mentioned below) that will be demonstrated in the SPIRES Project. The experiences and lessons learned in the RE projects that were gathered in earlier RE projects as well as the ongoing baseline projects will be considered in the assessment process. The results of the

[11] Based on the available ongoing and planned projects on RE-based energy generation and EE technology applications for the local government, the private sector entities, churches, NGOs, and the communities, the following have been identified: (1) RE-based distributed generation serving mini/micro-grids; (2) RE-based power generation in boarding schools (w/ or w/o commercial sales of excess electricity generated to surrounding villages; (3) RE-based power generation and use in rural infrastructure systems (apart from power generation, e.g., water supply and treatment systems, solid waste management systems, telecommunication systems, etc.; (4) electricity and water system loss management schemes; (5) feasible RE-based energy systems for productive use applications; (6) application of demand side management schemes in provincial/municipal government buildings, EE street lighting, application of pre-paid electric meters in selected villages serve by mini-grids.

assessments will be presented as case studies (including economic evaluation and social cost-benefit analysis), validated, reviewed by the TWG for presentation to the Project Board for decision and be used to select and design the most appropriate RE-based technology to be demonstrated in specific applications that will meet the electrification demands in the rural areas.

Activity 3.1.1.2: Final selection of rural electrification projects for demonstration based on approved socio-economic criteria satisfying project objective. Based on the recommendations of the assessments done in Activity 3.1.1.1, the Project Board will approve firstly the socio-economic criteria that will be used to select the RE-based suitably-sized power generation options for rural homes, community or institutions to qualify for demonstration under the project. Several demo project concepts and designs that have been initially identified during the PPG project development process, will be finalized in this activity through the review and recommendation by the TWG and finally approved by the PB. The selection will consider more importantly the replicability, market potential and suitability to socio-cultural aspects of the selected technology to meet the project objectives. The technology applications demonstration will include technologies that have been proven in the SOI or any similar PIC in the region. The demos will focus on showing the application, financing and delivery mechanisms that will lead to innovative means of providing energy access to rural families instead of just technical piloting. The access to electricity through rural electrification will open possibilities for households, institution or communities in income generation aside from providing for basic human needs, education, community life and gender-related concerns.

GEF support is required for the incremental technical assistance in the evaluation of RE-based electricity generation options and travel and meeting expenses in gathering information and conduct of consultations.

Output 3.1.2: Improved system for sourcing of high-quality equipment at best cost for low carbon technology system (RE and EE) equipment and components

Activity 3.1.2.1: Conduct of assessments to improve the sourcing of equipment and components of RE-based power generation systems, and EE technology applications. This activity involves the conduct of the following:

- Identification of available LC technology system equipment and components available in the country and in the Pacific region – This involves doing an inventory of the various RE and EE technology system equipment such as solar panels, inverters, batteries, and cabling of various sizes needed, taking note of international best prices for desired equipment and prices for sourcing equipment in the Pacific Region for the Solomon Islands
- Assessment of least cost sources of the identified high-quality LC technology system equipment and components – This also include determining the preferred sources of equipment for Solomon Islands via desk work and communication with potential suppliers. A list of priority suppliers with explanations of why they were chosen will be provided.
- Assessment of various options for solar PV power generation schemes that can be applied in the country. This will consider, among others, the containerized options and comparison of prices and quality achievable to the cost of non-containerized approaches. It includes the evaluation of benefits of containerized approaches and the possibility of mechanisms (and their associated costs) for getting containers onshore for outer islands that lack adequate port facilities. An assessment report will be prepared with listing of containerized PV power station suppliers and their prices.
- Outreach to potential suppliers to ensure that high quality best cost suppliers bid on requests for proposals for PV system equipment and components in the competitive bidding for the supply of such equipment/components for the demonstrations. This involves preparation of a report on

feedback from consulted suppliers and recommended follow up to ensure they participate in bidding.

Activity 3.1.2.2: Conduct of assessments to improve the sourcing of solar home systems (SHS). This activity involves desk work that includes:

- Identification of available packaged SHS units available in the country and in the Pacific region – This involves doing an inventory of the best sourcing channels for quality SHSs at lowest price.
- Assessment of quality of identified available packaged SHS units - This involves formulation of recommended minimum specifications based on the inventory of sourcing channels that provide desired quality of equipment at best price. The endorsed list will be made publicly available. Mentoring/ coaching on sourcing will be provided, if requested, to top providers of retail packaged SHS units in the country, including the private sector suppliers and distributors of these products.
- Assessment of the SHS parts needed to be held in inventory in the major outer islands to facilitate timely repair in an economically sustainable fashion. This involves an evaluation of the needs presented by existing stock of SHSs on the outer islands, as well as by the new types of SHSs as determined in the previous assessment. The evaluation findings will be provided to MMERE and provincial governments for use for example in a SIG rural electrification program institutional plan for outer island spare parts inventory.

Activity 3.1.2.3: Identification of quality best price sourcing channels for RE technology application equipment for non-power applications in the off-grid areas (e.g., water desalination, water pumping for agriculture systems). This involves determination of required specifications and sources of RE technology application products on the international market; conduct of research on prices and quality to determine the best sources; direct liaison with suppliers; and encouraging preferred suppliers to bid or partner with bidders on relevant project demos.

Activity 3.1.2.4: Identification of energy efficient and reliable models of key EE technology application equipment for household use and productive uses and determination of high quality, cost effective sourcing channels for each. This activity involves the identification of the relevant equipment of interest, spare parts and materials that may need to be kept on hand to facilitate repair and maintenance; research and analysis of sources; provision of listings of priority sources with explanations of why they were prioritized; and dissemination of findings to potential outer island buyers. Examples of these include freezers, ice makers, cold houses, refrigerators, coconut processing equipment, and, possibly, fans and air conditioners, etc.

Activity 3.1.2.5: Evaluation of the typical average installed cost breakdown for RE and EE technology application systems in the country. This involves the assessment of the installed cost for RE-based energy systems (power and non-power applications), and EE technology application systems, for better understanding of what cost components must be optimized thereby enabling widespread implementation of more reasonable and affordable low carbon technology application projects in the off-grid areas of the Solomon Islands. The cost breakdown evaluation shall be in terms of: (A) Direct Cost (1. Purchase Equipment Cost; and, 2. Direct Materials & Labor Cost); and, (B) Indirect Cost (1. Equipment Purchase Related Cost; 2. Total Installation Indirect Cost (2.1. Total Construction & Engineering Cost; 2.2. Contractors Fee); and, 3. Contingency Cost).

GEF support is required for the incremental technical assistance in the evaluation of current costs of RE-based electricity generation options, assessments of RE equipment sourcing and travel and meeting expenses in gathering information and conduct of consultations.

Output 3.1.3: Approved design, engineering, financial and implementation plans for the demonstrations on RE-based electricity generation and EE technology application in the electricity end-use sectors in selected off-grid areas [Gen 2]

Activity 3.1.3.1: Finalization of the design, engineering, financial and implementation plans for the selected demonstrations on RE-based electricity generation and EE technology application. This activity involves the validation of the conceptual designs of the selected demos to come up with the final technical designs and implementation plans. The implementation strategies will also be confirmed with the selected demonstration hosts of the demonstrations that will be showcased under the SPIRES Project. This activity will be using results of the institutional and financing studies in Output 2.2 considering the negotiations and coordination done with target beneficiaries as well as results of the technology assessments and selection criteria in Output 3.1.1. There will also be data gathering work for the performance monitoring and evaluation of each demo. Among others, operational design and implementation will include new household connections and demand growth, comprehensive metering and records of power generation and demand profiles. The metering shall be separate for each generation type (hydro, solar, wind, diesel or hybrid configurations), and able to measure demand and power quality indicators (voltage, amperage and other parameters) daily, monthly and for the whole year period to produce good profiles of power generation and demand in different seasons and time of day.

Activity 3.1.3.2: Approval and implementation of the Memorandum of Agreement for the selected demonstrations on RE-based electricity generation and EE technology application. This activity involves the documentation of the technical and operational aspects of the RE-based power generation demonstrations. On the demand side, each demonstration will also include application of energy efficiency technologies such as the use of efficient lighting such as LEDs, energy efficient appliances, if the overall power capacity and voltage allow use of such appliances. The MOA will include duties and responsibilities of parties involved in the development of the power system reliability and maintenance improvement measures (generation, transmission, distribution, energy efficiency and conservation, fee collection and general management), the conduct of monitoring and reporting based on agreed procedures and approaches that will be utilized to address the power system reliability issues and possible conflict resolution. The progress of energy efficiency application and practice of energy conservation measures will also be monitored. The PMU will take the lead in the preparation and operationalization of the Memorandum of Agreements (MOAs) in close coordination with MMERE and other partners. This will also ensure that consideration for power system reliability and proper functioning is integrated into the MOA at all stages of planning and operations related to the RE-based system and other parts if a hybrid configuration is adopted. Commitments to safe operation, fee collection, demand side management, energy efficiency and conservation, gender mainstreaming and sound environmental practices will be spelled out in the MOA to form the legal and administrative basis of the project demonstration arrangements.

GEF support is required for the incremental technical assistance in the design, engineering, financial and implementation plans for the demonstrations on RE-based electricity generation and EE technology application, preparation of the agreements and the travel and meeting expenses for gathering information and conduct of consultations.

Output 3.1.4: Approved design, engineering, financial and implementation plans for the replication and/or scale up of demonstrated RE-based electricity generation and EE technology applications in other off-grid areas [Gen 2]

Activity 3.1.4.1: Evaluation of all project demonstrations (RE and EE technologies applications) and all other rural electrification projects done in the baseline. This activity entails the evaluation,

documentation and preparation for dissemination of the results of all implemented RE-based generation and EE technology applications in all demonstrations as well as related baseline rural electrification projects. The results of the evaluation of each demo will be documented summarizing operating performance, RE generation volume, social/environmental/ economic impacts, GHG reduction, best practices, lessons learned, and gender mainstreaming contribution.

Activity 3.1.4.2: Documentation of results and formulation of recommendations for the replication and/or scale up of appropriate RE-based electricity generation and EE technology application demos in other rural areas. Based on the evaluation results in Activity 3.1.3.1, this activity involves the formulation recommendations for improvement and replication potentials. The recommendations will include the identified locations where the potential replications/up-scaling will be carried out. The results of this activity will be consolidated and will provide inputs to Activity 3.1.3.3 and to the pertinent activities in Component 4 for purposes of reporting, information packaging, training, capacity building, dissemination and basis for replication and upscaling.

Activity 3.1.4.3: Development and approval of design, engineering, financial and implementation plans for the replication projects. This activity involves the preparation of plans for the replication and /or scale-up of the RE-based power generation, and EE technology application demos in the identified potential places where these can be technically viable and cost-effectively carried out. The plans will consider lessons learned, best practices from the demos, as well as applicable up-to-date technologies for ensuring enhanced stability, reliability and maintainability of the RE technologies for rural off-grid electrification. The plans will include detailed updated technical design, system controls, financial schemes for the implementation of the replication and upscaling and institutional arrangements that will be attractive to future owners, financiers and operators of RE-based electricity generation for rural off-grid areas. The plans will also consider experiences, best practices and lessons learned from the baseline projects. The designs will specify suitable technology components, their functions, and how these components will integrate or complement with the current and planned power grid with consideration of future generation, increased number of households and grid extension plans. Based on the designs developed and recommended, an implementation plan recommending implementation strategies of the assessed feasible RE-based electricity supply technologies will be developed. The required preparation, activities, responsibilities, timeframe and resources for each phase of the replication or upscaling programs will be defined. This activity will involve all concerned partners, stakeholders, civil society, NGOs and targeted beneficiaries to provide inputs to the engineering designs and implementation plans for the promotion of cost-effective access to electricity, opportunities for gender mainstreaming, participation of the private sector, financing institutions, community leaders, educational institutions, local government, village associations, women empowerment groups and religious institutions. Implementation of the proposed feasible RE-based technologies for rural electrification shall also include proposed contracting arrangements for various types of engagements and the final detailed engineering designs and implementation plans of the selected RE-based technologies and compatibility with the country's grid extension plans will be the responsibility of the developer, contractor, community, institution or direct user.

GEF support is required for the incremental technical assistance in the design, engineering, financial and implementation plans for the replication projects on RE-based electricity generation and travel and meeting expenses in gathering information and conduct of consultations.

Output 3.1.5: Approved portfolio of follow-up rural electrification projects in other major off-grid areas, including investment plan [Gen 2]

Activity 3.1.5: Development and approval of the portfolio of follow-up rural electrification projects in other major off-grid areas including resource mobilization and identification of technical capacity

development needs to support the expanded rural electrification of the country. This activity involves the review of the findings in Activity 3.1.3.2 by the TWG to come up with pertinent recommendations to, and for endorsement by, the Project Board on the mix of RE-based generation and possible hybrid configurations together with engineering control systems, critical parts supply for operation and maintenance, financial and institutional strategies for optimal operation and management and technical capacity development needs (for implementation in Component 4) of the decentralized systems. The primary focus will be on the applications of appropriate and reliable technologies that have been proven in the demos and commercial installations in Solomon Islands and other PICs that can make beneficial applications from variable RE power generation from solar energy, wind energy, biomass, run-of-river mini/micro hydro and other RE systems in off-grid areas.

GEF support is required for the incremental technical assistance in the design, engineering, financial and implementation plans for the demonstrations on RE-based electricity generation and travel and meeting expenses in gathering information and conduct of consultations and preparation of the RE portfolios for main equipment, critical parts and related supplies.

Outcome 3.2: Increased confidence in, and application of, RE technologies and RE-based power generation to support socio-economic development in off-grid areas.

Table 4: Component 3, Outcome 3.2, Outputs and Activities

Output	Activities
Outcome 3.2: Increased confidence in, and application of, RE technologies and RE-based power generation to support socio-economic development in off-grid areas.	
3.2.1: Successfully installed and operational systems of the implemented demonstrations of RE-based electricity generation and EE technology application in the electricity end-use sector in selected off-grid areas [Gen 2]	3.2.1.1: Preparation of bidding documents for the supply of equipment and related materials and services for the selected RE/EE demonstration projects 3.2.1.2: Acquisition and installation of the RE/EE equipment and supplies and debugging of initial operations 3.2.1.3: Operation and maintenance and monitoring of performance and energy delivery for rural electrification in selected off-grid sites
3.2.2 RE and EE technologies application projects designed and financed for implementation as influenced by the results and outcomes of the demonstrations [Gen 2]	3.2.2.1: Development of RE and EE technology application projects based on the demonstration results for increased application of power system performance and reliability enhancement technologies at the investment decision level 3.2.2.2: Designing of other RE-based generation and electrification and EE technology application projects based on the outcomes of the demonstration and financial packaging of projects for funding by banks, individual owners or private sector

Output 3.2.1: Successfully installed and operational systems of the implemented demonstrations of RE-based electricity generation and EE technology application in the electricity end-use sector in selected off-grid areas [Gen 2]

Activity 3.2.1.1: Preparation of bidding documents for the supply of equipment and related materials and services for the selected RE/EE demonstration projects. This activity involves the preparation and finalization of the bidding documents and templates; engineering, procurement and contracting specification and selection of qualified contractors for the selected demonstrations in preparation for the actual acquisition of the RE-based generation facilities and EE technology application for the determined applications. These bidding documents, templates and procedures may not happen during the SPIRES Project implementation, but it would be best of the preparation of the bidding documents, templates and procedures can be used in other RE & EE projects such as the demo replications and scale-ups that are expected to happen after the end of the SPIRES Project.

Activity 3.2.1.2: Acquisition and installation of the RE/EE equipment and supplies and debugging of initial operations. This involves the purchase of the necessary hardware that will be used for each demo based on the system design and equipment technical specifications. Based on each demo project implementation schedule, the installation of the relevant systems/equipment, to be identified and disaggregated, that will be used as per the installation procedures will be carried out. Once the installed system is in place, acceptance testing, and commissioning procedures will be carried out. This activity will involve working closely with the RE/EE equipment suppliers and installation team assuring that they are trained on the installation, operation and maintenance of the equipment and the necessary systems control and reliability instrumentation. Documentation of the actual installation and initial debugging operations with reference to the supplier-provided operation and maintenance manual will be carried out. The experience and adjustments done in actual commissioning and debugging stage will be incorporated in the simplified operating manual for the RE/EE equipment to be developed in this activity including tips and techniques to guide an effective and proper installation and debugging procedure that can be standardized and used for the other RE/EE equipment according to the replication/upscaling plan.

Activity 3.2.1.3: Operation and maintenance and monitoring of performance and energy delivery for rural electrification in selected off-grid sites. This activity involves the initial operation of each demo installation by the contractors and provision of training on the operation, maintenance, operating data gathering, reporting and addressing simple technical operating problems. Based on the guidance of the supplier for optimizing the operation and performance of the RE facility and EE technology application, a simple and easily understood technical operation and maintenance manual will be prepared. If possible, this will be in dual language using the native language in the rural area, and for use in the training and induction of operators and technicians. A system for preventive maintenance and critical parts supply arrangement for replacement of worn out parts and consumables shall be ensured for continuous operation and reliability. This activity will also involve the inclusion in the manual the simplified guidelines and necessary training for the implementation and management of the financial scheme and fee collection for a sustained operation of the RE-based and possible hybrid systems in the rural electrification projects. The activity will also involve the monitoring and evaluation, and preparation of monthly and annual reports on the operation, energy performance, management, fee collection and impacts of the RE-based technology delivery demonstration in rural electrification.

GEF support is required for the incremental technical assistance in the installation and operationalization of the demonstrations on RE-based electricity generation, production of operating and maintenance manuals and posters, travel and meeting expenses in gathering information, conduct of consultations and other related activities.

Output 3.2.2: RE and EE technologies application projects designed and financed for implementation as influenced by the results and outcomes of the demonstrations [Gen 2]

Activity 3.2.2.1: Development of RE and EE technology application projects based on the demonstration results for increased application of power system performance and reliability enhancement technologies at the investment decision level. This activity involves the integration and further development of the results of the evaluation done in Activity 3.1.3.1 for demos and related baseline projects into investment-grade proposals with complete studies on the technical, economic, financial and market aspects of RE-based generation and application for rural electrification to encourage investments and financing and promotion of RE and EE technologies in the country. The results of these studies will be presented and discussed among the stakeholders, partners, targeted beneficiaries, banks, financiers, CSOs, NGOs and other interested parties for their appreciation and

decision making. Based on the studies, implementation strategy, phasing of development and further detailed designs for those highly rated proposals with very good application potentials in line with the country's development program will be recommended. The investment packages will be developed with the involvement of the financial sector drawing from the results of Activity 3.1.3.1. The packages will be promoted and launched by the government as bankable projects that incorporate the best practices in the institutional and financial schemes in Component 2 and the recommendations from the assessment in this Activity 3.2.2.1 to attract both the financial institutions and the investors through the related capacity building and awareness activities in Component 4.

Activity 3.2.2.2: Designing of other RE-based generation and electrification and EE technology application projects based on the outcomes of the demonstration and financial packaging of projects for funding by banks, individual owners or private sector. This activity involves the development and documentation of a package of detailed engineering designs, financing arrangements, partnership and stakeholder involvement, private sector participation, institutional support, gender mainstreaming and implementation plans for priority RE-based power generation application projects and income generating potentials including technical specifications and other supporting information for the engagement and procurement phases. This activity will validate the conceptual designs and engagement of RE technology experts for preparation of the procurement documents before the end of the project. The actual implementation of the plan will be done as post-project program.[12].

GEF support is required for the incremental technical assistance in the design and financial packaging of potential RE-based electricity generation as well as the institutional and human resources support plan and the necessary travel and meeting expenses in gathering information and conduct of consultations.EE technology application projects will be co-financed.

COMPONENT 4: RE & EE CAPACITY BUILDING

Under this component, the solutions that will address the information and capacity issues that are currently hindering investments on rural electrification in the Solomon Islands will be developed and implemented. The expected outcome from the various deliverables that will come from the activities that are planned under this project component is enhanced awareness and knowledge of the government, private sector and communities on the available RE resources such as geothermal, wind, biomass, and ocean energy and the cost-effective application of these resources and EE technologies/practices.

Outcome 4: Enhanced awareness and knowledge of the government, private sector and communities on the cost-effective application of RE and EE technologies/ practices

Table 5: Component 4, Outcome 4, Outputs and Activities

Output	Activities
Outcome 4: **Enhanced awareness and knowledge of the government, private sector and communities on the cost-effective application of RE and EE technologies/ practices**	
4.1: Developed and implemented capacity development program on rural electrification planning, energy-	4.1.1: Carrying out capacity building needs diagnostic on integrated national and rural electricity planning and design, implementation, operation and maintenance of RE/EE technology applications and

[12] A sustainability and institutional plan to support the replication program will be recommended to MMERE and the government for the phased development together with an approved monitoring and evaluation system for the post-project follow-up plan. It will be best if at this final project stage, the National Energy Policy and Program including the financial and institutional support program have been approved and enforced as targeted in Component 1.

Output	Activities
integrated development planning, RE/EE technology application project design, implementation, operation and maintenance [Gen2]	development of a capacity building strategy and design of a comprehensive training program for RE and EE 4.1.2: Implementation of capacity building strategy and design of a comprehensive training program including gender perspectives 4.1.3: Monitoring and evaluation of the implementation of the impacts of the capacity building program
4.2 Designed, implemented and operational national supply and consumption monitoring, reporting and database system, including data/information on the annual energy performance and impact assessment of implemented demos [Gen 2]	4.2.1: Renewable energy resources supply mapping including risk and opportunities for renewable energy investment in the context of national energy supply 4.2.2: Development of consumption monitoring, reporting, database system and impact assessment of demo and baseline projects 4.2.3: Development of suitable business models for communities, institutions and direct RE users including community-based RESCOs
4.3: Operational information exchange system for the promotion and dissemination of knowledge on sustainable energy technology applications in support of rural electrification and low carbon development. [Gen 2]	4.3.1: Establishment and operationalization of knowledge exchange system among RE projects through study visits and internet-based facilities for RE facility owners, stakeholder representatives, RESCO members, developers, project implementers and users of sustainable energy applications 4.3.2: Development of capacity to analyze and apply concepts learned on feed-in-tariffs, green certificate trading systems, incentive models for RE in support of rural electrification 4.3.3: Development of capacity to analyze and apply concepts learned on financial schemes to promote socio-economic aspects of RE to reduce poverty through rural electrification and support low carbon development
4.4: Established local service provision industry that supports the rural electrification program and the rural electricity sector [Gen2]	4.4.1: Establishment of and support for local service industries on RE/EE technology application, energy production, and equipment supply and maintenance 4.4.2: Development and implementation of a vocational training program for technicians and piloting of relevant courses at SINU on RE/EE technology applications in rural areas 4.4.3: Establishment, mobilization and development of suitable business and operation model for RE-based rural electrification and EE technology application projects in off-grid villages

Output 4.1: Developed and implemented capacity development program on national and rural electricity sector planning, energy-integrated development planning, RE/EE technology application project design, implementation, operation and maintenance [Gen2]

During the first half of the 3-year implementation period of the project, a comprehensive capacity building and training program will be designed, organized and conducted for relevant agencies and responsible personnel in national energy development, planning and implementation.

Activity 4.1.1: Carrying out capacity building needs diagnostic on integrated national and rural electricity planning and design, implementation, operation and maintenance of RE/EE technology applications and development of a capacity building strategy and design of a comprehensive training program for RE and EE. This involves the conduct of a human resource capacity gap analysis and training needs assessment before the design of the appropriate training program to incorporate different training strategies and modalities. The design of the training program will be based on the conceptual approach initially developed in Activity 2.1.3 regarding the institutional and operational frameworks and the requirements to support national energy development, planning and implementation. This also includes the organization and conduct of training/workshops for identified levels, hands-on advanced technical training (e.g. training workshops on national energy

supply/demand balance assessment, energy planning tools, national electricity supply development, rural electrification modeling and infrastructure planning, energy modeling, field trips or study visits on existing RE-based rural electrification installations. This assessment will be guided by the Chief Technical Advisor (as an international technical RE/EE specialist), among his/her other functions, to be done within the first half of the project implementation. The basic output of this activity is the development and approval of a capacity building strategy and comprehensive training program for RE and EE (to include public, private and rural communities).

Activity 4.1.2: Implementation of capacity building strategy and comprehensive training program including gender perspectives. This involves the implementation of the approved capacity building program involving development of appropriate training materials, on-the-job training activities for each demonstration project and organization of a seminar/workshop to specifically discuss and promote the results of the demonstration projects. It is envisaged that the capacity building program for demonstration project personnel will be completed by the middle of the 3-year implementation period with a continuing plan to sustain availability of the human resources and a back-up plan in case of transfers or resignations. In coordination with Activity 2.4.2 regarding GESI training program development, the implementation of capacity development and training program in this Activity 4.1.2 shall include, among others, (a) Livelihood training for women (sewing, baking, cooking, fisheries seafood trainings, financial literacy, banking) and for men in ice-making, joinery and other relevant trainings and (b) Basic solar system training and training of trainers for women technicians. The implementation of on-the-job training activities will address all key elements of each demonstration project, including financial arrangements, detailed engineering designs, equipment procurement, construction, installation, commissioning, debugging, operation and maintenance.[13]

Activity 4.1.3: Monitoring and evaluation of the implementation of the impacts of the capacity building program. The evaluation of the training program will be carried out in two stages: (1) through immediate quantitative and qualitative evaluation after each training activity, and (2) impact evaluation of energy development, planning and implementation delivered by trainees from the key stakeholders and agencies involved. A seminar/workshop to discuss and promote the results of all demonstration projects as well as progress in the base line projects will be organized as part of the monitoring and evaluation (M&E) activities of all the RE-based projects and EE technology application in the country. In the seminar or workshop, the hosts of the RE-based demonstration will report on the accomplishments of the pilot demonstration that was implemented highlighting main experiences, best practices, lessons learned, and their recommendations for development and implementation of more RE projects in Solomon Islands. Representatives from other demonstration projects and other stakeholders involved in in the baseline projects will also be invited. Further, an overall impact evaluation will be carried out at mid-term in order to determine means to improve the program and before closing of the project in order to assess the impact of the capacity development program. Recommendations for continuing the capacity development program after the project shall be endorsed to MMERE and a commitment to carry out and improve the follow-up training program shall be part of the post-project arrangements and exit strategy to ensure sustainable RE program for the replication plans.

[13] Depending on the needs analysis in Activity 4.1.1, the following topics will be covered in the training program to be validated by the needs analysis in Activity 4.1.1: (a) Understanding of the design of each demonstration of RE/EE energy technologies for power generation and application to households and income generation possibilities, (b) Mastery of the Operations and Maintenance manual developed for the demo project, (c) Routine operation and maintenance of the RE demonstration and application installation, (d) Simple trouble shooting and maintenance; and (e) operations data gathering, logging and reporting of all critical operational experiences. The implementation schedule of the classroom training and on-the-job activities including review and updating session every six months each year will be developed and approved to be updated regularly.

GEF support is required for the incremental technical assistance in the developing, design and evaluation of the capacity development for key stakeholders and agencies of RE-based electricity generation and EE technology application and the necessary travel, conference and meeting expenses in gathering information, conduct of consultations and seminar/workshops.

Output 4.2 Designed, implemented and operational national energy supply and consumption monitoring, reporting and database system, including data/information on the annual energy performance and impact assessment of implemented demos [Gen 2]

Activity 4.2.1: Renewable energy resources supply mapping including risk and opportunities for renewable energy investment in the context of national energy supply. This activity involves the review and validation of the different RE resources, including solar, wind, geothermal, biomass, hydro and ocean/tidal energy, in terms of economically exploitable potentials, location and possible developers to ascertain the RE supply base for rationalizing the targets and timeframe of development opportunities. Based on the results of assessment, consultation with key stakeholders and communities, a RE resource mapping will be developed and the data/information gathered will be stored in a database system for use in integrated planning, monitoring and reporting for achieving the targets set. Using a set of criteria for prioritizing the RE resources for sustainable development, the sites will be evaluated, classified and documented as a resource inventory indicating quantity, capacity and duration of the RE generation to support access to electricity supply in rural areas which will be made available for information of potential investors, developers, banking and financing institutions and direct institution and community users. This will also be the basis for the government through MMERE to issue development permits for registration and possible support in developing the resources and arranging for the financial requirements as may be necessary.

Activity 4.2.2: Development of consumption monitoring, reporting, and database system and impact assessment of demo and baseline projects. This activity involves the integration of the results of the RE resource assessment, mapping and database development and information and data systems for RE/EE technology application in the overall existing energy system of the country. This is to come up with the overall national energy supply and demand planning capability along the principles and policies provided for the national energy policy and program to support the socio-economic objectives of the country. This activity also involves analysis of the social, economic and environmental aspects of RE-based electricity generation and application of available RE resources such as solar, wind, biomass, hydro and geothermal energy. In this connection, the activity will also involve the technical and economic evaluation of applicable technologies for RE-based power generation in rural setting. The evaluation will be based on the findings and recommendations in Activity 4.2.1. The activity also involves the integration of the databases and info systems regarding improved configurations of more stable RE-based power generation and distribution technology e.g. micro/mini grid with possible interconnection or decentralized systems for individual users, educational institutions or communities. The integration process will aim towards having reliable, safe, environment-friendly and cost-effective generation and access to electricity to support basic human needs, opportunities for women involvement and benefits and therefore also increase the RE share in the overall power generation mix of the country.

Activity 4.2.3: Development of suitable business models for communities, institutions and direct RE users including community-based RESCOs. This activity involves the study and design of various options for sustainable business models to develop and utilize RE resources for supporting rural electrification and productive uses of energy for income generating possibilities. The assessment of business models including RE service companies (RESCOs) that have been applied in Solomon Islands or in other PICs shall recommend pricing guidelines, alternatives for public-private partnerships, financing options, procurement of equipment and replacement parts and logistics support to rural

areas. The activity will also develop and provide technical advice, information, capacity building and financial incentives to encourage RE development for rural electrification and income generating possibilities involving women participation of women to encourage gender mainstreaming especially for remote areas where there are significant number of households surrounding communities and institutions through a combination of project and government assistance.

GEF support is required for the incremental technical assistance in the developing and design consumption monitoring, reporting and database system, including data/information and the necessary travel and meeting expenses in gathering information and conduct of consultations.

Output 4.3: Operational information exchange system for the promotion, on sustainable energy technology applications in support of rural electrification and low carbon development [Gen 2]

Activity 4.3.1: Establishment and operationalization of knowledge exchange system among RE projects through study visits and internet-based facilities for RE facility owners, stakeholder representatives, RESCO members, developers, project implementers and users of sustainable energy applications. This activity involves the development, installation and operation of a knowledge exchange systems to support the overall RE-based rural electrification and low carbon initiatives. In addition, a website will be developed to serve as base for a knowledge exchange system. The SPIRES website (to be adopted by MMERE as it fully developed) will be integrated with database, communication tools and user management system in cooperation with other RE-related projects starting with the members of the Project Board. This will enable the MMERE to effectively facilitate implementation of RE policy and legal frameworks. The SPIRES website will also be designed to support monitoring and reporting of RE resource supply and consumption in Solomon Islands at the national and provincial levels. To assist in design, development, operation and maintenance of the website, an information technology and database expert will be engaged in coordination with other stakeholders. Other RE-related or baseline projects will also be included in the system for monitoring purposes. Related capacity building and training for sustained operation of the knowledge exchange system and data base management will be provided by the project. Such network will also consult and coordinate with the Global Renewable Energy Islands Network (GREIN), which is a network that help SIDS in accelerating their renewable energy uptake, serving as a platform for pooling knowledge, sharing best practices and seeking innovative solutions for the accelerated update of clean and cost-effective renewable energy technologies in island states and territories.

Activity 4.3.2: Development of capacity to analyze and apply concepts learned on pricing, feed-in-tariffs, green financing, and incentive models for RE in support of rural electrification. This activity involves the review of national and international experiences on possible schemes that could be adopted for the promotion and implementation of RE and EE technologies in Solomon Islands including studies in electricity pricing, feed-in-tariffs, green financing, incentive models for RE and other market development support to promote RE application in rural electrification as part of the capacity building for MMERE, MECDM and key stakeholders. Results of these studies can feed into the development of the national energy policy and program to be incorporated in the proposed energy bill as planned in Component 1.

Activity 4.3.3: Development of capacity to analyze and apply concepts learned on financial schemes to promote socio-economic aspects of RE to reduce poverty through rural electrification and support low carbon development. In this capacity development activity the applicable financial schemes will be determined from available experiences to orient MMERE, MECDM, and other stakeholders on these experiences to promote the application of RE- based electricity generation for rural electrification in Solomon Islands. Such schemes are intended to address the barriers to investments in RE and EE technologies and leverage with existing and planned socio-economic development program for the

country in line financing support to RE projects. This will include risk sharing schemes, such as a partial credit guarantee or a co-financing scheme and financial schemes to promote potential financing instruments to support RE/ EE investment in Solomon Islands. A promotional activity will be designed and implemented to promote the proposed financial schemes and participation of banks and financing institutions, potential investors in RE projects and potential beneficiaries throughout Solomon Islands.

GEF support is required for the incremental technical assistance in developing and design information exchange system for the promotion and dissemination of knowledge and the necessary travel and meeting expenses in gathering information and conduct of consultations.

Output 4.4: Established local service provision industry that support the rural electrification program and the rural electricity sector [Gen2]

Activity 4.4.1: Establishment of and support for local service industries on RE/EE technology application, energy production, and equipment supply and maintenance. This activity involves the development of the local service industry in all aspects of the supply chain in acquiring, installing, managing, operating and maintaining RE-based systems for rural electrification with involvement of the communities, entrepreneurs and social institutions interested in developing electrification projects in the rural areas. Firstly, the conduct of detailed technical assessment and validation of the RE resource power generating capability (solar, mini/micro hydro, biomass, wind and other RE resources) shall be done with the help of service providers that will be authorized with the help of MMERE technical team. Secondly, an assessment of the capacity and available human resources of the potential project proponents of RE-based electricity generation projects shall be done to determine gaps in the provision of technical operation and management services for these decentralized power projects their productive and social uses (i.e. communities, entrepreneurs and social institutions). Based on the identified gaps, the need for training local service providers in meeting the requirements of the different aspects of service gaps will be determined to develop appropriate local service practical support for the potential RE developers and investors. In line with improving access to resources, information and opportunities at the village level, the activity will also involve providing support to gender sensitive companies for sourcing and distribution of energy goods and services to communities that cater to the specific needs of men, women and youths. Thirdly, the assessment of the capacity of the potential project proponents should also determine the level of gender considerations in the provision of technical operations and management services for the rural power projects.

Activity 4.4.2: Development and implementation of vocational training program for technicians and piloting of relevant courses at SINU on RE/EE technology applications in rural areas. This activity addresses the lack of human resources to support the development, installation, construction, operation, maintenance and management of RE-based and possible hybrid systems. Partnerships with schools and universities offering RE related training courses and specialized technical operation and maintenance on-the-job training will be tapped starting with the demos and expanding to the replication projects. Educational institutions can also develop curriculum and their implementation for training of trainers for vocational training for technicians in RE/EE technology applications. The piloting of the RE Course programme will provide a continuing education on the technician and professional engineering degree courses to support the long-term development of the RE program of the country. For the initial course, solar energy and mini/microhydro technologies will be covered. It will also develop licensing system for graduates and accreditation to a recognized authority for graduates. A periodic monitoring and evaluation of this training program will be conducted to ensure sustained provision and improvement on the training services. This will also include a continuing plan for a capacity development program for schools and universities.

Activity 4.4.3: Establishment, mobilization and development of suitable business and operation model for RE-based rural electrification and EE technology application projects in off-grid villages. This activity involves the assessment of various electricity service delivery mechanisms for rural electrification used in Solomon Islands and other similar PICs. The mechanisms include RESCO as studied in Activity 2.2.3 and demonstrated Component 3 as community-based and institution-based RESCOs in comparison with other possible mechanisms such as the concession model, straight lease model, lease-to-own model or private-public partnership model. As a result of the assessment and recommendations in the matching of models to needs in villages of Solomon Islands, an organization and operational guidebook will be developed and disseminated for use in selection, planning, defining, specifying and preparing for project development of suitably matched project and attendant mechanism in selected communities and institutions in rural areas.

GEF support is required for the incremental technical assistance in developing and capacity building of the local service provision industry and other support system and the necessary travel and meeting expenses in gathering information and conduct of consultations.

4.2 Partnerships

The SPIRES project will build on the ongoing and planned rural electrification and RE and EE initiatives in the Solomon Islands. In that regard, the clear understanding of these initiatives of the SIG and other segments of the country towards the achievement of the rural electrification target is essential to the design and development of this proposed GEF project. To make use of the potential synergies with the ongoing and planned initiatives of the SIG and other project partners, adequate coordination work will be carried out. The coordination work is also to achieve complementarities and building on best practices and lessons learned; and for potential sharing of project resources. The project strategy will make use of national systems (e.g., procurement, etc.,) to the extent possible since the project is to be implemented through a national implementation modality (NIM) arrangement[14]. This means that MMERE will be the key implementor of the Project. Hence, the partnership arrangement will involve not only close coordination between MMERE, as UNDP's Implementing Partner, and other SIG entities that will assist MMERE as Responsible Parties, as maybe deemed necessary.

The MMERE as the Implementing Partner and Chairman of the SPIRES Project Board, shall coordinate to realize synergy and avoid duplication of efforts with implementers of various RE/EE and rural electrification projects funded by several organizations as listed in the Baseline Projects. This shall consider different objectives, timelines and focus of the related projects.

For those partners that have major involvement and shared resources and benefits, a co-financing arrangement for parallel activities will be formalized through a commitment letter. This will be backed up by an engagement plan and progress monitoring and evaluation (M&E) system consistent with the Annual Project Report/Project Implementation Review (APR/PIR) system of the UNDP and GEF to account for the utilization of GEF and co-financed resources mobilized by the project.

[14] Since the implementation modality is NIM, all procurement procedures shall be based on the SIG procedures and policies. This would be in line with the Solomon Islands Financial Instructions from the Solomon Islands PFM Act, which set outs the guidelines of procurement procedures for acquiring of goods/services. The applicable procurement procedures required in the purchase of services and goods that will be used in the project will apply to the extent that these do not contravene the principles of the financial rules and regulations of UNDP and GEF. Nevertheless, if the IP will request UNDP for assistance in the procurement process, this can be done using UNDP's procurement rules and regulations and its own in-house resources and not charge the cost of such service to the project's GEF budget.
It is expected that for the procurements of technology suppliers for Activities 3.2.1 and 3.2.2 will follow the SIG procurement procedures, rules and regulations. Apart from multi-lateral and bilateral donor-funded projects, the MMERE and MECDM have implemented SIG-funded energy projects wherein the selection of technology suppliers was part of the implementation process. Most likely they will come up with a technical working group to evaluate the potential suppliers and the bidding will be through a central tender board under the Ministry of Finance and Treasury.

4.3 Risks, Assumptions and Social and Environmental Safeguards

Risk Management

During the project implementation, the risks that might prevent the project objectives from being achieved are listed in the detailed table of the Risk Log in **Annex H**. In summary, the following are the description of risks and the countermeasures determined to address them:

Table 6: Summary of Description of Risks and the Countermeasures

Identified Risks	Countermeasures to address the Risks
1. Inadequate local capacity to implement the project activities	• *Preventive*: While the project implementation approach is through UNDP's National Implementation Modality (NIM), other qualified and capable SIG entities will be assigned as Responsible Parties to assist the Implementing Partner (MMERE) in the implementation of the SPIRES Project. Extensive capacity development in Component 4 will be provided to MMERE, MECDM and other key stakeholders to support the efficient implementation of the project components and sustainable systems are established for the operation and maintenance period. Additional capacity development activities for MMERE, MECDM and others will be provided during the project implementation. The PMU will develop and implement coordination and monitoring mechanisms with the local implementers and demo host organizations to expand the capacity of people in off-grid areas in the implementation of the relevant project activities. • *Alleviative:* Support from UNDP SOI and UNDP Pacific Office is also available per SIG request.
2. Delayed approval and enforcement of recommended policies and regulations of the project by the pertinent SIG agencies	• *Preventive:* The project includes advocacy campaigns to get adequate support from the SIG authorities on the adoption of the recommended policies and regulations. UNDP will assist if necessary. A proactive M&E system will be established to support the close coordination and hand holding by the UNDP SOI and PMU for the MMERE and MECDM in ensuring that enough and timely information and advice are always available to aid rational decision-making process. • *Alleviative:* A consensus will be taken among the project stakeholders about the action steps to be taken to expedite the approval and enforcement of the recommended policies and regulations. Led by the MMERE and MECDM, this will be done through project board (PB) meetings, together with the relevant SIG regulatory authorities and involving the parliamentarians in the process.
3. Demonstrated RE-based rural electrification schemes are not economically feasible for off-grid communities	• *Preventive:* The factors to be considered in selecting the technology, delivery mechanism, financial scheme and operational/management requirements have been discussed by the PPG Team during the Project development phase with potential partners and demo hosts. Proper selection, based on agreed criteria, of the recommended RE-based electricity generation schemes will done, and their design properly done to facilitate financially sustainable schemes to be showcased, aside from the social benefits from increased electricity access. • *Alleviative:* In case during design of selected demos, indications that the selection may not be economically viable (e.g., equipment price increase, initial design assumptions no longer apply, etc.), alternative schemes will be recommended for consideration, and appropriate adjustments will be done considering the factors that made the initial selections no longer economically viable.
4. Installed rural electrification installations are affected by adverse	• *Preventive:* Proper engineering and construction design and construction that ensure structural integrity but also climate resilience will be strictly followed in the construction/installation of rural electrification facilities. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations

Identified Risks	Countermeasures to address the Risks
climate-related events.	• *Alleviative:* Based on the damage assessments made, appropriate modifications or rehabilitation of the damaged installations (and budget) will be done. Potential reduction in the number of installations, or replacement with alternative demos will be done while considering the need to ensure the resulting interventions are still contributing to the realization of the project outcomes.
5. Off-grid area demonstrations are not supported by communities.	• *Preventive:* Information campaign and active promotional work in regards the rural electrification schemes that will be implemented will be carried out with the MMERE and MECDM, and possibly with CSOs/NGOS. Villages that appreciate and support the planned demos will be given priority for the implementation of the demos. • *Alleviative:* In case selected villages will withdraw support during the project implementation, the demos will be redesigned for implementation with other alternative off-grid areas. If there will be land tenure issues, MMERE, in cooperation with relevant agencies, will exert effort to address the issue using government approach on land acquisition for power sector infrastructure assets.
6. Non-availability of committed co-financing for specific activities of the project at the scheduled time	• *Preventive:* The SIG (through MMERE and MECDM) assurance of co-funding shall be confirmed and secured prior to project launching through the commitment letters that will be part of the ProDoc. The project development team in close coordination with UNDP SOI, MMERE, MECDM has facilitated the formalization of commitment by co-financing partners to ensure the timely availability of co-financing from project partners and co-financers during project implementation. • *Alleviative:* Possible reallocation of budget to support the implementation of activities affected by the delays in the availability of co-financing. Potential modifications of activities will be done to allow delivery of alternative outputs that are still contributing to the achievement of the relevant outcomes, in the case of committed co-financing is not forthcoming. Together, with MMERE and MECDM conduct follow-up meetings with co-financer, or alternatively find and negotiate with other potential co-financers.
7. Non-continuous national government support to the project.	• *Preventive:* Continuous SIG support and working relationship, particularly among MMERE, MECDM and other stakeholders will be strengthened and sustained during PB meetings and key activities of the Project. • *Alleviative:* Should there be implementation issues that will arise, appropriate courses of actions in a transparent and reinforcing manner, will be carried out to ensure SIG ownership and support of the project. UNDP executive management intervention may be required, if necessary, in addition to the protocols under a NIM scheme.
8. Relatively low petroleum fuel prices will reduce interest in RE-based power generation	• *Preventive:* The project's awareness raising interventions are expected to sustain the overall interest of the country in transforming their power generation system to RE-based systems even when the petroleum fuel prices are relatively low. Significant savings are expected in the operation of the RE systems because of the high logistics cost of bringing diesel fuel in rural areas. The general down trend in the investment cost of RE systems is a positive motivation also for acquiring these energy solutions for rural electrification. • Alleviative: In case petroleum fuel prices go down, the project will emphasize the need to take advantage of the energy, environment and economic benefits of RE, and the country's obligation towards the realization of its climate change mitigation targets in its NDC to ensure that the interest of the SIG in low carbon development is sustained
9. Construction and operation of the demo low carbon technology application projects may pose safety	• *Preventive:* All the selected demos will involve site-specific environmental and social assessments and recommend measures to mitigate the identified safety risks. Appropriate training for the target beneficiaries of the demos will be able to properly and safely operate the installed systems in such a way that the release or handling of waste products are properly controlled, and managed, appropriate training will be provided. • *Alleviative:* Rational management in the transportation of materials and safety of vehicles and in the construction sites such as dug outs, flying dust, dirt, etc. involved

Identified Risks	Countermeasures to address the Risks
risks to local communities.	in the installation of the demo projects, and provision of temporary storage areas for the eventual disposal, recycling and management of waste generated from these demos (e.g., spent lead-acid batteries, spent lithium batteries etc.)
10. Operation of the RE/EE demo and replication projects may potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or trans-boundary impacts	• *Preventive:* Adherence to the standard design practices that involve considering environmental impacts RE resource preparation, utilization, and the handling of resulting waste or effluents have their general design requirements and guides that must be complied with. Projects will be designed considering the potential waste generation and ensuring proper disposal of wastes from the various stages of construction, operation and disposal. Issuances of policies and sanctions in case of violations on improper disposal of wastes or hazardous substances, such as mercury in used lamps that are being replaced by EE lights, will be one of the requirements of the site-specific environmental and social impact assessment that will be conducted for each of demo a replication project. • *Alleviative:* Depending on the extent of the release of pollutants to the environment, proper safety procedures will be implemented while coordinating with the relevant authorities the steps to stop the situation. Additional enclosures will be setup around the affected areas to reduce the magnitude range of possible further release of pollutants (such as dust and dirt during construction) as maybe actually generated. Adjustments in the procedures/steps and implementation schedule of the affected project activities will be made.
11. Land issues could affect demo projects in areas owned and occupied by traditional resource owners	• *Preventive:* FPIC* processes will be required and documented during project implementation as a part of the site specific environmental and social impact assessments to be completed prior to any physical work beginning on the installations. For the FPIC process, extensive consultations, building on initial consultations during the PPG exercise, will be conducted with local indigenous people communities. • *Alleviative:* Consultation and decision by the Project Board to address persistent issues that would arise which were not covered by the intensive discussion with landowners on the potential land issues and provision of immediate actions to mitigate the impacts when the identified risk happens.
12. Social-cultural and climate-related risks impacts the sustainability of the implementation of the low carbon energy projects	• *Preventive:* The design and implementation of the RE-based power generation and other low carbon technology applications shall follow proper engineering and construction design and construction that ensure not only structural integrity but also climate resilience. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations. Climate factors and climate scenario will be considered in the feasibility studies that will be conducted in the potential RE-based energy system demo projects, • *Alleviative:* Consultation and decision by the Project Board in finally resolving emerging socio-cultural and climate-related risks and provision of immediate actions to mitigate the impacts when the identified risk happens

* Free, Prior Informed Consent (FPIC) principle

Further risk assessment was done for the SPIRES project using the UNDP Social and Environmental Social Screening Template (SESP) in **Annex F** and explained in Part B of the same template**.** There are four risk factors Identified with moderate risk rating or having an above average probability of occurring and a medium level of impact on people and the environment. These include;

- Risks associated with occupational health and safety standards
- Risks associated with release of pollutants into the environment
- Risks related to land issues
- Risks related to social and climate factors

These additional risks have been included also in the Risk Log for the project as shown in **Annex H**.

Social and Environmental Safeguards

The project is geared towards supporting RE-based energy systems as among the key elements for the satisfactory achievement of the energy, environment and development agenda of the country. These interventions will be subjected to the legal environmental impact assessment of the country for proper evaluation of the potential impacts to the natural environment and should develop an environment management plan for any potential medium to high risk impacts identified. As part of the social and environmental safeguard measures, the Free, Prior Informed Consent (FPIC) principle will be implemented for the low carbon technology application projects that will be implemented in the of/off-grid areas of the country through the SIG EIA process

This work will be a part of site specific environmental and social ("E/S") assessments that will be carried out for each of the demonstrations on RE-based energy generation that will be implemented under the project. Based on the agreement expressed by the communities in full community hearings/meetings during the project design period, more in-depth social assessments will be carried out during project implementation.

The design and implementation of the RE-based power generation and other low carbon technology applications shall follow proper engineering and construction design and construction that ensure not only structural integrity but also climate resilience. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations. Climate factors and climate scenario will be considered in the feasibility studies that will be conducted in the potential RE-based energy system demo projects, as well as in the design and engineering of the selected low carbon technology application demos.

The Social and Environment Management Plan (SEMP) has been prepared for the SPIRES Project to address the risks identified in the screening process to fall under the category of moderate to high risks. The SEMP discusses the mitigation measures, monitoring, capacity building, and stakeholder engagement and implementation action plan based on the Social and Environmental Screening Template in **Annex F.**

4.4 Stakeholder engagement plan

Based on the stakeholder analysis, the project's key players include MMERE, MECDM, partner SIG ministries, and the Provincial Governments of Malaita and Makira. They will take active part in the implementation of the SPIRES project activities while the others will assume either supporting or beneficiary roles.

a. *Ministry of Mines Energy and Rural Electrification (MMERE)* – MMERE is the project's Implementing Partner under UNDP's National Implementation Modality. It is also the Co-chairman of the Project Board. It has the mandate over development of renewable energy, energy efficiency and rural electrification. The Energy Division (ED) within MMERE oversees energy policy formulation and implementation, energy analysis, energy advisory services and project implementation and therefore has high influence in the SPIRES scope of development. It has close working relationship with Solomon Power and established partnerships through energy projects with World Bank, GIZ, Italy Government and Japanese Government. MMERE has worked collaboratively with other ministries to meet government plans for rural electrification and related application in economic activities and will benefit largely in capacity building in RE systems and energy production under the SPIRES Project.

b. *Ministry of Environment Climate Change Disaster Management and Meteorology (MECDM)* **–** This is a key partner for the project due to its mandate on climate change mitigation. The country's climate change mitigation target is a maximum reduction of 45% in GHG emissions by 2030. It has strong interest to replace diesel powered generators in schools and replace them with RE systems and promote EC and EE applications. It is also keenly aware of the accompanied issue of technology waste as a result of the supply of energy technology and apparatus (batteries, solar panels, etc.) into remote rural areas and would like to seek SPIRES Project support to develop a waste removal strategy as a mitigation action.

c. *Ministry of Fisheries and Marine Resources (MFMR)* – This is responsible for managing the country's aquatic resources. It is the country's leading government research institution focused on fisheries development and provides fisheries and aquaculture extension services. Part of that service is the establishment of fishery centers in selected economic growth centers of the country. The project's partnership with MFMR is mainly in the demonstration activities on enhancing the capability of fishery centers to serve fishing communities through the provision of electricity access.

d. *Ministry of Health and Medical Services (MHMS)* – This is responsible for the management and delivery of the health and medical services in the country. Several of its health centers, particularly those located in rural off-grid areas are planned for rehabilitation, which include among others, refurbishing of the energy supply hardware. The project's partnership with MHMS is mainly in the demonstration activities on enhancing the capability of health centers to serve the communities where these are located by enabling them to provide electricity services.

e. *Ministry of Commerce, Industries, Labour and Immigration (MCILI)* – This ministry has launched its Economic Growth Centres Program, which is a merger of both rural development and provides an environment where private development is being created in the provincial area. The project's partnership with MCILI is mainly in the demonstration activities on enhancing the capability of small-scale industrial estates to provide adequate electricity supply through RE-based power generation and supply system to entities (particularly SMEs) that will set up business in such estates.

f. *Ministry of Education Human Resources Development (MEHRD)* **–** will benefit from the RE/EE activities of SPIRES Project and consented to engage selected schools as a pilot demonstration site for micro-hydro or hybrid energy system installation. Replacing diesel generators in government schools with RE systems will reduce operating costs for diesel generators. MEHRD will be particularly interested in long term sustainability of the RE systems for schools and maintenance and repair requirements. Relevant personnel will be trained in institutional and financial mechanisms to be administered by the school for energy production, use and maintenance aside from the basics of energy technology. As the agency responsible for human development planning and training, MEHRD is interested in supporting the long-term capacity development for technical training in RE design and installation for solar, hydro and wind energy.

g. *Ministry of Provincial Government and Institutional Strengthening (MPGIS)* **–** has roles in strengthening institutional governance and financial accountability for improved delivery of services and accountability in the provincial government system. MPGIS does not have a direct role to play in the project however, SPIRES Project would benefit from MPGIS trainings offered to provincial government officers in the area of transparency, accountability and reporting.

h. *Ministry of Women Youth and Children's Affairs (MWYCA)* **–** shows high interest in the SPIRES Project as a conduit for gender mainstreaming into a highly technical field - the energy sector. Its roles and functions include women and development, gender mainstreaming and gender equality and has a direct interest in women empowerment in sustainable development including development in male dominated fields such as the energy sector although the interest is very low at present due to lack of activities in this area for the ministry. It can provide technical support in capacity development, policy support, mentoring and networking with provincial based women development officers.

i. *Ministry of Development Planning and Aid Coordination (MDPAC)* **–** is the master planner (for both medium and long term) for SIG and therefore is a key partner in the SPIRES Project. MDPAC's interests in the SPIRES Project are in relation to planning and implementation of the National Development Strategy 2016-2035. It has a core function of manpower planning for both public and private sectors and aid coordination. It will provide advisory support for the implementation of the project through its intended membership in the project board and steering committee and monitoring and evaluation of the overall implementation of the project to shed light on sustainability models for future energy development and financing.

j. *Ministry of Rural Development (MRD)* **–**is a public stakeholder and plays key roles in development and welfare activities in the rural areas which include the 50 constituencies in Solomon Islands. It oversees development in rural areas that improves delivery of primary services in health, education, sanitation, conservation, road construction and economic growth for the communities. While it does not have a direct role in the implementation of the SPIRES Project it is interested in socio-economic impact of SPIRES in rural development.

k. *Ministry of Infrastructure Development (MID)* **–** is responsible for the development of important infrastructures to support development in Solomon Islands. Energy development in off-grid areas may stimulate development of important infrastructure in these areas hence MID becomes a potential supporter and collaborator in the future.

l. *Malaita Provincial Government* – showed high interest for the SPIRES Project in bringing energy to remote rural communities in Malaita such as the Hunanawa Community as a potential demonstration site for solar PV and micro hydro development with attention to women empowerment and for vital information on the future replication of the systems in other areas.

m. *Makira Provincial Government and Makira Education Authority* – likewise showed keen interest for the SPIRES Project in establishing a demonstration of a micro-hydro system to Waimapuru National Secondary School (WNSS) and possibly to Pamua Provincial Secondary School and the future replication of SPIRES Project demonstrations. MEA does not have a direct role in the implementation of the SPIRES Project but can influence decisions made by the school towards the management of the demonstration site at WNSS.

n. *Solomon Power (formerly SIEA)* **–** is responsible for electric power supply and distribution to both urban and peri-urban areas and does training and licensing for non-utility actors in the energy sector. It influences RE in areas of energy development and expansion into non-grid areas using standalone systems. It has capacity, expert knowledge and skills to share with SPIRES Project. It has trained and licensed several electrical engineers and may also support renewable energy work in off-grid areas.

o. *Private sector participation* – is still low at present except for a few entities that venture into solar PV and related electrical services, such as Super Fly, which is interested in off-grid energy supply for rural areas. The company provides services in system diagnoses, design, installation and capacity building to rural communities in quality solar systems (small, medium and large) with high interest in solar standards, installations, diagnoses, repairs and maintenance and capacity development for end users including women. The company is a key stakeholder to SPIRES Project providing gender inclusive training and Training of Trainers (ToT) that meets the needs of rural women with limited education and low confidence to handle technology.

p. *Women empowerment groups* – include West Are'are Rokotanikeni Association (WARA) and Solomon Islands Women in Business Association (SIWIBA). WARA is a community-based women's group with goal of empowering women in financial literacy to achieve women development goals and economic empowerment through the RE financing models and is known for its saving club impact and its outreach to other communities in Malaita and other provinces to involve in financial training to build skills for women leaders, trainees and enthusiasts. SIWIBA) is a women-led association that aims to liberate and empower women to move to small and medium size companies and is keen to use resource persons to train community women in their villages.

q. *Solomon Islands National University* – is highly interested in the capacity building component of the SPIRES Project, in the area of RE-related courses with emphasis on sustainability, cost efficiency, environmental impacts and technology absorption. It is currently offering courses in Certificate for Electrical Technology and developing a diploma program on photovoltaic energy to build on the certificate level (for both on-grid and off-grid systems) course currently funded by the EU- Adapting to Climate Change and Sustainable Energy **(**ACSE) Project. Under its Community Outreach Lifelong Learning Program, it provides short courses to communities introducing basic solar concepts, maintenance of solar system and Training of Trainers (ToT) that can be tailored to meet specific needs of clients and training of electrical technicians for project communities and RTC instructors. It will also be involved in a pipeline GIZ- funded project (PACTVET) to assist in development of curriculum for refrigeration and air conditioning. It will work with SPIRES Project to meet specific capacity building activities for community end-users, building on initiatives from RDP and ACSE and PACTVET Project. Its Marine Studies is interested in providing training to communities in value-added seafood products such as fish canning and in establishing community fisheries learning hubs and build the relationship to extend their outreach to communities.

r. *NGOs* include the international group Live and Learn Environment Education (LLEE) which focuses on environmental and development education based on principles of open participation and equality, environmental ethics and local ownership through its works with communities throughout the Pacific to better understand climate change, disaster preparedness and water and sanitation. It will be an important stakeholder for SPIRES to promote RE, EE and EC and raise awareness on climate change impacts.

The details of the stakeholder analysis and the stakeholder engagement plan are seen in **Annex P**.

In summary, the following stakeholders were identified as having interest, experience, capacity, networks and potential benefits corresponding to the goals and objectives of the SPIRES Project:

Stakeholder	Roles and Responsibilities in Project Implementation
Ministry Mines, Energy and Rural Electrification (MMERE)	Provide support and technical advice on design, energy specifications and installation of energy systems (solar and mini-hydro) and responsible for implementation of the demonstration pilots. MMERE shall be the Responsible Party and Co-Chairman of the Project Board and lead the formation and working arrangement of Technical Working Groups (TWGs) on consultation and decisions on the policy, financial, technical and capacity building aspects of the project.
Ministry of Environment, Climate Change and Disaster Management (MECDM)	Provide support for the technical design, energy system specifications and installation of energy systems (solar and mini-hydro) and responsible for the implementation of demonstration pilots to achieve the required reduction in GHG emission. MECDM is also responsible for monitoring of the execution and implementation of the project by key implementer and project partners.
Ministry of Fisheries and Marine Resources (MFMR)	Provide support for the establishment, operation and maintenance of demo commercially-operated solar PV power generation and supply system for fishery center operations and for village electrification.
Ministry of Health and Medical Services (MHMS)	Provide support for the establishment, operation and maintenance of demo commercially-operated solar PV power generation and supply system for health center operations and for village electrification.
Ministry of Commerce, Industry, Labor and Immigration	Provide support for the establishment, operation and maintenance of demo commercially-operated solar PV power generation and supply system for small-scale rural industrial estate electricity supply.
Ministries of Education Human Resources Development (MEHRD)	Provide support for the establishment of the demonstration site for school-based solar PV/Diesel power generation and distribution demos,

	monitor activities at the site, provides support and advice on the sustainability of the installed energy system.
Ministry of Women Youth Children and Family Affairs (MWYCFA)	Provide support for gender mainstreaming using Gender Focal Points with MECDM and MMERE for gender-disaggregated reporting against the Gender Action Plan. MWYCFA is responsible for gender sensitive monitoring and evaluation and member of TWG
Ministry of Infrastructure and Development (MID)	Support the role of MMERE and shall be a member of the TWG
Ministry of Finance and Treasury	Support the role of MECDM and shall be a member of the TWG
Ministry of Rural Development (MRD)	Provide support to TWG by ensuring that Environmental and Social Safeguards (ESS) are observed and critical social economic conditions are enhanced
Ministry of Development Planning and Aid Coordination (MDPAC)	Provide institutional support to MECDM in reporting and accessing international finance through climate change financing platforms
Solomon Power (SP)	Provide support on technical aspects of solar PV power generation design and installation and micro hydro systems. Support demo on solar PV/Diesel hybrid system load optimization and supply for productive and social uses. SP shall be part of the TWG and Project Board to provide technical advice to the project.
Solomon Islands National University (SINU)	Provide support for the capacity development activities for communities, women and ToT in RE
SINU Marine Studies	Provide seafood value-added trainings to coastal communities to enhance community livelihood
CSO, NGO, community-based social/civic groups (e.g., churches)	Provide support for promotion of RE, EE and EC awareness to communities and end-users. CSO is responsible for design of value-added initiatives to support livelihood initiatives for communities.
Private sector RE technology suppliers	Provide technical expertise in areas of design, energy specifications, supply, distribution, installation, maintenance, diagnoses, monitoring and training for end-users. Private Sector is responsible for quality and reliable technology adoption for communities/end-users.
Village/Community leaders: Hunanawa Community leaders and Women's Group	Provide support for community good governance, gender participation and inclusion in decision making at the community level, ownership of the project and sustainability of the project in the long term. Community leaders are responsible for ensuring the ESMP is implemented and communities are protected and safe from adverse impacts of the project.
Community Utilities Committee (CUC) and Community-based RESCO	CUCs and Community-Based RESCO provide service and support that forms and backbone for sustainability of the energy production and maintenance through establishing strong and effective governance and right financial mechanism in the project localities.
West Are'are Rokotanikeni Association (WARA)	Support community women's technical champions to acquire relevant skills through trainings in repair and maintenance and encourages community-community learning symposiums and implementation of RE financing models on solar home systems and solar freezers.
Solomon Islands Women in Business Association (SIWIBA)	Support livelihood training including sewing, baking, floral arts, cooking and reading.

4.5 Gender Equality and Empowering Women

Gender equality is one of the important aspects of this proposed GEF project, particularly in the context of village life in the off-grid areas. The logical framework analysis (LFA) for the design of this project will cover all relevant issues that pose as barriers to improved electricity access in off-grid areas, as well as the application of low carbon technologies in the provision of electricity services in Solomon Islands. Among the issues that will be covered will be those that relate to gender equity and women's role, and will cover potential barriers (if any) posed by gender equity issues, and barriers to:

(1) Supporting gender equity and women empowerment in the promotion and implementation of low carbon development; (2) Enhancing opportunities to enhance the role and influence of women in the deployment of low carbon technologies and climate change mitigation options, and, (3) The development of gender-sensitive policies in the electricity sector and the electricity end-use sectors of the country. The project is designed to give full recognition of the important contributions of women in the management and implementation of such measures, and in the supply as well as in productive and social uses of electricity in the villages. The project design and preparation will also consider the potentials for the involvement of women working in both management and technical departments of the SIG agencies/institutions who can play important roles in the design, development and implementation of this proposed UNDP-GEF project. Furthermore, the design and preparation of this project will consider the contributions, impacts and benefits of community based sustainable energy and low carbon technology applications, including children and indigenous people.

A gender analysis and mainstreaming plan has been developed and can be seen Annex **N.**

4.6 South-South and Triangular Cooperation (SSTrC):

The vast experience of some developing countries will be tapped, particularly among the PICs in the Pacific region, in the development and utilization of feasible renewable energy resources and application of energy efficiency technologies. These programs have become attractive and interesting to several countries, especially those with the factors that could potentially lead to the development of RE/EE industry in cooperation with these countries, through World Bank, EU, IUCN and other bilateral/multilateral cooperation through the various baseline projects. Several RE/EE projects are being implemented, considering not only national capacities, but also regional and global market opportunities. Solomon Islands is a signatory to several agreements on bilateral, regional, interregional and multilateral bases in different levels of cooperation, including technology and knowledge transfer, research and development, and trade and investments. Cooperation in the exchange of experiences (failures and success) will be fostered as well as the support for the implementation of national and regional RE/EE policies for the development and application of RE/EE technologies that involves the concerns and opportunities in this development area towards sustainable results. The exchange of experiences will be done through workshops, symposium, information exchange systems and website access. The project includes the conduct of studies of projects implemented by other SIDs in cooperation with developed countries on the application of solar PV power generation, microhydro, and energy efficiency measures.

4.7 Sustainability and Scaling Up

The SPIRES project is designed to stimulate the replication of the RE/EE application in rural are electrification through the careful selection and implementation of demonstration projects that will showcase the pronged barrier removal approach of the project in terms of reforms in policy and planning, improvement of technical performance and reliability of RE facilities, institutional strengthening, sustainable financing arrangements, and information and awareness. The project has included intensive monitoring and evaluation of these demos to ensure that they are successfully operated and will give the desired impacts of these economical and environmentally friendly technologies. This project will involve, among others, the establishment of the required enabling conditions (formulation of policies and investment plans) that will be supportive of actions that would contribute to increased rural electrification. This will ensure the sustainability of whatever policies/regulations, institutional and financial mechanisms to facilitate increased investments in RE-based power generation facilities in the off-grid areas of the country to contribute to the achievement of the country's rural electrification and %RE electricity targets. The project is linked and is complementing the national development strategy; the proposed rural electrification and RE and EE

investment plans and the NDCs of the country over the long term, the project's set of impacts are sustained.

The project sustainability is also anchored in the commitment of the SIG to reform the policies in favor of integrated energy policy and planning that will include economic, social, technical and environmental sustainability parameters in the choice of RE technologies for application in rural electrification. The project is designed to strengthen institutional support and financial arrangements, which is the key to pursuing successful development in this area. Private sector involvement will be harnessed in the demonstrations of RE-based electricity supply in priority areas to support local development and income generating opportunities. The updated national energy policy and plan will be strongly supported by the SIG to be facilitated by the MMERE and the project in order to further ensure the sustainability of the energy planning and regulatory system.

The sustainability of the institutional arrangement of the project will be ensured through the establishment, capacity building and adoption of collaborative approaches, strategies and regulations that seek to foster and reinforce the long-term sustainability of institutional and coordination structures with regards to implementation and enforcement the National Energy Act and its implementing rules and regulations. It is envisaged that knowledge in the financing options for RE and EE, and understanding in the overall market potential, will stimulate adoption of the financial schemes by local banks, private entrepreneurs and institutional users will ensure a long-term sustainability of the proposed financial schemes.

The project will promote greater integration of RE power generation into the national electricity planning and encouraging more applications in livelihood activities at the community and institutional level. Replication and up scaling are an integral to the project design as the expected GHG emission reduction from the application of suitable RE and EE technologies in energy supply and demand-side management rely on the replication of demonstrated RE technologies and delivery schemes.

V. PROJECT MANAGEMENT

5.1. Cost Efficiency & Effectiveness

The SPIRES project will facilitate the integrated approach of the SIG in steering the country's efforts in achieving its commitment to have zero GHG emission with the use of locally available RE resources, particularly solar and microhydro, to displace primarily diesel fuel in communities, institutions and encourage income generating opportunities. In tandem with the RE development approach is the application of EE techniques to lower diesel-power demand levels. Petroleum products are difficult and costly to transport to the outer islands which are at times with uncertain delivery schedules and prone to weather disturbances. Significant savings have been identified in many places in the region through application of simple, appropriate, effective and proven RE/EE technologies. SPIRES will no longer be testing these technologies but rather innovate on the delivery, operation and management mechanisms that will ensure least-cost and reliable operations. The country will certainly improve its balance of payments as the RE potentials are tapped optimally. Furthermore, easy and increased access to energy supply and services will improve socio-economic status of the rural people and communities and open opportunities to enhance income generation and livelihood, to lessen burden to women and children and to hasten adaptation to adverse effects of climate change globally towards sustainable long-term socio-economic benefits.

5.2. Project Management

As practiced in all UNDP/GEF-supported projects, UNDP always endeavors to seek adaptive management approach in the implementation of projects. Based on the partnerships defined and firmed up during the project development, the management arrangements have always been anchored on co-operation and mutual sharing of benefits where accountability and responsibility for implementing the project and achieving the project outputs. Considering the challenges of the current government set ups (e.g. cash flow issues and centralization of financial management) and in the interest of making decisions and delivering results timely, the partners have agreed that the SPIRES project will be implemented following the UNDP National Implementation Modality (NIM). The responsibility for the implementation of this project is with the MMERE, which will be supported by MECDM and other partner SIG ministries to carry out activities within a NIM project organizational structure and day-to-day project management and reporting lines.

SPIRES will be governed by a Project Board. This board will constitute MMERE, MECDM, MDPAC, UNDP-SOI and other partner SIG ministries and invited representatives from beneficiary groups such as civil society and local communities, as may be relevant or applicable. MMERE will establish a Project Management Unit (PMU) that will also be based in the MMERE. The MMERE will recruit the PMU personnel such as the Project Manager (PM) who then will work on the day-to-day management of project activities. The PM will be the head of the PMU and will provide administrative, technical, management and coordination roles in collaboration with MMERE, MECDM, and other partner SIG ministries (for demonstrations), provincial officers and provincial government institutions. UNDP will provide induction and regular training to PMU staff on UNDP procedures and policies so that they may effectively execute their roles and responsibilities. The PM should be recruited from the Solomon Islands. The project will be supported by project technical officers consisting of the following: Chief Technical Adviser (CTA), National Project Engineer and Provincial Officers; and Project administrative officers (Project Assistant, Procurement Officer, Community Engagement Officer and Communications and Monitoring & Evaluation Officer). Energy Division staff of the Energy Division will provide technical support to the implementation of the project. A working group comprised of independent experts, technical government agency representatives (MID, MCILI, MOFT, MRD, etc.), as well as representatives from stakeholder groups (NGOs, faith-based organizations, private sector, Solomon Power, etc.) will discuss and deliberate on the various technical analyses as well. The project will be monitored and evaluated according to UNDP and GEF M&E plan which is also described in this ProDoc.

5.3. 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[15] and the GEF policy on public involvement[16].

[15] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/
[16] See https://www.thegef.org/gef/policies_guidelines

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): *Goal 7: Affordable and clean energy*
This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: *Outcome 1: Climate Change, Disaster Resilience, and Environmental Protection - By 2022, people and ecosystems in the Pacific are more resilient to the impacts of climate change, climate variability and disasters; and environmental protection is strengthened.*
This project will be linked to the following output of the UNDP Strategic Plan: *Solutions adopted to achieve universal access to clean, affordable and sustainable energy*
Recommended, approved and enforced rural

Project Strategy	Objectively Verifiable Indicators				Means of Gauging Success	Critical Assumptions
	Indicator	Baseline (2017)	Mid-term Target (Year 2)	End-of-Project Target (Year 4)		
GOAL: Reduced annual growth rate of GHG emissions in the energy and energy end use sector of the country.	• Cumulative incremental GHG emission reduction from the electricity sector in rural areas, tons CO_2 • National electric energy consumption index, ktoe/US$ GDP	• 0 • 6.42	• 6,376 • 6.20	• 19,147 • 5.87	• Annual energy supply and consumption reports submitted by relevant SIG entities and the ERE-MMERE • Project M&E reports • Project quarterly reports • Project Mid-Term Report • Project Terminal Report	• Continuous commitment, support and active participation of the national and provincial governments towards the achievement of the SINEP 2014, NDS 2011-2020, and the country's NDC
OBJECTIVE: Facilitation of the achievement of increased access to electricity in rural communities in the Solomon Islands	• Cumulative incremental fossil fuel savings due to sustainable energy and low carbon interventions implemented, toe • % electricity access in rural areas, % • No. of new jobs created due to enhanced electricity access in off-grid areas in the country	• 0 • 5% • 10	• 697.6 • 15% • 60	• 2,095 • 25% • 200	• Annual energy supply and consumption reports submitted by relevant SIG entities, SIEA and the ERE-MMERE • Reports generated from the proposed national energy supply and consumption monitoring, reporting and database system • Project M&E and activity reports	• Realization of committed co-financing from the national and local governments in the implementation of project activities and monitoring systems • RE-based energy consumption growth will be sustained at a rate being achieved in recent years at 6.6% p.a.
Component 1: RE and Rural Electrification Policies, Regulations and Planning Improvements						

Outcome 1: **Enforcement of approved policies and rules and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands**	• No. of implemented off-grid rural electrification projects facilitated by the approved and enforced energy access, RE and EC&EE policies. • No. of designed and implemented pilots on the implementation of applicable policy and regulatory framework for rural electrification • No. of formulated, approved and implemented rural electrification plans.	• 0 • 0 • 5	• 2 • 1 • 7	• 5 • 2 • 9	• Documents on energy access, rural electrification, RE and EC&EE policies and energy standards • Project M&E and activity reports • Annual reports from ERE-MMERE and SIEA • Project quarterly reports and activity reports • Gender responsive RE, EE Policy and investment plans to support gender empowerment in the energy sector. • Project M&E Report on gender participation in planning and energy development improves men's gender perspective in the energy sector	• Full and continuous commitment and support of the national and provincial governments in the implementation of energy policies in the energy and end-use sectors. • Continuous commitment, support and active participation of the national and provincial governments towards the achievement of the NEFP 2014, NDS 2016-2035, and the country's NDC
Component 2. Promotion of RE and Rural Electrification Initiatives						
Outcome 2: Enforced improved institutional and financial mechanisms in the integrated planning and implementation of rural electrification and RE-based energy	• No. of formulated and recommended institutional and financing mechanisms that support the enhanced implementation of rural electrification initiatives. • No. of rural electrification initiatives facilitated by adopted	• 0 • 0	• 2[17] • 2[18]	• 2[19] • 2[20]	• Documents on the institutional and financing scheme development process • Annual Reports on the planned and implemented rural electrification projects • Project M&E and activity reports • Project quarterly reports	• Continuous commitment and support by the national and provincial governments on the established mechanisms even after the SPIRES project completion. • Communities continuous towards project activities

[17] (enhancement in carrying out energy service fee collection in community demo site)
[18] reflecting g the 2 demo sites institutional & financing mechanism that will be developed
[19] (formulated institutional & financing mechanisms to make them more effective)
[20] (the 2 institutional & financing mechanisms are working and able to facilitate rural electrification)

production in the off-grid areas	and enforced institutional and financial mechanisms.				• Project Mid-Term Report • Project Terminal Report	as per schedule implementation
Component 3: RE Technology Applications for Supporting Rural Socio-Economic Development						
Outcome 3.1: Increased confidence in, and application of, RE technologies and RE-based power generation to support socio-economic development in off-grid areas	• No. of planned and implemented rural electrification projects in both on-, and off-grid areas that are based on the findings are recommendations of conducted DREI[21] assessments of RE-based electricity generation options. • No. of follow-up rural electrification, sustainable energy and low carbon technology application projects (demo replications and scale-ups) in on-, and off-grid areas. • Percentage of successful maintenance or repair work on demonstrations by MMERE and all RE-based rural electrification projects in the country	• 0 • 0 • 0	• 2 • 4 • 50% support	• 5 • 6 • 100% MMERE with no external support	• DREI assessment reports • Project documents of demo and replication RE-based energy generation and EE projects • Project M&E and activity reports • Project quarterly reports • Project Mid-Term Report • Project Terminal Report	• As per schedule implementation and completion of demo projects State government and private sector fully support and commit to the replication of successful results of the demo projects.
Outcome 3.2: Adoption and implementation of climate resilient and low carbon electricity applications in increasing access to electricity in off-grid areas.	• No. of successfully installed and operational systems of the implemented demonstrations of RE-based electricity generation and low carbon technology application in the off-grid areas. • No. of RE and EE technologies application projects designed and financed for implementation as influenced by the results and outcomes of the demonstrations	• 0 • 0	• 2 • 4	• 5 • 9	• Demo RE-based electricity generation and low carbon technology application project profiles. • Performance and evaluation reports of the demo projects • Project M&E and activity reports • Project quarterly reports • Project Mid-Term Report • Project Terminal Report	• Local governments and private sector fully support and commit to the replication of successful results of the demo projects. • Communities continuous towards project activities as per schedule implementation

[21] UNDP's flagship Derisking Renewable Energy Investment (DREI) methodology will be used to quantitatively analyze the barriers and risks for sustainable off-grid RE-based power generation options in the Solomon Islands.

	• Percentage of women in community-based RESCO morally supported by village men to build their confidence in leadership	• 0	• 25%	• 50%		
Component 4: RE & EE Capacity Building						
Outcome 4: Enhanced awareness and knowledge of the government, private sector and communities on the cost-effective application of RE and EE technologies and practices	• No. of trained national and local government personnel that can ably plan and evaluate energy access, sustainable energy and low carbon technology application projects. • No. of local firms that can capably provide technical, engineering and maintenance services for rural electrification and low carbon technology application projects.	• 0 • 1	• 2 • 1	• 4 • 3	• Certifications of national and local government personnel for completion of training courses • Business registrations of local technical and engineering service providers that are working on energy access and low carbon technology projects • Project M&E and activity reports • Project quarterly reports • Project Mid-Term Report • Project Terminal Report	• Continuous commitment and support on energy access, sustainable energy and low carbon technology applications by the national and provincial governments.

VII. MONITORING AND EVALUATION (M&E) PLAN

The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. The project monitoring and evaluation plan will also facilitate learning and ensure knowledge is shared and widely disseminated to support the scaling up and replication of 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. While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the GEF M&E policy and other relevant GEF policies[22].

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. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.[23]

M&E Oversight and monitoring responsibilities:

Project Manager: The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

The Project Manager will develop annual work plans based on the multi-year work plan included in Annex A, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. gender strategy, KM strategy etc..) occur on a regular basis.

Project Board (PB): The PB will take corrective action as needed to ensure the project achieves the desired results. The PB will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the PB will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

[22] See https://www.thegef.org/gef/policies_guidelines
[23] See https://www.thegef.org/gef/gef_agencies

Project Implementing Partner: MMERE as the Implementing Partner under the NIM arrangement is responsible for providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate. 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 by and generated by the project supports national systems.

UNDP Country Office: The UNDP SOI Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place per the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and PB within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR, the *independent mid-term review* and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the UNDP POPP. This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

UNDP-GEF Unit: Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

Additional GEF monitoring and reporting requirements:

Inception Workshop and Report: A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:

a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project strategy and implementation;
b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
c) Review the results framework and finalize the indicators, means of verification 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 in M&E;
e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; Environmental and Social Management Plan and other safeguard requirements; the gender strategy; the knowledge management strategy, and other relevant strategies;
f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and

g) Plan and schedule PB meetings and finalize the first-year annual work plan.

The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser and will be approved by the PB.

GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. 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 UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyze and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

GEF Focal Area Core Indicators: The prescribed GEF Core Indicators will be used to monitor global environmental benefit results. The baseline/CEO Endorsement GEF Focal Area Core Indicators (s) – submitted in **Annex D** to this SPIRES Project Document – will be updated by the Project Manager/Team and shared with the mid-term review consultants and terminal evaluation consultants before the required review/evaluation missions take place. The updated GEF Core Indicators (s) will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.

Independent Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3rd PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants 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. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser and approved by the PB.

Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project

team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center. As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants 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. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser and will be approved by the PB. The TE report will be publicly available in English on the UNDP ERC.

The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

Final Report: The project's terminal 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 PB during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Mandatory GEF M&E Requirements and M&E Budget:

GEF M&E requirements	Primary responsibility	Indicative Costs Charged to Project Budget[24] (US$)			Time frame
		GEF grant	Budget Code	Co-financing	
Inception Meeting/Workshop	UNDP Country Office	US$ 8,000[25]	75700	US $ 6,000 (in-kind)	Within first 2 months of project start
Inception Report	Project Manager	(included in routine project staff activity)			no later than one month after the inception workshop
Standard UNDP monitoring and reporting as outlined in the UNDP POPP	UNDP CO	(included in routine project staff activity			Monthly, quarterly and annually
Monitoring of indicators in project results framework	Project Manager	US$ 12,000 @ US$ 3,000/yr[26].	71400 75700	US $ 9,000 (US $ 3,000 per year in-kind)	Annually

[24] Excluding project team staff time and UNDP staff time and travel expenses.
[25] See Part X: TBWP, Budget Note 49
[26] See Part X: TBWP, (71400) - Part of the tasks of the Communications, M&E Officer (Budget Note 36); (75700) - Part of the budget for stakeholder meetings with monitoring and reporting on indicators as output (Budget Notes 15, 23, 32, and 43)

GEF M&E requirements	Primary responsibility	Indicative Costs Charged to Project Budget[24] (US$)			Time frame
		GEF grant	Budget Code	Co-financing	
GEF Project Implementation Report (PIR)	Project Manager and UNDP CO and UNDP-GEF team	(included in routine project staff activity		(as part of regular MMERE activity)	Annually
Lessons learned and knowledge generation	Project Manager; relevant contractors and consultants	US$ 11,000[27]	71400 75700	US$ 6,000	Annually
Monitoring of environmental and social risks, and corresponding management plans	Project Manager UNDP CO	(included in routine project staff activity		(as part of regular MMERE activity)	Annually
Addressing environmental and social grievances	Project Manager UNDP CO, UNDP BPPS as needed	None for time of project manager, and UNDP CO			As needed
Project Board (PB) meetings	PB UNDP CO Project Manager	US$ 10,000[28]	75700	(as part of regular MMERE activity)	At minimum annually
Supervision missions	UNDP CO	None[29]			Annually
Oversight missions	UNDP-GEF team	None[29]			Troubleshooting as needed
Knowledge management	Project Manager	1% of GEF grant (included in the component budgets		(as part of regular MMERE activity)	On-going
Mid-term GEF Core indicators	Project Manager, MTR consultants	included in routine project staff activity		(as part of regular MMERE activity)	Before mid-term review mission takes place.
Independent Mid-term Review (MTR) and management response	UNDP CO, PMO, and UNDP-GEF team	US$ 21,500[30]	71200 71300		Between 2nd and 3rd PIR.
Terminal GEF Core Indicators	Project Manager, TE consultants	included in routine project staff activity		(as part of regular MMERE activity)	Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP CO, PMO, and UNDP-GEF team	US$ 21,500[31]	71200 71300		At least three months before operational closure

[27] See Part X: TBWP. (71400) - Part of the tasks of the Communications, M&E Officer (Budget Notes 36 and 25); and Part of the tasks of the Community Engagement Officer; (75700) – Stakeholder meetings (Budget Notes: 15, 23, 32 and 43).
[28] See Part X: TBWP (75700) – Part of stakeholder meeting (Budget Note 15, 23, 32 and 43)
[29] The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.
[30] See Part X: TBWP Budget Notes 34 and 35
[31] See Part X: TBWP Budget Notes 34 and 35

GEF M&E requirements	Primary responsibility	Indicative Costs Charged to Project Budget[24] (US$)			Time frame
		GEF grant	Budget Code	Co-financing	
Translation of MTR and TE reports into English	UNDP Country Office	None			
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		**US$ 84,000**		**US $ 15,000 (plus other in-kind inputs)**	

VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Roles and responsibilities of the project's governance mechanism:

As practiced in all UNDP/GEF-supported projects, UNDP always endeavors to seek adaptive management approach in the implementation of projects. Based on the partnerships defined and firmed up during the project development, the management arrangements have always been anchored on co-operation and mutual sharing of benefits where accountability and responsibility for implementing the project and achieving the project outputs.

Based on a recent UNDP micro Harmonized Assessment for Cash Transfer (HACT) [32] assessment conducted for the Ministry of Mines, Energy and Rural Electrification (MMERE) as summarized in Annex I, it was concluded that MMERE will still need to develop further its capacity to execute solely projects with foreign funding partner/donor resources for the Government of Solomon Islands (SOI).

While considering the challenges of the current government set ups (e.g., cash flow issues and centralization of financial management) and in the interest of making decisions and delivering results timely, the project proponents and stakeholder have agreed that the SPIRES project be implemented following the UNDP National Implementation Modality (NIM). The responsibility for the implementation of this project is with MMERE. This role is reflected in a Standard Basic Assistance Agreement (SBAA) signed by UNDP with the Government of Solomon Islands and the Country Programme (or another document of agreement with the host Government as may be necessary). The MMERE, as UNDP's Implementing Partner will be responsible for the project implementation and achievement of the project outcomes and outputs, transparent practices and appropriate conduct and professional auditing in compliance with UNDP rules and regulations as per NIM. MMERE will be partnering with the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) and other partner SIG ministries such as the MFMR, MHMS, MCILI and MEHRD in project implementation, making them as Responsible Parties. Project implementation will be guided and supported by a Technical Working Group (TWG) at the national level and various committees and school boards at the rural and provincial sites.

The Implementing Partner (MMERE) will designate Responsible Parties who will provide implementation support to carry out project activities and produce outputs. Responsible Parties will act on behalf of the MMERE based on a written agreement or contract defining specific roles and responsibilities, including procuring goods and services using the project budget. Responsible Parties will be directly accountable to MMERE in accordance with the terms of their agreement or contract with MMERE.

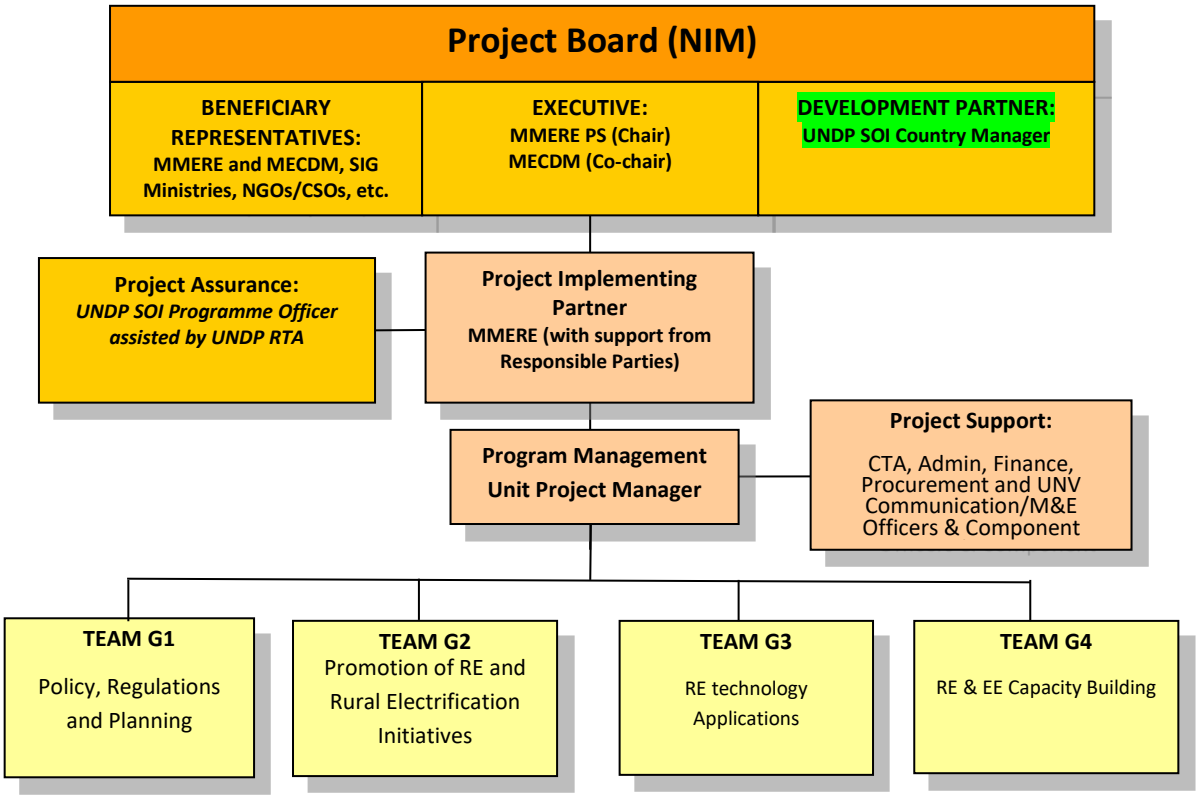
Implementation Partner: The Implementing Partner for this project is MMERE. The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document. MMERE will be supported by MECDM and other partner SIG ministries to carry out activities within a NIM project organizational structure and day-to-day project management and reporting lines.

The Implementing Partner is responsible for:

[32] An HACT assessments is conducted at the Solomon Islands Government ministry level to assess the capacity of the government institution in administer partnering funding, particularly if the partner is UNDP.

- 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.

The project organization structure is as follows:



The Project Board (also called Project Steering Committee) is responsible for taking corrective action as needed to ensure the project achieves the desired results. 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 Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.

The SPIRES will be governed by a project board. This board will constitute MMERE, MECDM, partner SIG ministries and invited representatives from beneficiary groups such as civil society and local communities, as may be relevant or applicable, and UNDP-SOI. Senior government officers at levels of permanent secretaries, undersecretaries and the UNDP-SOI Country Manager will be represented in the Board. This Board is specifically established by the project to provide management oversight of project activities and is to be chaired by MMERE. The Board will review progress and evaluation reports, and approve programmatic modifications to project execution, as appropriate and in accordance with GEF/UNDP procedures. Policy recommendations will be discussed and recommended for consideration by the Cabinet of Ministers and Parliament. The Board will be chaired by the MMERE under a NIM arrangement or at least co-chair the Board as may be deemed proper and agreed upon. Non-state stakeholders will also be represented on the Project Board if need be as observers, namely

from the private sector, academic and research institutions, NGOs, and CSOs which will be selected according to the relevance and applicability to SPIRES objectives. The Project Board will meet four (4) times per year or as and when required.

The specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible mitigation and management actions to address specific risks;
- Agree on project manager's tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded;
- Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;
- Ensure coordination between various donor and government-funded projects and programmes;
- Ensure coordination with various government agencies and their participation in project activities;
- Track and monitor co-financing for this project;
- Review the project progress, assess performance, and appraise the Annual Work Plan for the following year;
- Appraise the annual project implementation report, including the quality assessment rating report;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Review combined delivery reports prior to certification by the implementing partner;
- Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Address project-level grievances;
- Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.
- Ensure highest levels of transparency and take all measures to avoid any real or perceived conflicts of interest.

The composition of the Project Board must include the following roles:

Project Executive: Is an individual who represents ownership of the project and chairs the Project Board. The Executive is normally the national counterpart for nationally implemented projects. The Project Executive is: Ministry of Mines, Energy and Rural Electrification (MMERE). The co-chair is MECDM.

The Executive is ultimately responsible for the project, supported by the Beneficiary Representatives and the Development Partner. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The Executive must ensure that the project gives value for money, ensuring cost-conscious approach to the project, balancing the demands of Beneficiary Representatives and Development Partners.

Specific Responsibilities: (as part of the above responsibilities for the Project Board):

- Ensure that there is a coherent project organization structure and logical set of plans;
- Set tolerances in the AWP and other plans as required for the Project Manager;
- Monitor and control the progress of the project at a strategic level;
- Ensure that risks are being tracked and mitigated as effectively as possible;
- Brief relevant stakeholders about project progress;

- Organize and chair Project Board meetings.

Beneficiary Representative(s): Individuals or groups representing the interests of those 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 civil society representative(s) can fulfil this role. The Beneficiary representative(s) include: MMERE and MECDM. Other pertinent SIG Ministries, NGOs/CSOs may be included.

The Beneficiary Representatives are responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Beneficiary Representative role is to monitor progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. For the sake of effectiveness, the role should not be split between too many people.

Specific Responsibilities (as part of the above responsibilities for the Project Board):
- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Specification of the Beneficiary's needs is accurate, complete and unambiguous;
- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target;
- Impact of potential changes is evaluated from the beneficiary point of view;
- Risks to the beneficiaries are frequently monitored.

Development Partner(s): Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partner is UNDP-Solomon Islands.

The specific Responsibilities (as part of the above responsibilities for the Project Board) include:
- Make sure that progress towards the outputs remains consistent from the development partner perspective;
- Promote and maintain focus on the expected project output(s) from the point of view of development partner management;
- Ensure that the development partner resources required for the project are made available;
- Contribute development partner opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Arbitrate on, and ensure resolution of, any development partner priority or resource conflicts.

Project Assurance: UNDP performs the quality assurance and supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed, and conflict of interest issues are monitored and addressed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. UNDP provides a three – tier oversight services involving the UNDP Country Offices and UNDP at regional and headquarters levels. Project assurance is totally independent of project execution.

Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

The project manager will head the project management unit and should be recruited from the Solomon Islands. A key role of the PM is ensuring results specified in the project document are achieved in a timely manner. The PM reports to the project board and manage and supervise five other PMU staff. Administratively, the PM reports to the Team Leader of RSD (UNDP-Honiara), and on a day to day basis to the national project counterpart in MMERE.

The Implementing Partner appoints the Project Manager, who should be different from the Implementing Partner's representative in the Project Board. Specific responsibilities include:

- Provide direction and guidance to project team(s)/ responsible party(ies);
- Liaise with the Project Board to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Plan the activities of the project and monitor progress against the project results framework and the approved annual workplan;
- Mobilize personnel, goods and services, training and micro-capital grants to initiative activities, including drafting terms of reference and work specifications, and overseeing all contractors' work;
- Monitor events as determined in the project monitoring schedule plan/timetable, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments or reimbursement using the fund authorization and certificate of expenditures;
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports;
- Be responsible for preparing and submitting financial reports to UNDP on a quarterly basis;
- Manage and monitor the project 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 the annual workplan for the following year; and update the Atlas Project Management module if external access is made available;
- Prepare the GEF PIR and submit the final report to the Project Board;
- Based on the GEF PIR and the Project Board review, prepare the AWP for the following year;
- Ensure the mid-term review process is undertaken as per the UNDP guidance, and submit the final MTR report to the Project Board;
- Identify follow-on actions and submit them for consideration to the Project Board; and.
- Ensure the terminal evaluation process is undertaken as per the UNDP guidance, and submit the final TE report to the Project Board,

Governance role for project target groups: The project target groups will be engaged in decision making for the project through the Project Board consultation and meetings to be coordinated by the Project Management Unit. The broader governance environment may include various stakeholder groups and user groups of RE systems as applied to rural electrification. The engagements will also be done though the four Teams depending on the activities under the components relevant to policy making, data gathering, participation and procedural documentation. In this way, the project's governance will be integrated within the wider governance arena considering the capacity building of project management capability in the project organization as well as the target groups.

Project Management Unit: MMERE will establish a Project Management Unit (PMU) to be based in the MMERE and recruit its personnel for the day-to-day management of project activities. The PMU to be headed by a Project Manager (PM) will provide administrative, technical, management and coordination roles in collaboration with MECDM, and other partner SIG ministries (for demonstrations), provincial officers and provincial government institutions, and UNDP. UNDP will provide induction and regular training to PMU staff on UNDP procedures and policies so that they may effectively execute their roles and responsibilities.

Project Technical Officers: The project will be supported by project technical officers consisting of the following:

a) Chief Technical Adviser (CTA): The CTA will provide the strategic and technical support needed for the implementation of the project**.** He/She will be a part-time international consultant and will report directly to the UNDP RSD Team Leader under the UNDP Country Manager and support the Project Manager in the daily operation of the project. The CTA will provide capacity building to the Project Manager and project staff including the National Project Engineer for the first half of the project implementation period for eighteen (18) months.

b) National Project Engineer: a full-time national senior consultant to implement the RE application technologies in the specific sites. He/she will be work with the CTA in the planning, design and installation in collaboration with project partners including MMERE, MECDM and other pertinent partner SIG ministries.

c) Provincial Officers: two provincial officers will be recruited, on a full-time basis under the project and will be based in the provincial headquarters of Makira and Malaita Provinces. Their responsibilities will be focused on the day-to-day coordination and implementation of activities in the demonstration sites and working in collaboration with energy officers from MMERE and will be directly involved in the planning, design and engineering construction of RE/EE applications in the targeted demonstration.

Project Administrative Officers: The project will be supported by project administrative staff that will be designated by the UNDP SOI under a cost-sharing arrangement:

a) Project Assistant: staff to administer the day to day operations of the project and is directly responsible for the financial transactions of the project under the guidance of the project manager and helps the Project manager prepare, maintain and monitor the project budget. He/she is responsible for facilitating arrangements the project's travel, meeting logistics either in the country or abroad, and is additionally responsible to contribute to project deliverables, financial reports and annual work plans prepared by the Project Manager. This officer is expected to support procurement procedures & processes, which are inclusive of professional consultation services and equipment needed for the project's implementation. This position will report directly to the project manager

b) Procurement Officer: staff support to the PMU in all its procurement needs. This will include the sourcing strategies, project assets management, supporting logistical arrangements and contributing to procurement knowledge sharing with UNDP and MMERE in compliance with SIG procurement rules and procedures, and where necessary, UNDP procurement standards.

c) Community Engagement Officer: staff support to liaise with site demonstration communities and institutions and provincial governments during the planning stages of the project so that feasible

agreements and mutual understandings occur between communities, schools and PMU and local area implementing communities and institutions. This role is key to facilitating good faith and building trust with provincial governments and potential demonstration sites institutions. The community engagement officer is responsible for supervising the two provincial officers to be based in the provincial centers where the demonstration sites will be located.

d) Communications and Monitoring & Evaluation Officer: staff to be directly responsible for the communications aspects of the project, to improve its visibility in the Solomon Islands, Pacific region and the globe. He/she is also responsible to carry out periodic monitoring of project indicators, targets, outputs, activities and outcomes under the guidance of the project manager and UNDP Results-based management team with the UNDP SOI office. On the communications aspects, she/he is expected to liaise with communications team within UNDP, both within the Solomon Islands and the region and is expected to work with other projects that are operating in parallel to SPIRES as well as the media.

MMERE-Energy Division Staff: Staff of the Energy Division will provide technical support to the implementation of the project. They will also be providing supervisory roles in the design and engineering including construction of the solar power and hydropower systems that will be implemented

Technical Working Groups (TWGs): A working group comprised of independent experts, technical government agency representatives (MID, MCILI, MOFT, MRD, etc.), as well as representatives from stakeholder groups (NGOs, faith-based organizations, private sector, Solomon Power, etc.) will discuss and deliberate on the various technical analyses as well. Initial stakeholders that are part of the SPIRES PPG may likely be members of his technical working group.

Demonstration site committees: These will be formed by the project to guide project intervention to be tailored to the needs of their community people, as they are the ultimate beneficiaries of this project. Work with this institution will be guided by the technical working group, especially in the development of institutional and financial mechanisms to sustaining operations and maintenance of the RE applications.

Learning and knowledge sharing:

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Project extensions: The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country

Office oversight costs in excess of the CO's Agency fee specified in the DOA during the extension period must be covered by non-GEF resources.

IX. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is USD19,165,257. This is financed through a GEF grant of USD2,639,726, and USD16,525,531 in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Confirmed Co-financing: The following co-financing arrangements with the different projects of MMERE and MECDM will support the SPIRES activities/outputs (as indicated) where the co-financed activities will be subsumed. The actual realization of project co-financing will be monitored during the *mid-term review* and terminal evaluation process and will be reported to the GEF. Note that all project activities included in the project results framework that will be delivered by co-financing partners (even if the funds do not pass through UNDP accounts) must comply with UNDP's social and environmental standards. The planned parallel co-financing will be used for the following project activities/outputs:

Table 7: Summary of Co-financing

Co-financing source	Co-financing type	Co-financing amount, US$	Planned SPIRES Activities/Outputs	Risks	Risk Mitigation Measures
MMERE					
Sustainable Program for widespread rural electrification for water and energy security	Grant	827,613 (including community associations inputs)	Comp. 3.1 and 3.2 (Design and installation of RE equipment; Comp. 4 (Capacity building); Comp. 2 (RE applications)	Inadequate capacity and interest by participants, community and private entrepreneurs; land issues	Strong support by MMERE and the project through TA, promotion and management; addressing land issues; and capacity development of participants, community and private entrepreneurs
Solar electrification of rural based boarding schools	Grant	7,242,532 (including SIG, relevant inputs from ADB Solar Power Development project and School administration)	Comp. 3.1 and 3.2 (design and installation of RE equipment)	Inadequate capacity and interest by participants, community and private entrepreneurs; delays in settlement of land disputes, transportation	Strong support by MMERE, ADB Project and the SPIRES project through TA; promotion and management; addressing land issues and capacity development of all participants
Mini-hydropower Development Project in 4 communities	Grant	1,299,138 (including SIG, private sector and community associations inputs)	Comp. 3.1 and 3.2 (design and installation of RE equipment)	Inadequate capacity and interest by participants, community and private entrepreneurs in	Strong support by MMERE and the project through TA, promotion and management; addressing land

Co-financing source	Co-financing type	Co-financing amount, US$	Planned SPIRES Activities/Outputs	Risks	Risk Mitigation Measures
				socio-economic activities for the productive application of electricity; delay in settlement of land issues, access roads and other related issues	issues; and capacity development of participants, community and private entrepreneurs
Solomon Power (SIEA) project in rural electrification	Grant	200,000	Comp. 3.1 and 3.2 (design and installation of RE equipment) and Comp. 4 (Capacity building)	Lack of capacity and resources by institution; Inadequate capacity and interest by participants, community and private entrepreneurs in socio-economic activities for the productive application of electricity	Strong support by SIEA, MCILI and the project through TA, promotion and management; and capacity development of participants, community and private entrepreneurs
MMERE, ACOM Education Authority, UNCDF/LVG inputs towards the Selwyn College Diesel Hybrid Project)	Grant for USD1,457,491/In-kind for USD389,560	1,847,051	Comp 2 (financial & institutional mechanisms and Comp 3.1 and Comp 3.2 ((design and installation of the RE equipment)		
Sub-total MMERE/SIEA		**11,416,334**			
MECDM					
Selwyn College Diesel Hybrid Project	Grant for USD923,076/In-kind for USD102,565	1,025,641 (including MECDM, Selwyn College, community association, private sector/church, ACOM Education Authority,)	Comp. 3.1 and 3.2 (design and installation of RE equipment)	Lack of capacity and resources by institution; Inadequate capacity and interest by participants, community and private entrepreneurs in socio-economic activities for the productive application of electricity	Strong support by MECDM and the project through TA, promotion and management; and capacity development of participants, community and private entrepreneurs
MFMR					
Constituency Development	Grant for USD3,000,000/In-	3,409,720 (including	Comp. 3.1 and 3.2 (design and	Lack of capacity and resources by	Strong support by MFMR and

Co-financing source	Co-financing type	Co-financing amount, US$	Planned SPIRES Activities/Outputs	Risks	Risk Mitigation Measures
Fund Fisheries Centers Project	kind for USD409,720	inputs from Ministry of Fisheries, community and private entrepreneurs),	installation of RE equipment)	fishing communities in micro-grid solar PV systems; Inadequate capacity and interest by participants, community and private entrepreneurs in operating and maintaining solar PV supply systems and in socio-economic activities for the productive application of electricity	the project through TA, promotion and management; and capacity development of participants, community and private entrepreneurs
MHMS					
Program of building infrastructures under the RDP consisting of Rural Health Clinics, Area Health Centers	Grant for USD90,000/In-kind for USD10,000	100,000 (including identification of health-related activities and services and operation and maintenance)	Comp. 3.1 and 3.2 (design and installation of RE equipment); Comp. 4 (Capacity building)	Lack of capacity and resources by institution	Strong support by MHMS and the project through TA, promotion and management; and capacity development of participants, community and private entrepreneurs
MCILI					
Economic Growth Centers program	Grant for USD426,456/In-kind for USD47,380	473,836 (including MCILI, Community, private entrepreneurs' inputs)	Comp. 3.1 and 3.2 (design and installation of RE equipment); Comp. 4 (Capacity building)	Lack of capacity and resources by institution	Strong support by MCILI and the project through TA, promotion and management; and capacity development of participants, community and private entrepreneurs
UNDP	Grant	**100,000**	Project Management Component	Reduction of office financial resources allocation & lack of communication between CO staff	Strong commitment by CO in supporting the project, and effective communication in C0
TOTAL		**16,525,531**			

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the PB will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the PB. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team as these are considered major amendments by the GEF: a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more; b) Introduction of new budget items/or components that exceed 5% of original GEF allocation. Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

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.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP.[33] On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. Operational closure must happen with 3 months after posting the TE report to the UNDP ERC. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP programme manager (UNDP Resident Representative) 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. In all cases of transfer, a transfer document must be prepared and kept on file[34]. The transfer should be done before Project Management Unit complete their assignments.

Financial completion: 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).

The project will be financially completed within 6 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and

[33] see https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx
[34] See https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

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 the BPPS/GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/GEF Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF Trustee.

X. TOTAL BUDGET AND WORK PLAN (TABLE 8)

Total Budget and Work Plan			
Atlas[35] Proposal or Award ID:	**00092265**	Atlas Primary Output Project ID:	**00097073**
Atlas Proposal or Award Title:	**Stimulating Progress towards Improved Rural Electrification in the Solomons (SPIRES)**		
Atlas Business Unit	FJI10		
Atlas Primary Output Project Title	**Stimulating Progress towards Improved Rural Electrification in the Solomons (SPIRES)**		
UNDP-GEF PIMS No.	PIMS 6089		
Implementing Partner	*In Solomon Islands: Ministry of Mines, Energy and Rural Electrification*		

GEF Component / Atlas Activity	Responsible Agency	Source of Fund	Account Code	Description	Annual Expenses				TOTAL	Budget Notes
					Year 1	Year 2	Year 3	Year 4		
COMPONENT 1: RE AND RURAL ELECTRIFICATION POLICIES, REGULATIONS AND PLANNING IMPROVEMENTS										
Outcome 1: Enforcement of approved policies, and rules and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands	MMERE	GEFTF	71200	International Consultants	48,888	24,444			73,332	1
			71400	Contractual Services - Individual	5,883	5,883	6,876	6,876	25,518	2
			71600	Travel	7,236	2,874			10,110	3
			72800	IT equipment	3,860				3,860	4
			74200	Audio Visual & Print Prod Costs	710	710	710	710	2,840	5
			74500	Miscellaneous Expenses	313	313	313	313	1,252	6
			75700	Training, workshops and conference	8,088				8,088	7
Component 1Total					**74,978**	**34,224**	**7,899**	**7,899**	**125,000**	
COMPONENT 2: PROMOTION OF RE AND RURAL ELECTRIFICATION INITIATIVES										
Outcome 2: Enforced improved institutional and financial mechanisms in the integrated planning	MMERE	GEFTF	71200	International Consultants	48,888	24,444			**73,332**	8
			71400	Contractual Services - Individual	7,844	7,844	9,168	9,168	**34,024**	9
			71600	Travel	5,760	8,640	8,640	8,640	**31,680**	10

[35] See separate guidance on how to enter the TBWP into Atlas

GEF Component / Atlas Activity	Responsible Agency	Source of Fund	Account Code	Description	Annual Expenses				TOTAL	Budget Notes
					Year 1	Year 2	Year 3	Year 4		
and implementation of rural electrification and RE-based energy production in the off-grid areas			72100	Contractual Services - Companies		30,000	20,000		**50,000**	11
			72200	Equipment and Furniture		31,930	7,718	-	**39,648**	12
			74200	Audio Visual & Print Prod Costs	1,200	1,601	2,994		**5,795**	13
			74500	Miscellaneous Expenses	688	688	688	688	**2,752**	14
			75700	Training, workshops and conference	2,400	3,600	3,600	4,169	**13,769**	15
			73400	Rental & Maintenance of Other Equipment	12,500	3,500	4,000	4,000	**24,000**	16
Component 2Total					**79,280**	**112,247**	**56,808**	**26,665**	**275,000**	
COMPONENT 3. RE TECHNOLOGY APPLICATIONS FOR SUPPORTING RURAL SOCIO-ECONOMIC DEVELOPMENT										
Outcome 3.1: Adoption and implementation of climate resilient and low carbon electricity applications in increasing access to electricity in off-grid areas	MMERE	GEFTF	71200	International Consultants	48,888	24,444			**73,332**	17
			71400	Contractual Services - Individual	12,840	12,840	15,399	15,399	**56,478**	18
			71600	Travel	2,880	5,760	5,760	2,880	**17,280**	19
			72100	Contractual Services - Companies		3,215			**3,215**	20
			72200	Equipment and Furniture	2,480				**2,480**	21
			74500	Miscellaneous Expenses	410	410	410	410	**1,640**	22
			75700	Training, workshops and conference	1,200	2,400	3,600	2,400	**9,600**	23
				Sub-total Outcome 3.1	**68,698**	**49,069**	**25,169**	**21,089**	**164,025**	
<u>Outcome 3.2:</u> Increased confidence in, and application of, RE technologies and RE-based power generation to support socio-economic development in off-grid areas	MMERE	GEFTF	71200	International Consultants	36,666	24,444			**61,110**	24
			71400	Contractual Services - Individual	32,540	32,540	37,490	37,490	**140,060**	25
			71600	Travel	5,760			5,760	**11,520**	26
			74700	Transport, Shipping and Handle		23,520	23,520		**47,040**	27
			72100	Contractual Services - Companies		30,000	33,784		**63,784**	28
			72200	Equipment and Furniture		279,846	372,772	235,816	**888,434**	29

GEF Component / Atlas Activity	Responsible Agency	Source of Fund	Account Code	Description	Annual Expenses				TOTAL	Budget Notes
					Year 1	Year 2	Year 3	Year 4		
			73400	Rental & Maintenance of Other Equipment			20,000	20,000	**40,000**	30
			74500	Miscellaneous Expenses	813	813	813	813	**3,252**	31
			75700	Training, workshops and conference		2,400	2,400		**4,800**	32
			73100	Rental & Maintenance-Premises			20,000	20,000	**40,000**	33
				Sub-total Outcome 3.2	**75,779**	**393,563**	**510,779**	**319,879**	**1,300,000**	
Component 3 Total					**144,477**	**442,632**	**535,948**	**340,968**	**1,464,025**	
COMPONENT 4: RE & EE CAPACITY BUILDING										
Outcome 4: Enhanced awareness and knowledge of the government, private sector and communities on the cost-effective application of RE and EE technologies/ practices	MMERE	GEFTF	71200	International Consultants	36,666	25,722		13,500	**75,888**	34
			71300	National Consultants		8,000		8,000	**16,000**	35
			71400	Contractual Services - Individual	63,736	63,736	73,051	73,051	**273,574**	36
			71600	Travel	23,600	13,298	13,698	15,827	**66,423**	37
			72100	Contractual Services - Companies			8,000	12,000	**20,000**	38
			72200	Equipment and Furniture	23,500	13,000	6,000		**42,500**	39
			72800	Information Technology Equip.	3,000	9,738	600	5,600	**18,938**	40
			74200	Audio Visual & Print Prod Costs	16,000	15,378	15,400	13,807	**60,585**	41
			74500	Miscellaneous Expenses	406	406	406	406	**1,624**	42
			75700	Training, workshops and conference	16,000	16,000	19,000	17,678	**68,678**	43
			73300	Rental & Maintenance of IT equip	5,790				**5,790**	44
Component 4 Total					**188,698**	**165,278**	**136,155**	**159,869**	**650,000**	
Total All Components					**487,433**	**754,381**	**736,810**	**535,401**	**2,514,025**	

Project management costs	MMERE	GEFTF	71400	Contractual Services Individual	33,000	33,000	16,500	16,500	99,000	45
			72100	Contractual Services Companies	4,000	4,000	4,000	4,000	16,000	46
			72400	Communication and Audio-Visual Equipment	1,000	1,000	0	0	2,000	47
			72500	Stationery & Other Office Supply	350	351	0	0	701	48
			75700	Training, workshops and conference	8,000				8,000	49
Total PMC (GEF)					**46,350**	**38,351**	**20,500**	**20,500**	**125,701**	
Overall GEF Budget					**533,783**	**792,732**	**757,310**	**555,901**	**2,639,726**	

Summary of Funds[36]

Fund Source	**Amount US$**				**Total**
	Year 1	**Year 2**	**Year 3**	**Year 4**	
Global Environment Facility	533,783	792,732	757,310	555,901	**2,639,726**
United Nations Development Programme	0	33,726	37,704	28,570	100,000
Solomon Islands Government	2,529,532	6,668,764	5,831,065	1,396,170	16,425,531
TOTAL	**3,063,315**	**7,495,222**	**6,626,079**	**1,980,641**	**19,165,257**

Budget Notes:

	Component 1
1	Part of fees for the recruitment of a Project Technical Advisor (contracted as Project Technical Specialist) with Fixed Term Appointment that will be responsible for Activity 1.1.1; 1.1.2; 1.1.3; 1.2.1;1.2.2;1.2.3;1.2.4;1.3.1;1.3.2;1.3.3; 1.4.1;1.4.2 & 1,4.3 @USD48,888 per annum x 1.5 years (USD73,332)
2	National Project Engineer salaries, to be contracted under to be contracted under a service contract arrangement in implementing Activities (1.2.1 to 1.4.3) @USD1,916 for Y1 to Y2 and a rate of USD2,292 for Y3 and 4. *Note that this is only portion of the national engineers' salaries, other portions are cost-shared with components 2 and 3

[36] Summary table should include all financing of all kinds: GEF financing, co-financing, cash, in-kind, etc.

3	Costs to cover for travel of the Project Technical Specialist to duty station (USD3,750) in Y1; and Project Management Unit travels for implementation of a policy review and establishment of technical working group in Y1 (USD3,486 for Activities 1.1.1; 1.1.2 and 1.1.3); and in Year 2, cost of USD2,874 for executing Activities 1.4.1 and 1.4.2
4	Establishment of technical office particularly on ICT equipment for technical officers including laptops totaled to US$3,860 (2 units at USD1,930 each.)
5	This will cater for costs including printing required for Activities 1.1.1 to 1.4.3 with an allotted cost of USD710 per year for Y1 to Y4.
6	1% of outcome budget for contingencies - to cover inflation in costs incurred for implementing Activities 1.1.1 to 1.4.3
7	Costs allocated for stakeholder consultation workshops for the implementation of Activity 1.1.1 in Y1 (USD2,022) and stakeholder consultations workshops in Y1 (Activity 1.1.2; 1.1.3 @USD3,033 per workshop: USD6,066), totaling to USD8,088 for Costs are inclusive of venue, rental and catering costs
	Component 2
8	Part of International consultant fees for Project Technical Specialist to support PMU for Year 1 and 2, to be contracted as FTA and will be responsible for the implementation of Activities 2.1.1; 2.1.2; 2.1.3; 2.2.1; 2.2.2 & 2.2.3 @USD48,888 x 1.5 years = USD73,332.
9	Costs allocated for a National Project Engineer salary from Year 1 (USD7,844), Year 2 (USD7,844), Year 3 (USD9,168) to Year 4 (USD9,168), totaling to USD34,024 over four years to support the Project Technical Specialist and will be responsible for implementing Activities 2.3.1; 2.3.2; 2.4.1 & 2.4.2 *Note that this is cost-shared with components 1 and 3.
10	Travel costs for Project Management Unit staff to conduct e and formulation (Activity 2.1.1; 2.1.2 and formulation of the recommended financial and institutional mechanism (Activity 2.2.1), the demonstration sites @USD2,880 per trip x 2 trips in Y1, totaling to USD5,760; implementation of Activity 2.2.2; 2.2.3 and 2.4.1 @USD2,880 x 3 trips in Y2, totaling to USD8,640; execution of 2.3.2 & 2.4.1 in Y3 (USD8,640); and travels required for the implementation of Activity 2.4.2 @USD2,880 x 3 trips in Y4, equivalent to USD8,640 *Note: This is inclusive of DSA, terminal expenses and plane fares, boat hire, vehicle hire and fuel
11	This cost is allocated for local companies/firms to establish and operate the RESCOs or sinking funds - institutional & financing mechanism in the site demos with Year 2 allocation of USD30,000 and Year 3 allocation of USD20,000, totaling to USD50,000 (Outputs 2.2 and 2.3 and Activities 2.2.3 and 2.3.1).
12	Equipment required for the establishment and operationalization of RESCOs in the demonstration sites with a total of USD31,930 and USD7,718 (Outputs 2.2 and 2.3/ Activities 2.2.3 and 2.3.1) during the operation stage of the selected institutional and financing mechanisms, in Y2 and Y3.
13	Costs covering for Printing & publication for institutional and financial mechanism papers, guides and manuals in Years 1,2, and 3 with a total cost of US$5,795, respectively (Outputs 2.1 and 2.4-assessment & evaluation reports for the evaluation and the documentations of the selected institutional & financial mechanisms to be established in the demonstration sites)
14	1% of outcome budget for contingencies - to cover inflation in costs and variations in exchange rates for all outputs (Output 2.1; 2.3; 2.3 and 2.4)
15	This is cost allocated for convening of Stakeholder consultations workshops/meetings (Activity 2.1.1) and (Activity 2.2.1/2.2.2) for the evaluation institutional & financial mechanisms, @USD1,200 per workshop x 2 = USD2,400 in Year 1; stakeholder consultations for the formulation of recommended institutional & financial arrangement & its operation (Activity 2.2.3 and 2.3.1) @1,200 per workshop x 3 = USD3,600 in Year 2; operationalization of the recommended mechanism & documentation of lessons learned (USD3,600) in Year 3; and the evaluation of the institutional & financial mechanism & strengthening (Activity 2.4.1 & 2.4.2) with a total of USD4,169 in Year 4. The results of the meetings should also feed into the monitoring of indicators in project results framework, lessons learned reports and knowledge generation.
16	Office rental and equipment hire including vehicle hire with allocated costs of USD12,500 (Year 1), USD3,500 (Year 2), USD4000 (Year 3) and USD4,000 (Year 4).
	Component 3, Outcome 3.1

17	Part of International consultant fees for Project Technical Specialist who will be responsible for the implementation of Activity 3.1.1.1; 3.1.1.2; 3.1.2.1; 3.1.2.2; 3.1.3.1; 3.1.3.2; 3.1.3.3 and 3.1.4.1 @USD48,888 in Year 1, and @USD24,444 in Year 2 (Project Specialists to be contracted as FTA for 1.5 years)
18	Part of fees of a Community Engagement Officer - @USD8,919 per year for Year 1 and 2, and @USD10,815 per year for Year 3 and 4; Part of partial fees of the National Project Engineer - @USD3,921 each in Year 1 and 2, and @USD4,584 in Year 3 and 4 *Note: These position costs are cost-shared with other components 1, 2 for NPE and components 3.2 for community engagement officer.
19	This cost caters for PMU staff travels including DSAs, airfares, per diems to conduct the DREI assessments (Output 3.1.1), and implementation of activities related to Outputs 3.1.2; 3.1.3 and 3.1.4; @USD2,880 per trip including 1 trip in Year 1 (USD2,880); 2 trips in Year 2 (USD5,760); 2 trips in Year 3 (USD5,760); and 1 trip in Year 4 (USD2,880)
20	Costs covering for local companies to be contracted for the designing of the Re application technologies for three demonstrations sites (Activity 3.1.2.1 and 3.1.2.2)
21	Software for engineering designs in Year 1 or Year 2 totaling to USD2,480 (Activity 3.1.2.1 and 3.1.2.2).
22	0.25% to cover for contingencies including inflation and variations in exchange rates, total amount (USD1,640)
23	Costs covering stakeholder consultation workshops & meetings in the demonstrations sites (Output 3.1.1; 3.1.2) @USD600 per workshop x 2 workshops = USD1,200 in Year 1; implementation of Outputs 3.1.1; 3.1.2 and 3.1.3 @USD600 x 4 workshops = USD2,400 in Year 2; In Year 3 will cover the costs of convening of stakeholder meetings/consultations for Outputs 3.1.3 and 3.1.4) @USD600 per workshop x 6 workshops = USD3,600; and in Year 4 costs is allocated for 4 workshops @USD600, equivalent to USD2,400. The total sum of trainings and workshops is USD9,600. The results of the meetings should also feed into the monitoring of indicators in project results framework , lessons learned reports and knowledge generation.
	Component 3, Outcome 3.2
24	Part of International consultant fees for Project Technical Specialist: @USD36,666 in Year 1, and @USD24,444 in Year 2 (to be contracted as FTA for 1.5 years). The Project Technical Specialist will be responsible for implementation of Activities 3.2.1.2; 3.2.1.3; 3.2.2.1 & 3.2.2.2) * Note that fees/salaries for PTS are cost-shared with components 1, 3 and 4.
25	Part of costs for the recruitment of a Community Engagement Officer and two Provincial officers to be based in Makira/Ulawa and Malaita Provinces; Year 1 (USD32,540); Year 2 (USD32,540); Year 3 (USD37,490); and Year 4 (USD37,490). This is for the implementation of Outputs 3.2.1 to 3.2.2.* Note salaries for all positions are cost-shared between components
26	Travel costs for PMU staff and contractors on installation of RE solar power and hydropower technologies in demonstration sites @2,880 x 2 trips in Year 1 = USD5,760; including travels for PMU staff for the installation (Output 3.2.1) and projects financed for implementation (Output 3.2.2) with a cost of USD5,760 in Year 4. *Note this is inclusive of DSAs, terminal expenses, vehicle hires, boat hire, fuel, freight and shipping of RE equipment
27	Sea freights for transportation of RE equipment's to the provinces @USD23,520 per year for Year 2 and 3.
28	Local contractors to install RE/EE technologies at demonstration sites over four years, specifically, Year 2 (US$30,000), Year 3 (US$33,784) with a total of US$63,784
29	This covers the acquisition and installation of the renewable technologies that will be installed at the demonstration sites (Output 3.2.1 & Activity 3.2.1.1 & 3.2.1.2 with Y2 allocations for acquisition and installations of RE technologies at the first demo site (USD279,846), and second demo sites in Y3 (USD373,772) and acquisitions and installations of the third demo sites in Y4 (USD235,816)
30	Costs allocated for RE/EE equipment operations and maintenance supplies costs (Activity 3.2.1.3)
31	0.5% to cover for contingencies including inflation and variations in exchange rates, total amount of USD3,252

32	Stakeholder consultation workshops to be implemented with community & provincial stakeholders (Activity 3.2.1.2 & 3.2.1.3) in Y2 (USD2,400) and Y3 (USD2,400), totaling to USD4,800. The results of the meetings should also feed into the monitoring of indicators in project results framework, lessons learned reports and knowledge generation.
33	Rental & storage of equipment of RE equipment for Year 3 and Year 4 of the project @USD20,000 per annum x 2 years, equivalent to USD40,000
	Component 4
34	Part of the International consultant to be contracted under a fixed term contract, Project Technical Specialist for 1.5 years to be remunerated in Y1 USD36,666 and Y2 USD12,222; and Mid-Term Review and Terminal Evaluation specialists @USD13,500 for Y2 and Y4
35	National consultants to be hired for Mid-Term Review and Terminal Evaluation of the project, USD8,000 per year for Y2 and Y4.
36	Communications and M&E officer salaries for Years 1 to 4 at a total cost of US$78,942; Provincial officers' partial cost of salaries for Year 1 to 4 (US$95,218); and Project Manager's salaries for year 1 to 4 at a partial cost of US$99,414. Note that provincial officers' salaries and Project Managers salaries are cost-shared with other components. And additionally, note that Communications & M&E to be cost-shared with other components.
37	Costs covering for selected community representatives to attend to a capacity development programme (Output 4.1) @USD3,594 per annum x 4 years = USD14,376; PMU staff to travel associated with the designing & implementation of a national energy resource data base @USD2,305 x 4 years = USD9,220 (Output 4.2), Travels for PMU staff and SIG officers to demonstration sites on knowledge sharing and exchanges in promoting RE and EE (Outputs 4.3) @5,750 per annum x 4 years = USD23,000; travels required for and convening of a regional exchange and inception workshop exchanges (Activity 4.3.1 to 4.3.3) in Year 1 (USD15,000) and Year 4 (USD4,827)
38	Provision of capacity development for communities and SIG partners by local education institutions (Output 4.2)
39	Costs covering for Equipment office equipment needed for capacity development of PMU, and SIG counterparts (Output 4.1) in Y1 and Y2 @USD5,000 per annum x 2 years = USD10,000; installation of IT infrastructure required for database systems (Output 4.2) @ USD6,000 in Year 2 & 3, totaling to USD12,000; IT equipment required for the set-up of the KM system (USD6,500) in Y1; and equipment required in the demonstration sites from Y2 to Y4 (USD14,000).
40	To cover for Geological Information Systems/ Resource Mapping software in support of PMU Knowledge Management required under Output 4.2. This will total costs of o USD18,938
41	Printing and production including print of awareness materials etc. for four years with a total cost of US$60,585.
42	0.25% of outcome budget to cover for contingencies relating to inflation and variations in exchange rates
43	This will cover capacity development training for community members and Solomon Islands government officers in a contracted education institution for Y1 and Y2 (USD15,000); stakeholder capacity building trainings at demonstration sites in Y2,Y3 and Y4 (Output 4.2) (USD18,000); convening of knowledge sharing exchanges from year 2 to year 4 @USD9,566 (USD28,678); and part of Project Board meetings budget (USD 7,000). The results of the meetings should also feed into the monitoring of indicators in project results framework, lessons learned reports and knowledge generation.
44	Labor hire for IT infrastructure of PMU for Year 1 with a cost of USD5,790 (Output 4.1).
	Project Management
45	Contractual Services Individual @ US$ 125/day, 22 days/month; 12 months/year. Full time for Years 1 & 2; Half Time for Years 3 & 4
46	Contractual Services Companies for Financial Audits @US$ 4,000/Year for 4 Years =US$ 16,000
47	Communication and Audio-Visual Equipment Communication cost (internet, phone, fax, AV equipment replacement parts, etc.) for first 2 years @ US$ 1,000/year

48	Stationery and Other Office Supplies. Purchase of stationary products and other office supplies (Years 1 & 2) 4@ US$ 390/year
49	Inception workshop expenses inclusive of inception workshop proceedings documentation.

XI. 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 Solomon Islands and UNDP, signed on 4 April 1986. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by the Ministry of Mines, Energy and Rural Electrification (MMERE) 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.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XII. RISK MANAGEMENT

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 list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.

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.

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).

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. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

10. 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.

11. 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.

12. 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.

13. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, 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 or corruption, 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.

14. 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.

15. 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.

16. 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.

XIII. MANDATORY ANNEXES

Annex A. Multiyear Work Plan

Annex B. Monitoring & Evaluation Plan

Annex C. Overview of Technical Consultancies/Subcontracts

Annex D: GEF Interim Offline Reporting Template for GEF-7 Core Indicators

Annex E. Terms of Reference

Annex F. UNDP Social and Environmental and Social Screening Template (SESP)

Annex G. UNDP Project Quality Assurance Report

Annex H. UNDP Risk Log

Annex I. Results of the capacity assessment

Annex J. Agreements & Commitment Letters

Annex K. Description of EC&EE and LC Demonstrations

Annex L. GHG Emission Reduction Estimates

Annex M. Annual Targets

Annex N. Gender Analysis

Annex O. Knowledge Management Strategy

Annex P: Stakeholder Engagement Plan

Annex A. SPIRES Multi Year Work Plan (Table A.1)

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 1: Enforcement of approved policies, and rules and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands																	
1.1: Completed review and enhancement of the draft national energy policy, including the proposed policies on renewable energy (RE Policy), energy efficiency (EE Policy) and rural electrification, associated investment plans, and the rural electrification program	UNDP																
1.2: Formulated, approved and enforced policies, implementing rules and regulations (IRRs) on RE and EE technology applications for rural electrification	UNDP																
1.3: Recommended, approved and enforced rural electricity regulatory framework	UNDP																
1.4: Formal rural electrification plans at the national and local levels	UNDP																
Outcome 2: Enforced improved institutional and financial mechanisms in the integrated planning and implementation of rural electrification and RE-based energy production in the off-grid areas																	
2.1: Evaluation report on the current institutional arrangements for the financing and implementation of the rural electrification program of the country.	UNDP																
2.2 Formulated and recommended institutional and financing mechanisms that support the enhanced implementation of the rural electrification program	UNDP																
2.3: Completed rural electrification initiatives facilitated by the adopted and enforced institutional and financial mechanisms	UNDP																
2.4: Completed evaluation report on the adopted institutional and financing mechanisms, including	UNDP																

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
suggested policies and strategies for sustaining and/or enhancing the rural electrification program's institutional and financing mechanisms.																	
Outcome 3.1: Adoption and implementation of climate resilient and low carbon electricity applications in increasing access to electricity in off-grid areas																	
3.1.1: Completed DREI[1] assessments of ongoing and planned RE-based electricity generation activities in the off-grid areas	UNDP																
3.1.2: Improved system for sourcing of high-quality equipment at best cost for low carbon technology system (RE and EE) equipment and components	UNDP																
3.1.3 Approved design, engineering, financial and implementation plans for the demonstrations on RE-based electricity generation and EE technology application in the electricity end-use sector in selected off-grid areas	UNDP																
3.1.4: Approved design, engineering, financial and implementation plans for the replication and/or scale up of demonstrated RE-based electricity generation and EE technology applications in other off-grid areas	UNDP																
3.1.5: Approved portfolio of follow-up rural electrification projects in other major off-grid areas, including investment plan	UNDP																
Outcome 3.2: Increased confidence in, and application of, RE technologies and RE-based power generation to support socio-economic development in off-grid areas.																	
3.2.1: Successfully installed and operational systems of the implemented demonstrations of RE-based electricity generation and EE technology application in the electricity end-use sector in selected off-grid areas	UNDP																
3.2.2 RE and EE technologies application projects designed and financed for implementation as influenced by the results and outcomes of the demonstrations	UNDP																
Outcome 4: Enhanced awareness and knowledge of the government, private sector and communities on the cost-effective application of RE and EE technologies/ practices																	

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
4.1: Developed and implemented capacity development program on rural electrification planning, energy-integrated development planning, RE/EE technology application project design, implementation, operation and maintenance	UNDP																
4.2 Designed, implemented and operational national supply and consumption monitoring, reporting and database system, including data/information on the annual energy performance and impact assessment of implemented demos	UNDP																
4.3: Operational information exchange system for the promotion and dissemination of knowledge on sustainable energy technology applications in support of rural electrification and low carbon development.	UNDP																
4.4: Established local service provision industry that supports the rural electrification program and the rural electricity sector	UNDP																

Annex B. Monitoring & Evaluation Plan

Table B.1. SPIRES Monitoring Plan

The Project Management Unit will establish system of the collection of results, analysis of data and report on progress and areas of concern particularly in relation to the barriers that have been identified per the following monitoring plan:

	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
Project Objective: Facilitation of the achievement of increased access to electricity in rural communities in the Solomon Islands	Cumulative incremental GHG emission reduction from the electricity sector in rural areas, tons CO_2 Cumulative incremental fossil fuel savings due to sustainable energy and low carbon interventions implemented, toe	Based on the monitored RE generation in the rural areas, i.e. Non-SEIA Outside Honiara and Non-SEIA within Honiara.	kWh equivalent generation converted to tons of oil equivalent (toe) and CO_2 Emission Reductions	Semi-annually; Reported in DO tab of the GEF PIR	ED/MMERE, MECDM, SEIA, PMU and consultants	• Annual energy supply and consumption reports submitted by relevant SIG entities, SIEA and the ERE-MMERE • Reports generated from the proposed national energy supply and consumption monitoring, reporting and database system • Project M&E and activity reports	• Realization of committed co-financing from the national and local governments in the implementation of project activities and monitoring systems • RE-based energy consumption growth will be sustained at a rate being achieved in recent years at 6.6% p.a.

	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
	% electricity access in rural areas, %		ED/MMERE and SEIA MECDM, reports and calculation according to GEF GHG measurement methodology	Annually; Reported in DO tab of the GEF PIR	ED/MMERE, MECDM, SEIA, PMU and consultants	Reports on GHG (CO_2) emission reduction from power generation	
	No. of new jobs created and percent women due to enhanced electricity access in off-grid areas in the country	Survey result on persons involved indicating women participation	Survey result on the participation of people, and indicating women involvement in planning and implementation	Annually; Reported in DO tab of the GEF PIR	ED/MMERE, MECDM, SEIA, PMU and consultants	Project M&E reports MMERE and SEIA Data on % Rural electricity access	
Outcome 1: **Enforcement of approved policies and rules and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands**	No. of implemented off-grid rural electrification projects facilitated by the approved and enforced energy access policies,	Number of projects involved indicating policy measures in various aspects of RE/EE program activities; installations of RE-based systems	Established reporting system	Annually; Reported in DO tab of the GEF PIR	ED/MMERE, SEIA, PMU and consultants	Project M&E reports	Acceptance of community of RE/EE application
	No. of designed and implemented pilots on the implementation of applicable policy and regulatory framework for rural electrification	The policy and regulatory & framework for rural electrification should be novel in the Solomon Islands, but have been implemented elsewhere in the world	Established reporting system	Annually; Reported in DO tab of the GEF PIR	ED/MMERE, SEIA, PMU and consultants	Completion report on the pilots on the policy framework application	
	No. of formulated, approved and implemented rural electrification plans.	Electrification plans developed and implemented in the 9 provinces of SOI	Reporting to ED/MMERE MECDM, and SEIA	Annually; Reported in DO tab	Dept. of Education, ED/MMERE, MECDM, SEIA,	Project M&E reports	

	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
				of the GEF PIR	PMU and consultants		
Outcome 2: Enforced improved institutional and financial mechanisms in the integrated planning and implementation of rural electrification and RE-based energy production in the off-grid areas	No. of formulated and recommended institutional and financing mechanisms that support the enhanced implementation of rural electrification initiatives	Terms of reference, operations and organizational procedures regarding the institutional and financing mechanisms adopted	Reporting to ED/MMERE MECDM, and SEIA	Annually; Reported in DO tab of the GEF PIR	ED/MMERE, MECDM, SEIA, PMU	Project M&E reports	Political stability of the country is sustained
	No. of rural electrification initiatives facilitated by adopted and enforced institutional and financial mechanisms	Electrification plans making use of the adopted mechanisms; Listing of operational financing schemes	Reporting to ED/MMERE and SEIA	Annually; Reported in DO tab of the GEF PIR	ED/MMERE, MECDM, SEIA, PMU		
Outcome 3.1: Adoption and implementation of climate resilient and low carbon electricity applications in increasing access to	No. of planned and implemented rural electrification projects in both on-, and off-grid areas that are based on the findings are recommendations of conducted DREI[37]	Using the DREI methodology	Reporting to ED/MMERE MECDM, and SEIA	Annually; Reported in DO tab of the GEF PIR	ED/MMERE, MECDM, SEIA, PMU	Project M&E reports	*As above*

[37] UNDP's flagship Derisking Renewable Energy Investment (DREI) methodology will be used to quantitatively analyze the barriers and risks for sustainable off-grid RE-based power generation options in the Solomon Islands.

	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
electricity in off-grid areas.	assessments of RE-based electricity generation options with rationalized costing of delivered and installed RE equipment in off-grid areas						
	No. of follow-up rural electrification, sustainable energy and low carbon technology application projects (demo replications and scale-ups) in on-, and off-grid areas.	Feasibility studies and financial packaging have been reviewed and endorsed for implementation	Reporting to ED/MMERE and SEIA	Annually; Reported in DO tab of the GEF PIR	Stakeholders, Project implementors, ED/MMERE, MECDM, SEIA, PMU	Project M&E reports	
Outcome 3.2: Increased confidence in, and application of, RE technologies and RE-based power generation to support socio-economic	No. of successfully installed and operational systems of the implemented demonstrations of RE-based electricity generation and low carbon technology application in the off-grid area	Listing of RE projects annually reporting on operating experience, technical and financial aspects of the business operation	Reporting to ED/MMERE MECDM, and SEIA	Annually; Reported in DO tab of the GEF PIR			Acceptance of community of RE/EE application

	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
development in off-grid areas.	No. of RE and EE technologies application projects designed and financed for implementation as influenced by the results and outcomes of the demonstrations	Feasibility studies and financial planning based on the experience in the pilot demos	Reporting to ED/MMERE MECDM, and SEIA				
Outcome 4: **Enhanced awareness and knowledge of the government, private sector and communities on the cost-effective application of RE and EE technologies/practices**	No. of trained national and local government personnel that can ably plan and evaluate energy access, sustainable energy and low carbon technology application projects		Reporting to ED/MMERE and SEIA	Annually; Reported in DO tab of the GEF PIR	Ministry of education, Local governments, ED/MMERE, MECDM, SEIA, PMU	Project M&E reports	Financing institutions will continuously support RE/EE projects
	No. of local firms that can capably provide technical, engineering and maintenance services for rural electrification and low carbon technology application projects.		Reporting to ED/MMERE MECDM, and SEIA	Annually; Reported in DO tab of the GEF PIR	Relevant ministries, ED/MMERE, MECDM, SEIA, PMU	Project M&E reports	
	Number of persons made aware on national	Amount of government budget	Reporting to ED/MPUI and TEC	Annually; Reported in DO tab	Dept. of Finance, Banks,	Project M&E reports	Regional oil prices will be at levels that

	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
	promotional program for RE and EE targeting relevant SIG personnel, private entities, schools and offices	authorized and spent on RE projects		of the GEF PIR	ED/MMERE, SEIA, PMU		make RE/EE still competitive and cost-effective
Mid-term GEF Tracking Tool (if FSP project only)			Standard GEF Tracking Tool available at www.thegef.org Baseline GEF Tracking Tool included in Annex.	After 2nd PIR submitted to GEF	Project consultant	Completed GEF Tracking Tool	
Terminal GEF Tracking Tool			Standard GEF Tracking Tool available at www.thegef.org Baseline GEF Tracking Tool included in Annex.	After final PIR submitted to GEF	Project consultant	Completed GEF Tracking Tool	
Mid-term Review (if FSP project only)			To be outlined in MTR inception report	Submitted to GEF same year as 3rd PIR	Independent evaluator	Completed MTR	
Environmental and Social risks and management plans, as relevant.			Updated SESP and management plans	Annually	Project Manager UNDP CO SOI	Updated SESP	

Table B.2. SPIRES Evaluation Plan

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Budget for consultants[38]	Other budget (i.e., travel, site visits, etc.)	Budget for translation
Mid-Term Review	*April 2022*	*July 2022*	*Yes*	*USD 21,500*	*USD 10,000*	
Terminal Evaluation	*January 2024*	*March 2024*	*Yes*	*USD 21,500*	*USD 10,000*	
			Total Evaluation Budget	USD 63,000		

[38] The budget will vary depending on the number of consultants required (for full size projects should be two consultants); the number of project sites to be visited; and other travel related costs. Average # total working days per consultant not including travel is between 22-25 working days.

Annex C: Overview of Technical Consultancies/Subcontracts

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management		
Local / National Contracting: to provide input as per organogram		
Project Manager	208 weeks over 4 years	• The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. He will develop annual work plans based on the multi-year work plan to support the efficient implementation of the project according to UNDP and GEF management and M&E standards, in co-operation with the MMERE and other stakeholders.
Project Procurement Officer	52 weeks over 4 years (co-shared)	• The Project Implementation and M&E Officer, under the direction of the Project Manager, will be involved full-time with the project. Part of this work (about one-quarter) will be project management, while the other part will be national expert roles spread across the various project outcomes. Annex 4 includes the preliminary TOR for the Project Implementation and M&E Officer. Summaries of national expert roles, some of which will be taken up by the Project Implementation and M&E Officer as will be determined at inception, are given below by outcome.
Project Assistant	208 weeks over 4 years	• The Project Finance and Administrative Officer, under the direction of the Project Manager, will be involved full-time with the project. All this officer's role will be project management in function. Annex 4 includes the preliminary TOR for the Project Finance and Administrative Officer.
For Technical Assistance		
Outcome 1		
Local / National Contracting		
National Project Engineer	52 weeks / over 4 years	• Collaborate with the Chief Technical Advisor to implement engineering plans at the various demonstration sites. He/she will be responsible for the technical delivery of project outputs and outcomes including liaison with demonstration sites, detail engineering assessments, design, and planning as well as supporting the supervision of contractors that will be engaged to construct the renewable energy applications in the various demonstration sites. • Collaborate with the CTA and PMU staff in contributing to policies pertaining to the energy and rural electrification sector in the Solomon Islands. • Ensure work outputs delivered by contractors are of high quality in compliance to national technical standards and work is completed within agreed timeframes.

Consultant	Time Input	Tasks, Inputs and Outputs
Communications, Monitoring & Evaluation Officer	208 weeks over 4 years	• The project will hire communications and monitoring & evaluation officer. This position is directly responsible for the communications aspects of the project, to improve its visibility in the Solomon Islands, Pacific region and the globe. • He/she is also responsible to carry out periodic monitoring of project indicators, targets, outputs, activities and outcomes under the guidance of the project manager and UNDP Results-based management team with the UNDP Solomon Islands office. On the communications aspects, she/he is expected to liaise with communications team within UNDP, both within the Solomon Islands and the region and is expected to work with other projects that are operating in parallel to SPIRES as well as the media. This position reports directly to the project manager. • The role of this position is to communicate project activities, outputs and outcomes using proven communication mean to increase the visibility of the project and at the same time implement the project's monitoring and evaluation plan and execution and the implementation of the SPIRES knowledge management plan. • Draft the projects communication strategy in alignment with the projects pre-developed Knowledge Management Strategy; • Collaborate with UNDP and SIG communications team to identify the most suitable communications tools for the project and management of these communications tools to improve projects visibility; • Prepares communications materials for the projects; • Ensures strong and continuous relations/contacts with journalists and the media in maintaining the promotion of SPIRES to the greater public; • Create and coordinate with vendors including design, print houses and production houses etc.; • Design and implement a system to identify, analyze document and disseminate lessons learned derived from the project's activities; • Contribute to communications activities to the annual work plan; • Contributed to project's capacity building training in communities for renewable energy and efficiency prospects amongst project proponents at the provincial government and demonstration sites. • Maintain the projects monitoring and evaluation plan, focusing on the projects log frames and indicators in coordination with UNDP results-based management team; • Preparation of M & E budget, and a schedule for M & E activities; • Implementation of M & E activities included in the annual work plan and the project document; • Contribute to writing project reports including UNDP and GEF progress reports, quarterly and annual reports;

Consultant	Time Input	Tasks, Inputs and Outputs
Provincial Officers (2)		• Closely liaise with demonstration sites communities and school institutions. • Close liaison with the provincial governments and communities of the site demonstrations in collaboration with the project management unit; • Assist the community engagement officer in liaising with provincial governments and communities for land acquisition during the design of RE installations; • Assist in the supervisions of contractors in the clearing of land and civil works during construction of RE installations in the demonstration sites; • Will work closely with the school and community institutions in the establishment of institutional and financing mechanisms to maintain the RE systems that will be installed; • Work with project management unit in managing the site demonstration budgets, work plans and contribute to timely technical reporting of the progress of activities in the demonstration sites.
International / Regional and Global Contracting		
Chief Technical Advisor	28 weeks over 1.5 years	• The CTA will provide the strategic and technical support needed for the implementation of the project. He/She will report directly to the project board and the UNDP Country Manager and National Project Director and support the project manager in the daily operation of the project. The CTA will provide capacity building to the project manager and project staff including the national project engineer. An engineering background, in electrical, mechanical and civil calibers that have experience in the planning, design and installations of renewable energy technologies is a requirement to fulfill this role and must possess extensive project management experience, capacity development skills in skills and knowledge transfer. • Provide technical support to the project manager during board meetings and technical working group discussions; • Provide technical advice and support in the implementation of project components particularly components 2 and 3 in the design and engineering; and establishment of institutional and financing mechanisms to sustain operations and maintenance of the RE applications to be installed in the demonstration sites; • Promote public awareness of renewable energy and energy efficiency and its co benefits or multiple benefits; • Support the capacity building in terms of basic technical knowledge required by the project management unit for implementation of project outputs and activities; • Preparation of technical feasibility studies and evaluation studies relating to the project's four components; • Support the negotiations in terms of providing technical information required for the successful initiation of project implementation activities in the demonstration sites;

Consultant	Time Input	Tasks, Inputs and Outputs
		• Provide evaluation studies of institutional and financial mechanisms and suggested recommendations for the appropriate strategy; and pilot and implement institutional and financing mechanism models in the project demonstration sites; • Forge strategic relationships with the private sector in terms of creating a RESCO for sustainability of project outputs such as RE installation in the demonstration sites; • Participate in the preparation of project reviews when required and provide technical support;
Outcome 2		
Local / National Contracting		
National Project Engineer	65 weeks over 4 years	• In collaboration with the CTA supporting the technical assessments related to establishment of institutional and financial mechanisms such as a RESCO in the demonstration sites.
International / Regional and Global Contracting		
Chief Technical Advisor	28.2 weeks over 1.5 years	• The C TA will provide the strategic and technical support needed for the implementation of the project. He/She will report directly to the project board and the UNDP Country Manager and National Project Director and support the project manager in the daily operation of the project. The CTA will provide capacity building to the project manager and project staff including the national project engineer. An engineering background, in electrical, mechanical and civil calibers that have experience in the planning, design and installations of renewable energy technologies is a requirement to fulfill this role and must possess extensive project management experience, capacity development skills in skills and knowledge transfer. • Provide technical support to the project manager during board meetings and technical working group discussions; • Provide technical advice and support in the implementation of project components particularly components 2 and 3 in the design and engineering; and establishment of institutional and financing mechanisms to sustain operations and maintenance of the RE applications to be installed in the demonstration sites; • Promote public awareness of renewable energy and energy efficiency and its co benefits or multiple benefits; • Support the capacity building in terms of basic technical knowledge required by the project management unit for implementation of project outputs and activities; • Preparation of technical feasibility studies and evaluation studies relating to the project's four components; • Support the negotiations in terms of providing technical information required for the successful initiation of project implementation activities in the demonstration sites;

Consultant	Time Input	Tasks, Inputs and Outputs
		• Provide evaluation studies of institutional and financial mechanisms and suggested recommendations for the appropriate strategy; and pilot and implement institutional and financing mechanism models in the project demonstration sites; • Forge strategic relationships with the private sector in terms of creating a RESCO for sustainability of project outputs such as RE installation in the demonstration sites; • Participate in the preparation of project reviews when required and provide technical support;
Outcome 3.1		
Local / National Contracting		
National Project Engineer	34.7 weeks over 4 years	• Together with the CTA will be conduct the relevant technical assessment in the design and planning of relevant RE power generation in the targeted sites of Hunanawa Community, Waimapuru and Pamua educational institutions.
Community Engagement Officer	34.6 weeks over 4 Years	• The key responsibility of this officer is to liaise with site demonstration communities and institutions and provincial governments during the planning stages of the project so that feasible agreements and mutual understandings occur between communities, schools and PMU and local area implementing partners communities and institutions. This role is key to facilitating good faith and building trust with provincial governments and potential demonstration sites institutions. The community engagement officer is responsible for supervising the two provincial officers to be based in the provincial centers where the demonstration sites will be located. And this role will report directly to the project manager. • The CEO overall responsibility is to liaise with communities and school institutions to ensure proponents and partners and stakeholders maintain an interest in the project; the aim is to build community rapport and trust towards the project and provide detailed and participatory consultations with provincial governments, communities and schools that SPIRES will be targeting. The salary for this position is SB4 according to UNDP pay structure. • Conduct participatory and detailed consultations with community leaders, groups, schools; This should be led on from the consultations undertaken during SPIRES PPG phase; • Responsible for developing a community engagement plan for the project in accordance with the SPIRES engagement plan and SPIRES Environmental Screening and Management Plan; • Must liaise with communities to get a consent from committee members before construction of RE technologies will take place to ensure security and continuity of projects intervention in; • Assist the community to resolve issues relating to land etc. that will cause a hindrance to the installation of RE technologies in the community and school;

Consultant	Time Input	Tasks, Inputs and Outputs
		• Work with utility committees and school boards to plan and design an institutional and financial mechanism that fit-for-purpose in their context to aid the RE technologies that will be installed; • Must liaise with SIG agencies, donor or other stakeholders in addressing of challenges or key issues including land issues at targeted the community and schools
International / Regional and Global Contracting		
International Financial Analysis of RE Expert	28.2 weeks over 1.5 years	In close coordination with the National Financial Analysis of RE Expert, the International Financial Analysis of RE Expert will conduct relevant financial analysis of RE investments and systems and prepare materials to promote findings. Tasks will include: • Conduct analysis and prepare recommendations of how outer island RE mini-grids can achieve financial sustainability; prepare high level briefing and support outreach efforts • Conduct analysis of financial returns of commercial equity investment in outer island RE mini-grids; prepare high level briefing and lead outreach to potential international private sector investors • Utilize UNDP De-risking Renewable Energy Investment (DREI) tools to assess potential de-risking modes for investment in outer island RE mini-grids and SHSs; prepare de-risking report
Outcome 3.2		
Local / National Contracting		
National Project Engineer	29 weeks over 4 years	• In collaboration with the chief technical advisor will lead the implementation of power generation of solar and hydropower generation at the three demonstration sites. This will be supporting all activities relating to Outcome 3.2.
Community Engagement Officer	104 weeks over 4 years	• The key responsibility of this officer is to liaise with site demonstration communities and institutions and provincial governments during the planning stages of the project so that feasible agreements and mutual understandings occur between communities, schools and PMU and local area project partners, communities and institutions. This role is key to facilitating good faith and building trust with provincial governments and potential demonstration sites institutions. The community engagement officer is responsible for supervising the two provincial officers to be based in the provincial centers where the demonstration sites will be located. And this role will report directly to the project manager. • The CEO overall responsibility is to liaise with communities and school institutions to ensure proponents and partners and stakeholders maintain an interest in the project; the aim is to build community rapport and trust towards the project and provide detailed and participatory consultations with provincial governments, communities and schools that SPIRES will be targeting which will all feed also into lessons learned and knowledge generation. The salary for this position is SB4 according to UNDP pay structure.

Consultant	Time Input	Tasks, Inputs and Outputs
		• Conduct participatory and detailed consultations with community leaders, groups, schools; This should be led on from the consultations undertaken during SPIRES PPG phase; • Responsible for developing a community engagement plan for the project in accordance with the SPIRES engagement plan and SPIRES Environmental Screening and Management Plan ; • Must liaise with communities to get a consent from committee members before construction of RE technologies will take place to ensure security and continuity of projects intervention in; • Assist the community to resolve issues relating to land etc. that will cause a hindrance to the installation of RE technologies in the community and school; • Work with utility committees and school boards to plan and design an institutional and financial mechanism that fit-for-purpose in their context to aid the RE technologies that will be installed; • Must liaise with SIG agencies, donor or other stakeholders in addressing of challenges or key issues including land issues at targeted the community and schools
Provincial Officer (Malaita)	93 weeks over 4 years	• Two provincial officers will be recruited and will not be part of the project management unit in Honiara, however, will be based in the provincial government offices in the provinces. They play a multifunctional role including technical and administration through working with provincial governments, demonstration site committees, and technical officers recruited under SPIRES and energy officers from MMERE to implement the RE application systems in the targeted demonstration sites. They contribute to aid in liaising with demonstration site institutions in planning and installation of renewable energy application technologies; provide support in assessments relating to finding a fit-for purpose institutional & financial mechanism for sustainable financing of RE technologies that will be installed.
Project Manager	61 weeks over 4 years	• In close cooperation with EPU and the International Productive Use Business Plan Expert, the National Productive Use Business Plan Expert will assist local outer island residents and organizations in developing business plans for high potential productive uses at demo RE mini-grids, with emphasis on the coconut value chain, fish related applications, and agriculture related applications. Tasks will include: • Liaise with island councils of the demo mini-grid islands • Identify resources and interests of each demo island • Identify parties that may develop the productive uses • Conduct site visits and follow up liaison (email, phone, etc.) to assist these parties in developing simple business plans with investment requirements, market channels, and projected revenues and profits
International / Regional and Global Contracting		

Consultant	Time Input	Tasks, Inputs and Outputs
Technical Advisor	23.5 weeks over 1.5 Years	• The Technical Advisor will provide the strategic and technical support needed for the implementation of the project. He/She will report directly to the project board and the UNDP Country Manager and National Project Director and support the project manager in the daily operation of the project. He/She will provide capacity building to the project manager and project staff including the national project engineer. An engineering background, in electrical, mechanical and civil calibers that have experience in the planning, design and installations of renewable energy technologies is a requirement to fulfill this role and must possess extensive project management experience, capacity development skills in skills and knowledge transfer. Provide technical support to the project manager during board meetings and technical working group discussions; • Provide technical advice and support in the implementation of project components particularly components 2 and 3 in the design and engineering; and establishment of institutional and financing mechanisms to sustain operations and maintenance of the RE applications to be installed in the demonstration sites; • Promote public awareness of renewable energy and energy efficiency and its co benefits or multiple benefits; • Support the capacity building in terms of basic technical knowledge required by the project management unit for implementation of project outputs and activities; • Preparation of technical feasibility studies and evaluation studies relating to the project's four components; • Support the negotiations in terms of providing technical information required for the successful initiation of project implementation activities in the demonstration sites; • Provide evaluation studies of institutional and financial mechanisms and suggested recommendations for the appropriate strategy; and pilot and implement institutional and financing mechanism models in the project demonstration sites; • Forge strategic relationships with the private sector in terms of creating a RESCO for sustainability of project outputs such as RE installation in the demonstration sites; • Participate in the preparation of project reviews when required and provide technical support;
Outcome 4		
Local / National Contracting		
Communications and M & E Officer	208 weeks over 4 years	• The Communications and M & E is directly responsible for the communications aspects of the project, to improve its visibility in the Solomon Islands, Pacific region and the globe. He/she is also responsible to carry out periodic monitoring of project indicators, targets, outputs, activities and outcomes under the guidance of the project manager and UNDP Results-based management team with the UNDP Solomon Islands office. On the communications aspects, she/he is expected to liaise with communications team within UNDP, both within the Solomon Islands and the region and is expected to work with other projects that are operating in parallel to SPIRES as well as the media. This position reports directly to the project manager.

Consultant	Time Input	Tasks, Inputs and Outputs
		• The role of this position is to communicate project activities, outputs and outcomes using proven communication mean to increase the visibility of the project and at the same time implement the project's monitoring and evaluation plan and execution and the implementation of the SPIRES knowledge management plan. • Draft the projects communication strategy in alignment with the projects pre-developed Knowledge Management Strategy; • Collaborate with UNDP and SIG communications team to identify the most suitable communications tools for the project and management of these communications tools to improve projects visibility; • Prepares communications materials for the projects; • Ensures strong and continuous relations/contacts with journalists and the media in maintaining the promotion of SPIRES to the greater public; • Create and coordinate with vendors including design, print houses and production houses etc.; • Design and implement a system to identify, analyze document and disseminate lessons learned derived from the project's activities; • Contribute to communications activities to the annual work plan; • Contributed to project's capacity building training in communities for renewable energy and efficiency prospects amongst project proponents at the provincial government and demonstration sites. • This role is also responsible or the monitoring and evaluation of the project including • Maintain the projects monitoring and evaluation plan, focusing on the projects log frames and indicators in coordination with UNDP results-based management team; Preparation of M & E budget, and a schedule for M & E activities; Implementation of M & E activities included in the annual work plan and the project document; • Contribute to writing project reports including UNDP and GEF progress reports, quarterly and annual reports;
Provincial Officers (Malaita and Makira Provinces)	138 weeks over 4 years	• Two provincial officers will be recruited and will not be part of the project management unit in Honiara, however, will be based in the provincial government offices in the provinces. They play a multifunctional role including technical and administration through working with provincial governments, demonstration site committees, and technical officers recruited under SPIRES and energy officers from MMERE to implement the RE application systems in the targeted demonstration sites. They contribute to aid in liaising with demonstration site institutions in planning and installation of renewable energy application technologies; provide support in assessments relating to finding a fit-for purpose institutional & financial mechanism for sustainable financing of RE technologies that will be installed.
Project Manager	156 weeks over 4 years	• Overall: The project manager will be nationally recruitment, and will be entirely responsible for Stimulating Progress towards Rural Electrification in Solomons Project's planning, implementing, timely delivery and

Consultant	Time Input	Tasks, Inputs and Outputs
		reporting of outputs and outcomes according to quality and standards as set out in UNDP procedures, processes • and policies. He/She will also provide supervision of the project management unit and will take a leading role in coordination with key partners and beneficiaries. The salary scale will be SB5 according to UNDP salary scale. • Reporting: This position requires direct reporting to the project director, project board, technical working group, key beneficiaries as well as other stakeholders where it deems necessary. He/ She has daily liaison with UNDP Resilient Sustainable Development Programme team, GEF secretariat as well as other country based and regional partners, to coordinate and discuss on the projects annual work plans and to report on activities, outputs and outcomes in a high quality and timely manner. • Liaison: The project manager will liaise with other project managers and coordinators that are leading, managing and coordinating other related projects and will be from time to time liaise with other donor projects and partners including EU/GIZ, DFAT, World Bank, ADB, SPC ,other donor agencies and academic and research institutions in the country or abroad. • Project management & technical reporting Responsibilities: This position is required for the technical, planning, management, monitoring, progress and financial reporting of SPIRES. He/She will closely liaise with UNDP Solomon Islands country manager, project director, director Energy Division, Ministry of Mines, Energy and Rural Electrification, and in close consultation with other UNDP offices. • The specific roles and responsibilities of the project manager are outlined below: • Lead the SPIRES project management unit, to be housed within MMERE, and supervised and manage the projects human resources and budgets for timely deliverable of activities, outputs and outcomes; • Will be responsible for the daily planning, management, implementation of SPIRES activities and outputs; • Lead the implementation of technical outputs, plans and financial reporting in accordance to UNDP processes and procedures; • Supervise all activities in relation to installation of RE technologies in the demonstration sites; this will be done in collaboration with the Chief Technical Advisor within Year 1 to Year 1.5 of the project, and will assume full responsibility when the contracts of the CTA ceases; • Assume responsibility in preparation of the following; annual work plans, work programs and guide the communications & M& E officer in preparing monitoring & evaluation programs, as well as the financial procedures. This will be in close collaboration with the project board, project director and UNDP. • Assume coordination and monitoring of activities stipulated in the annual work plans and reports to the project board. Before reports are presented to the board, this should be shared with the technical working group, to provide that additional layer of quality assurance of information/data. So that information/data

Consultant	Time Input	Tasks, Inputs and Outputs
		presented to the project board are accurate and of high quality for effective decision making at the project board level. Network with other projects and donors that are implementing renewable energy and energy efficiency, climate change mitigation related projects and initiatives in the Solomon Islands and at the regional levels; • Provide fair and equitable judgement in resolving issues between staff and communities in the demonstration sites; • Preparation of terms of reference for staff, consultants and managing contractors and seeing this is developed and reflected in the human resources recruitments for the project; and additionally, providing supervision for consultants and contractors to ensure timely deliverables of outputs and activities according to planned schedule; • Lead the project's management strategy and provide information dissemination between donors and other parallel projects and in country partners; • Represent the project in national consultations, international fora whenever possible; • Support the training and delivery of course for project staff as well as key government partner staff and demonstration site community and school staff; • Participate and prepare project reviews when required; and • Facilitate sourcing of funding for project-initiated activities and aim for sustainability of this activities. This will include, assisting the government and demonstration site communities and schools in adsorption of projects RE installations and RE institutional and financing mechanism that will be established during the project implementation phase.
National Evaluation Expert	8 weeks in 4 years	• A national evaluation expert will be hired to assist an international evaluation expert to conduct a midterm and a terminal evaluation for the project.
International/ Regional Contracting		
Chief Technical Advisor	29.2 weeks over 1.5 Years	• The CTA will provide the strategic and technical support needed for the implementation of the project. He/She will report directly to the project board and the UNDP Country Manager and National Project Director and support the project manager in the daily operation of the project. The CTA will provide capacity building to the project manager and project staff including the national project engineer. An engineering background, in electrical, mechanical and civil calibers that have experience in the planning, design and installations of renewable energy technologies is a requirement to fulfill this role and must possess extensive project management experience, capacity development skills in skills and knowledge transfer.

Consultant	Time Input	Tasks, Inputs and Outputs
		• Provide technical support to the project manager during board meetings and technical working group discussions; • Provide technical advice and support in the implementation of project components particularly components 2 and 3 in the design and engineering; and establishment of institutional and financing mechanisms to sustain operations and maintenance of the RE applications to be installed in the demonstration sites; • Promote public awareness of renewable energy and energy efficiency and its co benefits or multiple benefits; • Support the capacity building in terms of basic technical knowledge required by the project management unit for implementation of project outputs and activities; • Preparation of technical feasibility studies and evaluation studies relating to the project's four components; • Support the negotiations in terms of providing technical information required for the successful initiation of project implementation activities in the demonstration sites; • Provide evaluation studies of institutional and financial mechanisms and suggested recommendations for the appropriate strategy; and pilot and implement institutional and financing mechanism models in the project demonstration sites; • Forge strategic relationships with the private sector in terms of creating a RESCO for sustainability of project outputs such as RE installation in the demonstration sites; • Participate in the preparation of project reviews when required and provide technical support;
International Evaluation Expert	8 weeks over 4 years	• An international evaluation expert will be hired to conduct and lead an independent mid-term and terminal evaluation of the project

Annex D: GEF Core Indicators at CEO ER

Core Indicator 6: Greenhouse gas emissions mitigated (metric tons of carbon dioxide equivalent)

GHG emission type	MT CO_2-eq (at PIF) *	MT CO_2-eq (at CEO ER)	MT CO_2-eq (at MTR)	MT CO_2-eq (at TE)
Lifetime direct project GHG emissions mitigated	*See Note below**	123,510		
Lifetime direct post-project emissions mitigated	*See Note below**	53,579		
Lifetime indirect GHG emissions mitigated	*See Note below**	354,177		

*Per GEF-approved SPIRES PIF: Ave. Annual GHG Emission Reduction (2019-2022) = 8,002.1 tons CO2; Ave. Annual GHG Emission Reduction (2019-2032) = 11,490.8 tons CO2; Cumulative GHG Emission Reduction (2019-2032) = 346.8 ktons CO2; and, Cumulative GHG Emission Reduction (2019-2038) = 508.9 ktons CO2.

6.1 Carbon sequestered or emissions avoided in the sector of Agriculture, Forestry and Other Land Use

GHG emission type	Ha (at PIF)	MT CO_2-eq (at PIF)	Ha (at CEO ER)	MT CO_2-eq (at CEO ER)	Ha (at MTR)	MT CO_2-eq (at MTR)	Ha (at TE)	MT CO_2-eq (at TE)
Lifetime direct project GHG emissions mitigated	0	0	0	0				
Lifetime direct post-project emissions mitigated	0	0	0	0				
Lifetime indirect GHG emissions mitigated	0	0	0	0				
Anticipated year	---	NA	---	NA	---		---	

6.2 Emissions avoided

GHG emission type	MT CO_2-eq (at PIF) *	MT CO_2-eq (at CEO ER)	MT CO_2-eq (at MTR)	MT CO_2-eq (at TE)
Lifetime direct project GHG emissions mitigated	*See Note below**	123,510		

Lifetime direct post-project emissions mitigated	*See Note below**	53,579		
Lifetime indirect GHG emissions mitigated	*See Note below**	354,177		
Anticipated year		2021		

*Per GEF-approved SPIRES PIF: Ave. Annual GHG Emission Reduction (2019-2022) = 8,002.1 tons CO2; Ave. Annual GHG Emission Reduction (2019-2032) = 11,490.8 tons CO2; Cumulative GHG Emission Reduction (2019-2032) = 346.8 ktons CO2; and, Cumulative GHG Emission Reduction (2019-2038) = 508.9 ktons CO2.

6.3 Energy saved (megajoules)

Type of Intervention	MJ (at PIF)	MJ (at CEO ER)	MJ (at MTR)	MJ (at TE)
Displacement of diesel-based power generation with RE-based power generation units	684,200,000*	By EOP: 87.7 million		

*Per GEF-approved SPIRES PIF: Ave. Annual RE-based Power Generation (2019-2022) = 10,180.8 MWh; Ave. Annual RE-based Power Generation (2019-2032) 14,619.4 MWh.

6.4 Increase in installed renewable energy capacity per technology (megawatts)

Type of Renewable Energy Technology	MW (at PIF)	MW (at CEO ER)	MW (at MTR)	MW (at TE)
Solar	15.23*	15.993		
Microhydro	0	0.708		
Total (direct & indirect)		16.701		

*Per GEF-approved SPIRES PIF: Ave. Annual RE-based Power Generation (2019-2022) = 10,180.8 MWh; Ave. Annual RE-based Power Generation (2019-2032) 14,619.4 MWh. This assumes only solar PV systems as the RE-based power generation systems installed.

Core Indicator 11: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Total number (at PIF)	Total number (at CEO ER)	Total number (at MTR)	Total number (at TE)
Women		Direct by EOP: 2,000		
Men		Direct by EOP: 2,000		
Total		Direct by EOP: 4,000		

Annex E. Terms of Reference

This section presents the terms of reference (TORs) for the key personnel positions for the management of the project implementation. These are the TORs for the project management office (PMU) personnel, the National Project Manager (NPM), Chief Technical Adviser (CTA), and the Project Board.

During the inception phase of the project, the PMU will validate the TORs for the key personnel requirements for the implementation of the various activities in each of the components of the SPIRES Project. These are TORs for consultants/experts/specialists, whose services will be engaged in the implementation of the activities in each project component.

Project Board: SPIRES will be governed by a project board. This board will comprise of UNDP, MMERE, MECDM, MDPAC and other pertinent partner SIG ministries. Senior government officers at levels of permanent secretaries, undersecretaries and UNDP Country Manager will be represented in the board. This Board is specifically established by the project to provide management oversight of project activities and is to be chaired by MMERE. The Board will review progress and evaluation reports, and approve programmatic modifications to project execution, as appropriate and in accordance with GEF/UNDP procedures. Policy recommendations will be discussed and recommended for consideration by the Cabinet of Ministers and Parliament. The Board will be chaired by the National Project Director (see paragraph 19). In addition to the MMERE government membership of the Project Board will include the Ministry of Environment, Climate Change, Disaster Management and Meteorology, Ministry of Development Planning and Aid Coordination and Ministry of Education and Human Resource Development, as well as representatives from the line ministries responsible and their respective state agencies. Non-state stakeholders will also be represented on the Project Board if need be as observers, namely from the private sector, academic and research institutions, NGOs, and CSOs. The Project Board will meet four (4) times per year or as and when required.

The Project Board will have the following responsibilities:

- Ensure project is coherently organized at the national, provincial and demonstration site levels and project implementation and management policies are in place
- Establish tolerances in annual work plans, and other plans as needed with the project manager engaged in the process when necessary
- Monitor the progress of project activities and will consider changes influenced by the project baselines investments from a strategic perspective
- Ensure that the risk log is being monitored and adhered to by the project management unit
- Advise and organize project board meetings on a quarterly basis or whenever the need arises and should be in collaboration with the project manager with the UNDP SOI Resident Representative acting as chair of the meetings
- Assess whether the project is meeting its objectives, outputs and outcomes
- Ensure that resources are readily available from the project development partner for timely implementation
- Intervene and provide guidance to resolve development partner conflicts that may arise;
- Ensure that expected project outputs and its activities will be consistently delivered to beneficiaries' expectations;
- Facilitate national policy and institutional changes needed to make way for success in the project activities;
- Review project progress on an annual basis and provide recommendations on the appropriate financial and management directions for the project to take. This will involve recruitment of project management unit and its provincial based officers, review annual work plans, budgets and reports;

- Provide approval of annual work plans, budgets and reports and seek justification from the project management unit if there be changes to the annual work plan, budget and reports.

Project Management Unit

The project partner MMERE will establish a Project Management Unit (PMU) for the day-to-day management of project activities and subcontract specific components of the project to specialized government agencies, research institutions, as well as qualified NGOs and the private sector.

This PMU will provide administrative, technical, management and coordination roles in collaboration with MMERE, MECDM, and other partner SIG ministries (for demonstrations), provincial officers and provincial government institutions. The PMU will be using UNDP, rules and policies to guide management and administration of the project. PMU staff will be trained on the use of UNDP procedures and policies so that they effectively may effectively execute their roles and responsibilities.

Project Manager (PM)

A project manager will head the project management unit and should be recruited from the Solomon Islands. She/he has the key responsibility to operate the PMU on a day to day basis, on behalf of the project board. A key role of the PM is ensuring results specified in the project document are achieved in a timely manner. The PM reports directly to the UNDP SOI Team Leader and manage and supervise five other PMU staff.

Overall: The project manager will be nationally recruitment and will be entirely responsible for Stimulating Progress towards Rural Electrification in Solomons Project's planning, implementing, timely delivery and reporting of outputs and outcomes according to quality and standards as set out in UNDP procedures, processes and policies. He/She will also provide supervision of the project management unit and will take a leading role in coordination with key partners and beneficiaries.

Reporting: This position requires direct reporting to the project director, project board, technical working group, key beneficiaries as well as other stakeholders where it deems necessary. He/ She has a daily liaison with UNDP Resilient Sustainable Development Programme team, GEF secretariat as well as other country-based and regional partners, to coordinate and discuss on the projects annual work plans and to report on activities, outputs and outcomes in a high quality and timely manner.

Liaison: The project manager will liaise with other project managers and coordinators that are leading, managing and coordinating other related projects and will be from time to time liaise with other donor projects and partners including EU/GIZ, DFAT, World Bank, ADB, SPC ,other donor agencies and academic and research institutions in the country or abroad.

Project management & technical reporting Responsibilities: This position is required for the technical, planning, management, monitoring, progress and financial reporting of SPIRES. He/She will closely liaise with UNDP Solomon Islands country manager, project director, director Energy Division, Ministry of Mines, Energy and Rural Electrification, and in close consultation with other UNDP offices.

Specific roles and responsibilities:

a) Lead the SPIRES project management unit, to be housed within MMERE, and supervised and manage the projects human resources and budgets for timely deliverable of activities, outputs and outcomes;
b) Will be responsible for the daily planning, management, implementation of SPIRES activities and outputs;

c) Lead the implementation of technical outputs, plans and financial reporting in accordance with UNDP processes and procedures;
d) Supervise all activities in relation to the installation of RE technologies in the demonstration sites; this will be done in collaboration with the Chief Technical Advisor within Year 1 to Year 1.5 of the project and will assume full responsibility when the contracts of the CTA ceases;
e) Assume responsibility in preparation of the following; annual work plans, work programs and guide the communications & M& E officer in preparing monitoring & evaluation programs, as well as the financial procedures. This will be in close collaboration with the Project Board and UNDP SOI.
f) Assume coordination and monitoring of activities stipulated in the annual work plans and reports to the project board. Before reports are presented to the board, this should be shared with the technical working group, to provide that additional layer of quality assurance of information/data. So that information/data presented to the project board are accurate and of high quality for effective decision making at the project board level. Network with other projects and donors that are implementing renewable energy and energy efficiency, climate change mitigation related projects and initiatives in the Solomon Islands and at the regional levels;
g) Provide fair and equitable judgment in resolving issues between staff and communities in the demonstration sites;
h) Preparation of terms of reference for staff, consultants and managing contractors and seeing this is developed and reflected in the human resources recruitments for the project, and additionally providing supervision for consultants and contractors to ensure timely deliverables of outputs and activities according to planned schedule;
i) Lead the project's management strategy and provide information dissemination between donors and other parallel projects and in country partners;
j) Represent the project in national consultations, international fora whenever possible;
k) Support the training and delivery of course for project staff as well as key government partner staff and demonstration site community and school staff;
l) Participate and prepare project reviews when required; and
m) Facilitate sourcing of funding for project-initiated activities and aim for sustainability of this activities. This will include, assisting the government and demonstration site communities and schools in adsorption of projects RE installations and RE institutional and financing mechanism that will be established during the project implementation phase.

Qualification (Education & Experience):

a) At least has acquired a master's degree or postgraduate degree level qualification in the fields of public administration, project management, development, economics, energy, electrical engineering, climate change or environmental management Must have at least more than five years of project management experience in managing energy , environmental or development projects with a similar setting;
b) Must possess diplomatic, negotiation skills and must be able to demonstrate leadership skills in leading a multicultural team;
c) Possess excellent communication skills including writing clear and excellent technical reports and writing of policy briefs targeted at policymakers and the broader civil society;
d) The candidate must have an excellent working knowledge of English, with familiarity in Melanesian context will be regarded as an asset;
e) Familiarity with goals and procedures of UNDP and GEF is an asset, as well as has knowledge of co-financing approaches, particularly GEFs;

f) Experience of aligning projects goals and objectives to wider development policy frameworks, both at the national level and international levels;
g) Have experience in monitoring and evaluation of technical projects, organizational strategy, policy development and change management. Experience with development of monitoring & evaluation frameworks will be an advantage.

Duty Station: Honiara

Project Technical Officers

1. ***Chief Technical Adviser (CTA)****:* The CTA is a part-time international consultant who will provide the strategic and technical support needed for the implementation of the project**.** He/She will report directly to the project board and the UNDP Country Manager and National Project Director and support the project manager in the daily operation of the project. The CTA will provide capacity building to the project manager and project staff including the national project engineer. An engineering background, in electrical, mechanical and civil calibers that have experience in the planning, design and installations of renewable energy technologies is a requirement to fulfill this role and must possess extensive project management experience, capacity development skills in skills and knowledge transfer.

   Overall: The CTA will be directly under the supervision of the Team Leader from UNDP SOI and will be reporting to the PMU in liaison with the Project Manager. The CTA will provide technical advice and assist in terms of capacity development of project staff on RE technologies as according to the project activities, outputs and activities. This will be in working closely with PMU staff, and project partners.

   Specific roles and responsibilities:
   a) Provide technical support to the project manager during board meetings and technical working group discussions;
   b) Provide technical advice and support in the implementation of project components particularly components 2 and 3 in the design and engineering; and establishment of institutional and financing mechanisms to sustain operations and maintenance of the RE applications to be installed in the demonstration sites;
   c) Promote public awareness of renewable energy and energy efficiency and its co benefits or multiple benefits;
   d) Support the capacity building in terms of basic technical knowledge required by the project management unit for implementation of project outputs and activities;
   e) Preparation of technical feasibility studies and evaluation studies relating to the project's four components;
   f) Support the negotiations in terms of providing technical information required for the successful initiation of project implementation activities in the demonstration sites;
   g) Provide evaluation studies of institutional and financial mechanisms and suggested recommendations for the appropriate strategy; and pilot and implement institutional and financing mechanism models in the project demonstration sites;
   h) Forge strategic relationships with the private sector in terms of creating a RESCO for sustainability of project outputs such as RE installation in the demonstration sites;
   i) Participate in the preparation of project reviews when required and provide technical support;

   Qualifications (Education and Experience):

a) The candidate will have a master's degree in electrical engineering or other related engineering advance degrees in the renewable energy sectors desirably solar power and hydropower;
b) More than 10 years of experience in the providing high level technical advice to governments of developing countries, more preferably the Asia Pacific region or similar development and small islands contexts;
c) Demonstrate experience in providing knowledge transfer and capacity building trainings and mentorship to subordinates and to colleagues; and have some experience in providing mentoring to national engineers as knowledge transfer;
d) Demonstrable excellent communications skills (verbal and written), at the technical level and preparation of information and policy makers and the broader public;
e) Previous experience with delivering technical projects at the multi country level, preferably GEF or related funded projects;
f) Must have excellent working Knowledge in English; and have a broad understanding of Melanesian languages would be an advantage;
g) Capability to manage contractors and proven ability to work as part of a team;

Duty Station: Honiara

2. ***National Project Engineer:*** A national project engineer, local senior consultant, will be required to implement the RE application technologies in the specific sites. He/she will be work with the CTA in the planning, design and installation in collaboration with project partners including MMERE, MECDM, MFMR, MHMS, MCILI and MEHRD. It is required that this position must be filled by a candidate with an engineering background.

   Overall: The key responsibility of the project engineer is to design and implement engineering plans at the various demonstration sites. He/she will be responsible for the technical delivery of project outputs and outcomes including liaison with demonstration sites, detail engineering assessments, design, and planning as well as supporting the supervision of contractors that will be engaged to construct the renewable energy applications in the various demonstration sites. This position reports to the CTA and the project manager.

   Specific roles and responsibilities:
   a) Work with the CTA in providing conducting the required technical assessments in the various demonstration sites;
   b) Contribute to the community engagement process of dealing with community and schools in the targeted sites;
   c) Will be responsible for the designing of RE applications with supervision form the chief technical advisor to produce high quality designs and plans for the project;
   d) Responsible for developing the terms of references for contractors to be engaged in the design and construction of the engineering aspects of the RE applications;
   e) Collaborate with the provincial officers to manage contractors during the construction stage of the RE installations;
   f) Together with the PMU, must provide an oversight to the tendering process of goods and services during for the implementation of the project; and ensure value for money is acquired in the providing support on the goods to be procured;
   g) Promote renewable energy and energy efficiency to the communities and schools in the targeted demonstration sites and provincial governments;
   h) Ensure work delivered by contractors are of high quality in compliance to national technical standards and work is completed within agreed timeframes.

Qualifications (Education and Experience):

a) Degree in electrical engineering or other related engineering degrees;
b) Have a minimum of three to five years working experience in the design and engineering of similar renewable energy application systems in Solomon Islands and the Asia Pacific region and the linking of this systems to socio-economic activities;
c) Have developed soft skills such as communicating and liaising with community people, or resource owners at the rural level;
d) Excellent skills in developing engineering designs and plans for RE technology;
e) Have demonstrated supervision skills including having experience in working with contractors in the design and installation of RE technologies;
f) Must be willing to travel to the provinces and rural areas and remain in the demonstration sites when and if required;
g) Must have the ability to provide attention to detail in providing oversight of civil and construction materials and equipment that will be delivered to the demonstration sites and be able to liaise with potential stakeholders to efficiently deliver activity on a timely basis in the demonstration sites.

Remuneration: The salary grade for this position will be at a range from SB5Peg 2 to SB5 Peg 3, equivalent to an annual gross remuneration of SB$182,850 to SB$213,700 to be based on experience and qualifications.

Duty Stations: Honiara

Project Officers:

- ***Finance /Administrative Officer:*** This position is required to administer the day to day operations of the project and is directly responsible for the financial management of the project under the guidance of the project manager. He/she is responsible for the project's travel, meeting logistics either in the country or abroad, and is additionally responsible to contribute to project deliverables, financial reports and annual work plans. This officer is expected to support procurement procedures & processes, which is inclusive of professional consultation services and equipment needed for the project's implementation. This position will report directly to the Project Manager.

  Overall: This position will directly report to the SPIRES project manager and provide the financial management and logistical support to the project management unit will be the ultimately covered under this role. He/She will work closely with other PMU members including the provincial officers and community committees and school boards and education authorities at the various demonstration sites. The salary for this role is SB3 according to the UNDP pay structure.

  Specific responsibilities:

  a) Assume responsibilities of coordinating and report on financial management of SPIRES activities. This will include assisting and collating financial information reporting to UNDP;
  b) Provide capacity building include financial management training to PMU staff and provincial officers and demonstration site committees and school boards;
  c) Is responsible for the formulation of the work plan and the successful implementation of this work plan focusing on financial management, and regular and timely financial monitoring and reporting as per UNDP financial procedures and processes;

d) Assist the project manager in the daily management of the SPIRES project, and organizational support for meetings and renewable energy or rural electrification fora that SPIRES may be co-hosting;
e) Provide logistical support to PMU staff and the provincial officers' travel, both internationally and within the Solomon Islands. This will also include travels of local committees and school boards that will travel for capacity development purposes or any other purposes related to SPIRES;
f) Supervise and support procurement procedures, which will include providing and development of terms of references for specifications and requisitions (technical requirements), financial requirements and procurement and selection of equipment, shipment and handling fees etc.;
g) Other related work as required by the PMU including the supervision of contractors, work of provincial officers; and community committees and school boards.

Qualification (Education and Experience):
a) The selected candidate should have a diploma or degree in accounting, financial management, economics or related disciplines.
b) He/she have proven three to five years' experience with project financial management and track record of donor projects or similar projects for at least five years;
c) He/she will have excellent communication skills both written and oral skills and is familiar with UNDP and GEF financial procedures and processes. Prior knowledge is an advantage.
d) Demonstrated experience in providing financial advice and support to a project team, including of financial training materials and providing financing training to project team;
e) Being Computer proficient and literate is a requirement;
f) Has demonstrable experience in working independently and under minimum supervision in meeting project deadlines;
g) Ability to work within a team and to meet project deadlines in a challenging, but rewarding environment;
h) Demonstrated financial management capacity

Duty Station: Honiara

- ***Procurement Officer:*** The role of the procurement officer is to the support the PMU in all its procurement needs. This will include the sourcing strategies, project assets management, supporting logistical arrangements and contributing to procurement knowledge sharing with UNDP and MMERE in compliance with UNDP procurement standards. This role reports directly to the project manager.

  Overall: The key responsibility of the procurement officer is to support the PMU in all procurement process and matters. This will include implementing sourcing strategies/approaches, assets control and management, assisting in logistical services of the PMU and to also provide knowledge sharing of procurement between UNDP, PMU and key partner government agencies including MMERE, MECDM and other partner SIG ministries. The salary for this position is at SB3 in accordance with the UNDP pay structure.

  Specific roles and responsibilities:
  a) Drafting of terms of references for technical and financial requirements for procurement of goods and services required under the SPIRES project;
  b) Is responsible for facilitating the bidding and tendering process for contractors to provide goods and services including equipment needed for the design and engineering of RE technologies in demonstration sites;

c) Facilitate the selection process including the creation and liaise with the panel for review and selection preferred suppliers;
d) Manages and control the assets of the project. This will include working with the UNDP operations team in tagging of project assets and establish a register of assets in alignment with UNDP procedures and processes;
e) Work with the PMU in identifying best procurement approaches for efficient service goods and service delivery of RE installations to enable timely delivery of activities, outputs and project outcomes.

Qualifications (Education and Experience):
a) Have a degree in finance, economics or related discipline.
b) Have five years working experience in procurement processes for donor or Solomon Islands government procurement services. Familiarity with SIG procurement system is essential;
c) Must be able to work in a team and can work independently to meet deadlines with limited supervision.

Duty Station: Honiara

- ***Community Engagement Officer:*** The key responsibility of this officer is to liaise with site demonstration communities and institutions and provincial governments during the planning stages of the project so that feasible agreements and mutual understandings occur between communities, schools and PMU and local area implementing communities and institutions. This role is key to facilitating good faith and building trust with provincial governments and potential demonstration sites institutions. The community engagement officer is responsible for supervising the two provincial officers to be based in the provincial centers where the demonstration sites will be located. And this role will report directly to the project manager.

  Overall: The CEO overall responsibility is to liaise with communities and school institutions to ensure proponents and partners and stakeholders maintain an interest in the project; the aim is to build community rapport and trust towards the project and provide detailed and participatory consultations with provincial governments, communities and schools that SPIRES will be targeting. The salary for this position is SB4 according to UNDP pay structure.

  Specific roles and responsibilities:
  a) Conduct participatory and detailed consultations with community leaders, groups, schools; This should be led on from the consultations undertaken during SPIRES PPG phase;
  b) Responsible for developing a community engagement plan for the project in accordance with the SPIRES engagement plan and SPIRES Environmental Screening and Management Plan;
  c) Must liaise with communities to get a consent from committee members before construction of RE technologies will take place to ensure security and continuity of projects intervention in;
  d) Assist the community to resolve issues relating to land etc. that will cause a hindrance to the installation of RE technologies in the community and school;
  e) Work with utility committees and school boards to plan and design an institutional and financial mechanism that fit-for-purpose in their context to aid the RE technologies that will be installed;

f) Must liaise with SIG agencies, donor or other stakeholders in addressing of challenges or key issues including land issues at targeted the community and schools

Qualification (Education and Experience):

a) Degree in sociology, development or geography or related discipline;
b) Must have at least three years of working experience in working with local communities in conducting participatory consultations and supporting community resolutions of rural communities or similar contexts;
c) Ability to mediate and communicate effectively with communities where some members maybe hostile in nature;
d) Must be able to work and travel during the weekends.

Duty Station: Honiara

- ***Communications and Monitoring & Evaluation Officer:*** The project will hire communications and monitoring & evaluation officer. This position is directly responsible for the communications aspects of the project, to improve its visibility in the Solomon Islands, Pacific region and the globe. He/she is also responsible to carry out periodic monitoring of project indicators, targets, outputs, activities and outcomes under the guidance of the project manager and UNDP Results-based management team with the UNDP Solomon Islands office. On the communications aspects, she/he is expected to liaise with communications team within UNDP, both within the Solomon Islands and the region and is expected to work with other projects that are operating in parallel to SPIRES as well as the media. This position reports directly to the project manager.

  Overall: The role of this position is to communicate project activities, outputs and outcomes using proven communication mean to increase the visibility of the project and at the same time implement the project's monitoring and evaluation plan and execution and the implementation of the SPIRES knowledge management plan.

  Specifics roles and responsibilities:

  a) Draft the projects communication strategy in alignment with the projects pre-developed Knowledge Management Strategy;
  b) Collaborate with UNDP and SIG communications team to identify the most suitable communications tools for the project and management of these communications tools to improve projects visibility;
  c) Prepares communications materials for the projects;
  d) Ensures strong and continuous relations/contacts with journalists and the media in maintaining the promotion of SPIRES to the greater public;
  e) Create and coordinate with vendors including design, print houses and production houses etc.;
  f) Design and implement a system to identify, analyze document and disseminate lessons learned derived from the project's activities;
  g) Contribute to communications activities to the annual work plan;
  h) Contributed to project's capacity building training in communities for renewable energy and efficiency prospects amongst project proponents at the provincial government and demonstration sites.

- ***Monitoring & Evaluation Officer:***
  a) Maintain the projects monitoring and evaluation plan, focusing on the projects log frames and indicators in coordination with UNDP results-based management team;

b) Preparation of M & E budget, and a schedule for M & E activities;
c) Implementation of M & E activities included in the annual work plan and the project document;
d) Contribute to writing project reports including UNDP and GEF progress reports, quarterly and annual reports;

Qualifications (Education and Experience):

a) The selected candidate will have a degree in communication, development or related field;
b) Must have three years of experience in the working development and promotion of communication and knowledge materials; and hopefully previous experience in communication and advocacy work;
c) He/she will have some experience in working with logical frameworks or project planning matrixes or conducting monitoring and evaluation of development projects; and data/information analysis;
d) Highly computer proficient and can contribute to and review technical reports;
e) Must be willing to travel to demonstration sites and must be willing to work as a team.

Duty Station: Honiara

Demonstration site committees: These will be formed under the SPIRES project to strengthen whatever local organizations are currently existing in the demonstration sites in order to facilitate the uptake of the roles of the local participants in the demo for energy services and their application in the socio-economic activities resulting from the access to energy through RE-based rural electrification. It is expected that PMU will work with this group to ensure local support for the installation, operation, maintenance and sustainable management of RE technologies and systems. This committee should guide project intervention to be tailored to the needs of their community people, as they are the ultimate beneficiaries of this project. Work with these groups supervised by the relevant institutions will be guided by the technical working group, especially in the development of institutional and financial mechanisms to sustaining operations and maintenance of the RE applications.

Technical Working Groups (TWGs): A working group is comprised of independent experts, technical government agency representatives (MID, MCILI, MOFT, MRD etc.), as well as representatives from stakeholder groups(NGOs, faith-based organizations, private sector- Solomon Power etc.) will discuss and deliberate on the various technical analyses as well. Initial stakeholders that are part of the SPIRES PPG may likely be members of this technical working group.

a) This will serve as an information source regarding country resources and data where the project can access to support project implementation;
b) Provide guidance and assistance in terms of governance, political, policy and institutional support that aides in the fast-tracking of project implementation, ensuring the project outcomes are appropriately raised for integration into national and provincial policy processes, programs and actions;
c) Provide technical advice to fast track the implementation of the project;
d) On an annual basis review the implementation of the project and provide appropriate recommendations for improved project implementation when required.

MMERE Energy Division Staff

a) The staff of the Energy Division will provide the technical support and supervision during the implementation of the project.
b) They will be supporting the national project engineer and the project technical specialist in supporting the design and engineering aspects of the project in installation of solar systems and hydropower systems in rural communities and schools.
c) They will also be supporting in the policy advocacy aspects for renewable energy and energy efficiency in rural areas; as well as supporting the assessment and provide appropriate recommendations for institutional and financial mechanism as part of the component 2-outcome 2 of the project.

Provincial Education Authority

a) In the case where the project will be implementing RE technology applications in schools, the provincial education authority or the education church authorities will be engaged to provide supervision assistance in the implementation of the project;
b) They also have the responsibility to report back to their provincial education divisions and the national education ministry on the progress and updates of the project and see how these relates to their education policies and practices, at the provincial and national levels.

Annex F. UNDP Social and Environmental Screening Template (SESP)

Solomon Islands: SPIRES Project - Social and Environmental Screening

Project Information

Project Information	
1. Project Title	Stimulating Progress towards Improved Rural Electrification in the Solomons (SPIRES)
2. Project Number	PIMS 6089
3. Location (Global/Region/Country)	Solomon Islands

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the Project mainstreams the human-rights based approach
The proposed GEF project is on the facilitation of the achievement of the rural electrification target of the country, as well as contributing to the %RE electricity target. It involves the application of low carbon (renewable energy and energy efficiency) technologies for increasing the percentage electricity access in rural areas of the country. Solomon Islands ratified International Human Rights Laws including the 'Convention to Eliminating Domestic Violence against Women (CEDAW) and 'Convention on the Rights of the Child'. In general terms, design and implementation of the project activities is in line with the principles of human rights-based approach which includes non-discrimination and equality, participation and exclusion and accountability. More specifically, the project mainstreamed human-rights based approach in the project design through the situational analysis process, justifying project actions based on human rights conventions and domestic laws, considering the role of right holders and duty bearers, identifying capacity gaps for right holders and duty bearers and engaging with vulnerable and marginalized groups during consultation. Relevant duty bearers (Implementing Partner and project partners) and right bearers (landowners, vulnerable and marginalized groups) were involved in the design and implementation of the project. The project development team has discussed with communities in potential sites any potential RE-based energy generation and EE technology applications that can be developed and implemented in their villages and have assessed their interest in such projects and potential productive applications in the use of RE. Full respect of the rights of local communities and according to UNDP Standard 7, an FPIC ("Free Prior Informed Consent") will be carried out and documented according to UNDP requirements at each demo site. This work will be a part of site specific environmental and social ("E/S") assessments that will be carried out for each of the demonstrations on RE-based energy generation that will be implemented under the project. Based on the agreement expressed by the communities in full community hearings/meetings during the project design period, more in-depth social assessments will be carried out during project implementation, and include, but not limited to, household by household consultations as well as separate men's and women's groups consultations within each relevant community. The project design will also underscore human rights by promoting livelihood improvement/ income generation via use of the new RE-based energy generation facilities or all relevant target groups including those that are potentially marginalized individuals and groups such as the women's groups, female-headed households, elderly men and women, youth and children.
Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment
The proposed GEF project will involve women working in both management and technical departments of MMERE and MECDM of the Solomon Islands government who can play important roles in the design, development and implementation in their capacity as Gender Focal Points. The project design will also include revision, assessment and enhancement of the role of women in deployment of low carbon technologies and mitigation options through the National Energy Policy, Energy Efficient Policy, Renewable Energy Policy and the Energy Investment Plan, thereby coming up with gender-sensitive policies in the energy sector and the energy end-use sectors of the country. At the community or village level, it will also

recognize the possible contributions of women in community leadership and decision making within local governance mechanisms such as the Community Utilities Committee (CUC), participation in consultations, promotion and raising awareness, repair and maintenance of solar photovoltaic systems and supporting sustainability of household/community energy production and use through a dedicated community-approved financial mechanism. The capacity building and training activities of the project will be designed to make possible participation from women. The activities on productive applications of RE will target benefits to flow to women-led entrepreneurship and sustainable livelihood. Full recognition of the important contributions of women in the management and implementation of such measures, and in the productive and social uses of electricity, the supply of which in villages is the design of this project. Furthermore, the design and preparation of this project will consider the contributions, impacts and benefits of community based sustainable energy and low carbon technology applications, including children, youth and traditional resource owners.
Briefly describe in the space below how the Project mainstreams environmental sustainability
This project will involve, among others, the establishment of the required enabling conditions (formulation of policies and investment plans) that will be supportive of actions that would contribute to increased rural electrification. This will ensure the sustainability of whatever policies/regulations, institutional and financial mechanisms to facilitate increased investments in RE-based power generation facilities in the off-grid areas of the country to contribute to the achievement of the country's rural electrification and %RE electricity targets. Since the project is linked and is complementing and supplementing the national development strategy, rural electrification and RE and EE investment plans and the NDCs of the country over the long term is sustained. The project is geared towards supporting RE-based energy systems as among the key elements for the satisfactory achievement of the energy, environment and development agenda of the country. These interventions will be subjected to the legal environmental impact assessment of the country for proper evaluation of the potential impacts to the natural environment and should develop an environment management plan for any potential medium to high risk impacts identified. In that regard, the ED/MMERE and the project partners that will be involved in the demonstrations will submit a development proposal to ECD/MECDM on the siting, design, development and implementation of the demo projects that will be carried out directly by the project, and coordinate also the replications that are expected to follow towards the end of project implementation and during the influence period to acquire development consent. This may involve, for projects such as micro/mini-hydropower facilities, the conduct of environmental impact assessments. More detailed social and environmental impact assessment will be conducted for each sustainable energy and low carbon technology application project that will be implemented and facilitated by the project following the requirements for investments by the Government of Solomon Islands.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses). If no risks have been identified in Attachment 1 then note "No Risks Identified" and skip to Question 4 and Select "Low Risk". Questions 5 and 6 not required for Low Risk Projects.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***

Likelihood that the project would have adverse impacts on gender equality and/or the situation of women and girls.	P= 1 I= 2	Low	To be promoted through the project are the following: (1) Increased opportunities for women to gains access to technical knowledge of low carbon energy systems and about the operation and maintenance of such systems; and, (2) Reduced gender inequality and enhancement of women's empowerment in rural livelihood activities such as sewing, baking, storage and processing of fisheries products and financial literacy. All demo/pilot activities of the project will be designed to ensure gender equity in technology selection, distribution of energy apparatus, training, decision making and knowledge transfer.	The project will promote technical fields of study through partnership with Ministry of Education and Human Resource Development for government scholarship that promote gender equity in areas of RE and engineering to improve the number of women with relevant qualification to enter the energy generation sector.
The construction and operation of the demo low carbon technology application projects may pose safety risks to local communities. Project could pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation).	P= 3 I= 2	Moderate	This could happen in project installations in areas where compliance to occupational health and safety standards and rules is at low levels or is not strictly enforced and followed. Construction aspects and operation of demo solar PV systems (e.g., mini-grid), solar PV-powered water desalination units e.g. Examples: Li batteries for the demo solar PV power systems (e.g., mini-grid); The project will also be involved in the application of EE technologies which could result to accumulation of used CFL or fluorescent lamps (replaced by energy efficient LED lights) which contains mercury or in some cases, to disposal of used old appliances such as refrigerators	The selection of demo sites will include safety aspects (occupational and general) as one of the criteria to be considered. Relevant EIA requirements by the Government of Solomon Islands shall be emphasized in the selection of demo sites and the project shall ensure that Moderate to high potential risks are managed and mitigated and monitoring of compliance. All the selected demos will involve site-specific environmental and social assessments and recommend measures to mitigate the identified safety risks. To ensure that the target beneficiaries of the demos will be able to properly and safely operate the installed systems in such a way that the release or handling of waste products are properly controlled, and managed, appropriate training will be provided. This will minimize or avoid any community health risks and safety issues for the communities regarding construction work involved in the installation of the demo projects, and the minimization and management of waste generated from these demos (e.g., spent lead-acid batteries, spent lithium batteries etc.).

				Proper disposal of used old lamps and appliances will be done through awareness and actual safe disposal of spent potentially hazardous old items
The operation of the demo projects (particularly those on RE technology applications) may potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or trans-boundary impacts.	P= 3 I= 2	Moderate	Potential cases could be: (1) solar PV power generation does not address battery waste disposal; (2) biomass-based power generation does not properly address waste management issues; and, (3) mini/micro-hydropower project does not consider impacts on downstream uses of the water resource.	The RE projects that will be developed and implemented will be required to adhere to the standard design practices that involve considering environmental impacts RE resource preparation, utilization, and the handling of resulting waste or effluents have their general design requirements and guides that must be complied with. Unless there are specific characteristics of the RE resource, project site, etc., that will require explicit designs, the properly applied standard designs would not make the construction and operation of such facilities release pollutants (e.g., undigested waste matter, high BOD effluents, etc.). Furthermore, SIG requirements for these types of projects will also ensure that the design will not bring about release of materials that would be detrimental to the natural environment accidentally or during disposal. The demos will be designed considering the potential waste generation and ensuring proper disposal of wastes from the various stages of construction, operation and disposal. Disposal plans will be one of the requirements of the site-specific environmental and social impact assessment that will be conducted for each of demo. Those plans, for example, will include a disposal plan for the PV panels and batteries, which contain hazardous wastes, once their useful life is expired.
Demo projects installed and operated in areas owned and occupied by traditional resource owners (Land issue)	P= 3 I= 4	Moderate	The demo projects may have to be installed in areas that are not state-owned. Because of the issue of non-availability of land for installing for example solar PV systems, or mini hydro system, the feasible sites maybe in areas that are owned and occupied by traditional resource owners.	For demo projects that could be affected by this land tenure issue, UNDP Standard 7 will be applicable. Thus, FPIC processes will be required and documented during project implementation as a part of the site specific environmental and social impact assessments to be completed prior to any physical work beginning on the installations. For the FPIC process, extensive consultations, building on initial consultations during the PPG exercise, will be conducted with local indigenous people communities. These more extensive consultations will include consultations with individual households and separate consultation meetings for women and men of the relevant clans. The FPIC

				processes and mutually agreed outcomes will be well documented as part of project implementation.
Social-cultural and climate-related risks impacts the sustainability of the implementation of the low carbon energy projects that will be implemented direct, and influenced, by the project.	P=3 I=4	*Moderate*	• Low level of social acceptance by local communities of renewable energy projects due to land tenure system and contested landownership issues • Climate change hinders full performance of RE-based energy system installations due to disturbance to supply of renewable energy resources and impacts of climate events like flood/drought/landslide.	• As part of the social and environmental safeguard measures, the Free, Prior Informed Consent (FPIC) principle will be implemented for the low carbon technology application projects that will be implemented in the of/off-grid areas of the country through the SIG EIA process • The design and implementation of the RE-based power generation and other low carbon technology applications shall follow proper engineering and construction design and construction that ensure not only structural integrity but also climate resilience. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations. Climate factors and climate scenario will be considered in the feasibility studies that will be conducted in the potential RE-based energy system demo projects, as well as in the design and engineering of the selected low carbon technology application demos.

	QUESTION 4: What is the overall Project risk categorization?		
	Select one (see SESP for guidance)		**Comments**
	Low Risk	☐	
	Moderate Risk	√	Of five risks, four rated as “Moderate” and one as “low”.
	High Risk	☐	
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?		
	Check all that apply		**Comments**
	Principle 1: Human Rights	☐	Low Risk
	Principle 2: Gender Equality and Women’s Empowerment	√	Low Risk: Gender equality and women's empowerment has been advocated by Solomon Islands through CEDAW and the Gender Equality and Women’s Development Policy (2016-2020) and implemented through the Gender Focal Points (GFPs) for all sectors with permanent secretaries as accounting for the realization of outcomes. The project will be designed to support GFPs to implement the GAP with the idea of enhancing women's active involvement in the design

			and implementation of CCM actions in the country's energy and energy end use sectors.
	1. Biodiversity Conservation and Natural Resource Management	**√**	Moderate risk: Each demo will be subject to site-specific environmental and social assessments. The assessments shall include the assessment of biodiversity conservation and natural resource management issues. The assessments will recommend mitigation measures which will be carried out during demo implementation. (May not affect conservation practices but will affect the gardens….)
	2. Climate Change Mitigation and Adaptation	☐	No risk identified
	3. Community Health, Safety and Working Conditions	**√**	Moderate risk: The site-specific environmental and social assessments that will be conducted for each potential demo sites shall include impact assessments on community health, safety, and working condition issues. The assessments will recommend mitigation measures, which will be carried out during demo implementation.
	4. Cultural Heritage	☐	No risk identified
	5. Displacement and Resettlement	☐	No risk identified
	6. Indigenous Peoples	☐	Low risk (Traditional resource owners)
	7. Pollution Prevention and Resource Efficiency	**√**	Moderate risk: The site-specific environmental and social assessments of each potential project demo sites shall include the evaluation of the pollution prevention aspects. The assessments shall recommend mitigation measures to be carried out during demo implementation.

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	
Principles 1: Human Rights	**Answer (Yes/No)**
1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? [39]	No
3. Could the Project potentially restrict availability, quality of and access to resources or basic services, particularly to marginalized individuals or groups?	No
4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, particularly marginalized groups, from fully participating in decisions that may affect them?	No
5. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6. Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment	
1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	Yes *(maybe)*
2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3. Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4. Would the Project potentially limit women's ability to use, develop and protect natural resources, considering 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
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below	
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management	
1.1 Would the Project potentially cause 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*	No
1.2 Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including 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?	No
1.3 Does the Project involve 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)	No
1.4 Would Project activities pose risks to endangered species?	No
1.5 Would the Project pose a risk of introducing invasive alien species?	No
1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7 Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8 Does the Project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.9 Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10 Would the Project generate potential adverse trans-boundary or global environmental concerns?	No

[39] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, 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 people and transsexuals.

1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered*	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant[40] greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	No
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive 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
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, and erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	Yes *(possible if not mitigated)*
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact 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)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in 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)?	No
5.3	Is there a risk that the Project would lead to forced evictions?[41]	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No

[40] Regarding CO_2, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

[41] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect 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 the screening question 6.3 is "yes" the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.*	No
6.4	Has there been an 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?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or trans-boundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose 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 Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol*	Yes[42]
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

[42] Potential pollution from waste solar batteries; negative impacts to downstream water uses in micro-hydro projects; improper waste management in biomass energy projects.

Social and Environment Management Plan (SEMP) for the SPIRES Project

I. INTRODUCTION

The Government of Solomon Islands (SIG) through the Ministry of Mines, Energy and Rural Electrification (MMERE) as the lead ministry and Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) is working together in partnership with the United Nations Development Programme (UNDP) to develop the Stimulating Progress towards Improved Rural Electrification in Solomon Islands (SPIRES). The SPIRES Project is a Global Environment Facility (GEF) approved project. The overall objective of SPIRES is the 'achievement of increased access to electricity in rural communities in the Solomon Islands'[43]. The overall objective of SPIRES Project will be realized through the achievement of the following sub-objectives:

- Adequately enforced policies and plans to support application of cost effective RE technologies for electrification access in the off-grid areas.
- Increased financial and institutional support in terms of integrated plans on the implementation of rural electrification and RE-based energy production in off grid areas.
- Improved level of confidence in the application of RE technologies and RE-based power generation to support socio-economic development in off-grid areas.
- Increased applications of climate resilient and low carbon technologies in providing electricity access in off-grid areas.
- Increased level of awareness and knowledge of the SIG, private sector & communities on cost-effective applications of renewable energy (RE) and energy efficient (EE) technologies.

SPIRES Project will be delivered in the following four components:

a) RE and Rural Electrification Policies, Regulations and Planning Improvements
b) Promotion of RE and Rural Electrification Initiatives
c) RE Technology Applications for Supporting Rural Socio-Economic Development
d) EC and EE Capacity Building

2. PURPOSE OF THE REPORT

This is a Social and Environment Management Plan (SEMP) prepared as a result of the social and environment risk screening process undertaken for the proposed SPIRES Project (see annex 1). The SEMP is prepared to address the risks identified in the screening process to fall under the category of moderate to high risks. This report (SEMP) discusses the mitigation measures, monitoring, capacity building, and stakeholder engagement and implementation action plan. The SEMP is not a substitute for an EIA.

3. OVERVIEW OF ANTICIPATED RISKS OR HAZARDS

The UNDP social and environmental risk screening template (see annex 1) was used for the SPIRES Project. The process of screening was informed by extensive consultations with stakeholders, site visits, interviews and a collaborative meta-analysis process. There were four risk factors singled out as moderate risks having an above average probability of occurring and a medium level of impact on people and the environment. These include:

[43] LFA Final document, pg.1

- Risks associated with occupational health and safety standards
- Risks associated with release of pollutants into the environment
- Risks related to land issues and
- Risks related to social and climate factors

Hence, the development of this Social and Environmental Management Plan (SEMP) aimed at mitigating, remediating and or avoiding the risk factors identified. The sections below will discuss what mitigation measures are proposed for each risk factor, relevant monitoring measures, required capacity to address the risk factors, how to engage the affected in project localities and propose an implementation plan.

4. MITIGATION

4.1 Occupational health and safety standards risks and hazards: The most significant occupational health and safety hazards occur during construction phase. The construction and operation of the demo low carbon technology application may pose health and safety risks in project localities where mini-hydroelectric plant and solar photovoltaic farm may be established. Potential health and safety risks may relate to existing poor transport systems, poor storage facilities on site, and lack of clear guidelines for proper handling, use and disposal of hazardous or dangerous materials such a fuel, chemicals and explosives. Additionally, any civil construction will include aspects of slips and falls, walk at height, moving machinery, dust, and excavation as occupational health and safety hazards. For hydroelectric work specifically, the hazards may relate to tunneling, geotechnical safety and noise and traffic safety. Tunneling may involve water retention, diversion, underground works, intake structures with potentially significant risks to life and safety[44]. Geotechnical safety is concerned with risks associated with rockslides, or landslide. Noise and dust are also hazards associated with potential blasting, drilling, and material transport and dumping[45]. The potential impact is moderate and likely to have residual impact due to the lack of OHS standards and approaches in Solomon Islands, however, the EIA process made a provision under Part III of the Act to follow international best practices in the absence of a scientific basis for decision making.

4.1.1 Mitigation measures: The approach to address this risk is to reduce and or remedy the potential impacts by ensuring the selection of demo sites will include health and safety aspects (occupational and general) as one of the criteria to be considered; relevant EIA requirements by the Government of Solomon Islands emphasized in the selection of demo sites and the project shall ensure that medium to high potential risks are managed and mitigated and monitored by MECDM/ECD with the support of the project and ensure appropriate training is provided to those at risk. All the selected demos will involve site-specific environmental and social assessments and recommend measures to mitigate the identified safety risks. Geotechnical feasibility assessments must also be thoroughly carried out to ascertain the level of vulnerability to landslides due to earthquakes. To ensure that the target beneficiaries of the demos will be able to properly and safely operate the installed systems in such a way that the release or handling of waste products are properly controlled and managed, appropriate detail hands on training will be provided to communities and project staff and waste management or recycling associations supported for collection of waste materials. The minimization and management of waste generated from these demos (e.g., spent lead-acid batteries, spent lithium batteries etc.) must also be implemented as part of the project by raising awareness. These measures will minimize or remedy any community health risks and safety issues for the communities regarding construction work during the installation of the demo projects.

[44] International Finance Corporation (IFC) 2017, Good Practice Note: Environmental, Health and Safety Approaches for Hydropower Projects
[45] Ibid

4.2 Release of pollutants to the environment: Release of pollutants into the environment due to routine or non-routine standards has potential impacts that may be of local, provincial or trans-boundary in nature. Potential pathways this may occur are through inefficient management of end of life solar panels, lack of waste management system and lack of consideration for impacts on downstream communities in micro-hydropower projects. The potential impacts will be moderate, and the residual impact may likely be moderate.

4.2.1 Mitigation measures: The RE projects that will be developed and implemented will be required to adhere to the standard design practices that involve considering environmental impacts RE resource preparation, utilization, and the handling of resulting waste or effluents have their general design requirements and guides that must be complied with. Unless there are specific characteristics of the RE resource, project site, etc., that will require explicit designs, the properly applied standard designs would not make the construction and operation of such facilities release pollutants (e.g., undigested waste matter, high BOD effluents, etc.). Furthermore, SIG requirements for these types of projects will also ensure that the design will not bring about release of materials that would be detrimental to the natural environment accidentally or during disposal. The demo projects will be designed considering the potential waste generation and ensuring proper disposal of wastes from the various stages of construction, operation and disposal. Disposal plans will be one of the requirements of the site-specific environmental and social impact assessment that will be conducted for each of demo. Those plans, for example, will include a disposal plan for the PV panels and batteries, which contain hazardous wastes, once their useful life is expired.

4.3 Land issues: The demo projects (mini-hydro and solar photovoltaic farm) may be installed and operated on customary land that is not state-owned due to non-availability of government land for demo projects. Resorting to customary owned land is possible given this context however it is not easy to reach consensus with landowners if eligible members of the tribe are not fully engaged and informed from the start. Lack of a proper FPIC process may heighten the risk of reinforcing vulnerability for communities as a result of lack of sensitivity towards land issues during consultations. The potential impact may be moderate or high due to the contested nature of land conflicts which may require long and extensive consultations over many years.

4.3.1 Mitigation measures: The FPIC processes will be required and documented during project implementation as a part of the site specific environmental and social impact assessments to be completed prior to any physical work beginning on the installations. For the FPIC process, extensive consultations that must meet the criteria and conditions of FPIC (a free, prior, and informed consent by people), building on initial consultations during the PPG exercise, will be conducted with local people in project communities. These more extensive consultations will include consultations with individual households and separate consultation meetings for women and men of the relevant clans. The FPIC processes and mutually agreed outcomes will be well documented as part of project implementation.

4.4 Social and climate related risks: The social and climate related risks and hazards impacts the sustainability of the implementation into the unforeseeable future. If awareness does not reflect FPIC sensitive consultation, low level of social license by communities towards energy projects may be experienced as a result of contested land issues and non-availability of landowners. Climate change may hinder full performance of RE-based energy system installations due to disturbance to supply of renewable energy resources and impacts of climate events like flood/drought/landslide. The potential impact is moderate and residual impact is low.

4.4.1 Mitigation measures: As part of the social and environmental safeguard measures FPIC will be implemented for the low carbon technology application projects that will be implemented in the

of/off-grid areas of the country through the SIG EIA process. The design and implementation of the RE-based power generation and other low carbon technology applications shall follow proper engineering and construction design and construction that ensure not only structural integrity but also climate resilience. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations. Climate factors and climate scenario will be considered in the feasibility studies that will be conducted in the potential RE-based energy system demo projects, as well as in the design and engineering of the selected low carbon technology application demos.

5. MONITORING

5.1 Monitoring Objectives

The objective of carrying out monitoring of the SEMP is to ensure the success of the proposed mitigation, remediation and avoidance measures and its effectiveness; to evaluate compliance with international and national policies, laws, regulations, safeguards and best practices; and ensure that the risks identified are followed through in implementation for the SPIRES Project and that relevant resources are allocated to support the execution of the SEMP plan. This allows the project to track performance against the SEMP and have clarity over operational control for this purpose. In addition, the monitoring plan will use inspections and audits where relevant to verify compliance and progress towards desired outcomes as proposed in the form of mitigation measures.

5.2 Monitoring Indicators

Several mitigation measures are envisaged to be addressed simultaneously to maximize the result of mitigation, remediation and avoidance for each of the risks identified. Table below provides a summary of the mitigation measures, the parameters to be measured, methods of monitoring and frequency of measurement.

Monitoring parameters	**Anticipated risks[46]**			
	Occupational Health and Safety	**Environmental pollution**	**Land issues**	**Social and climate risks**
Mitigation measures	• Use of selection criteria for demonstrations; • EIA; • ESIA; • geotechnical assessments; and, • trainings	• Conduct EIA • Specific design standards • Establish waste disposal systems	• FPIC compliance • Consultative meetings • Awareness • Training	• FPIC compliance • Expert engineering design • Climate proof designs
Parameters to be measured	• Set criteria for demos • EIA conducted • OHS training	• Level of grievance • Accidents related to waste disposal	• FPIC awareness • Level of grievances	• FPIC awareness • Level of grievances
Methods of monitoring	Inspections and audit	Inspections and environmental audit	Consultative meetings and follow-ups	Field observations
Frequency of measurement	Quarterly	Quarterly	Quarterly	Quarterly

[46] Based on the social and environment risk screening exercise

5.3 Monitoring and reporting procedures

The frequency of measurements of the risks in SEMP is to ensure early detection of conditions that necessitate mitigation measures and to furnish information on the progress and results of mitigation of risks. Monitoring reports for SEMP must be provided to the PMU through the Technical Working Group (TWG) in consultation with independent experts in the field of research.

6. CAPACITY DEVELOPMENT AND TRAINING

6.1 Institutional arrangements for mitigation and monitoring

To support timely and effective implementation of social and environmental project components and mitigation measures, the ESMP draws on the existence, role, and capability of responsible project partners or parties on site. MMERE and MECDM are key project partners with existing roles, capacity and mandated responsibility to carry out waste management training and geotechnical assessments as required by the SEMP to mitigate occupational health and safety risks. Other project partners such as Super Fly can also assist MECDM to conduct training on waste management for RE. However, the same could not be expected from MECDM/ECD for EIA as MECDM is an approver of EIA and therefore will not carry out EIA assessments.

6.2 Support towards implementation of mitigation actions

Support towards technical assessments will be needed due to limited human capacity within existing institutional arrangement with MMERE AND MECDM. SPIRES Project will need to out-source the task of carrying out an EIA to be done by an independent EIA specialist. Similarly, the geotechnical assessment although is well within the scope of responsibility for staff of MMERE, due to limited number of staffs, support may be needed to complete a geotechnical assessment for the project sites by recruiting an expert in the area to lead and report on the assessment. Geotechnical assessments can therefore be out-sourced. Alternatively, the geotechnical assessments can be tailored into the roles of the Chief Technical Advisor (CTA) or Chief Technical Engineer (CTE). SPIRES Project will require strong cross sector collaboration and integration by MMERE and MECDM to lead in addressing equally pertinent non-technical issues such as land issues and social-climate change issues that are outside of the scope for work of MMERE and MECDM. It is recommended that the PMU help facilitate the process with MMERE and MECDM and relevant partners to address land issues and social-climate issues.

7. STAKEHOLDER ENGAGEMENT

It is important that PMU and key stakeholders (MMERE and MECDM) involve other affected stakeholders and individuals as early as possible in the assessment process. This process may involve integrating their ideas into the design of the process, the timing, the duration, and communication and dissemination of the assessment report. By careful and thorough implementation of the stakeholder engagement plan of the project, it is expected that the stakeholders are meaningfully engaged in an effective and informed way during the implementation of the SEMP to ensure maximum realization of a collective effort to correct and reduce risks whilst enhancing associated benefits of the SPIRES Project. Besides the actual assessment itself, involvement of stakeholders may include monitoring, capacity development and training as well.

8. IMPLEMENTATION ACTION PLAN (SCHEDULE AND COST ESTIMATES):

The implementation action plan for SEMP involves the roles and responsibility of Implementing Partner other key project stakeholders. Importantly, the implementation action plan must be integrated into the overall project implementation through the annual work plan. It is important to ensure that resources are allocated to ensure availability of funds for implementation of SEMP in the projects overall planning, design, budget and implementation. Below is an indicative lump sum budget that can be budgeted for implementation of the SEMP.

ESMP Activities	Responsible Agent	Budget (USD)	Year 1				Year 2				Year 3				Year 4			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Mitigation	MMERE/MECDM/ Partners	40,000																
Monitoring	MMERE/MECDM/ Partners	10,000																
Capacity development	SINU/Project Partners	10,000																
Stakeholder engagement	MMERE/MECDM/UNDP/PMU	5,000																
TOTAL BUDGET		**65,000**																

Annex G: UNDP Project Quality Assurance Report

Submitted as a separate file. C/O UNDP SOI (To Follow)

Annex H. UNDP Risk Log

OFFLINE RISK LOG

Project Title: Stimulating Progress towards Improved Rural Electrification in the Solomons (SPIRES)	Project ID: 9787	Date: June 2018

#	Description	Date identified	Type	Impact & Probability	Countermeasures / Management Response	Owner	Submitted, updated by	Last Update	Status
1	Inadequate local capacity to implement the project activities	*March 2017/May 2018*	*Organizational*	P = 4 I = 4	• *Preventive*: While the project implementation approach is through UNDP's National Implementation Modality (NIM), other qualified and capable SIG entities will be assigned as Responsible Parties to assist the Implementing Partner (MMERE) in the implementation of the SPIRES Project. Extensive capacity development in Component will be provided to MMERE, MECDM and other key stakeholders to support the efficient implementation of the project components and sustainable systems are established for the operation and maintenance period. Additional capacity development activities for MMERE, MECDM and others will be provided during the project implementation. The PMU will develop and implement coordination and monitoring mechanisms with the local implementers and demo host organizations to expand the capacity of people in off-grid areas in the implementation of the relevant project activities. • *Alleviative:* Support from UNDP-SOI and UNDP Pacific-Solomon Islands Office is also available per SIG request.	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*

2	Delayed approval and enforcement of recommended policies and regulations of the project by the pertinent SIG agencies	*March 2017/ May 2018*	*Operational*	P = 3 I = 3	• *Preventive:* The project includes advocacy campaigns to get adequate support from the SIG authorities on the adoption of the recommended policies and regulations. UNDP will assist if necessary. A proactive M&E system will be established to support the close coordination and hand holding by the UNDP SOI and PMU for the MMERE and MECDM in ensuring that enough and timely information and advice are always available to aid rational decision-making process. • *Alleviative:* A consensus will be taken among the project stakeholders about the action steps to be taken to expedite the approval and enforcement of the recommended policies and regulations. Led by the MMERE and MECDM, this will be done through project board (PB) meetings, together with the relevant SIG regulatory authorities and involving the parliamentarians in the process.	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*
3	Demonstrated RE-based rural electrification schemes are not economically feasible for off-grid communities	*March 2017/ May 2018*	*Financial*	P = 3 I = 3	• *Preventive:* The factors to be considered in selecting the technology, delivery mechanism, financial scheme and operational/management requirements have been discussed by the PPG Team during the Project development phase with potential partners and demo hosts. Proper selection, based on agreed criteria, of the recommended RE-based electricity generation schemes will done, and their design properly done to facilitate financially sustainable schemes to be showcased, aside from the social benefits from increased electricity access.	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Increasing*

					• *Alleviative:* In case during design of selected demos, indications that the selection may not be economically viable (e.g., equipment price increase, initial design assumptions no longer apply, etc.), alternative schemes will be recommended for consideration, and appropriate adjustments will be done considering the factors that made the initial selections no longer economically viable.				
4	Installed rural electrification installations are affected by adverse climate-related events.	*March 2017/ May 2018*	*Environmental*	P = 2 I = 3	• *Preventive:* Proper engineering and construction design and construction that ensure structural integrity but also climate resilience will be strictly followed in the construction/installation of rural electrification facilities. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations. • *Alleviative:* Based on the damage assessments made, appropriate modifications or rehabilitation of the damaged installations (and budget) will be done. Potential reduction in the number of installations, or replacement with alternative demos will be done while considering the need to ensure the resulting interventions are still contributing to the realization of the project outcomes.	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Increasing*
5	Off-grid area demonstrations are not supported by communities. .	*March 2017/ May 2018*	*Political*	P = 3 I = 3	• *Preventive:* Information campaign and active promotional work in regards the rural electrification schemes that will be implemented will be carried out with the MMERE and MECDM, and possibly with CSOs/NGOS. Villages that appreciate and support the planned demos will be given	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Increasing*

					priority for the implementation of the demos. • *Alleviative:* In case selected villages will withdraw support during the project implementation, the demos will be redesigned for implementation with other alternative off-grid areas. If there will be land tenure issues, MMERE, in cooperation with relevant agencies, will exert effort to address the issue using government approach on land acquisition for power sector infrastructure assets.				
6	Non-availability of committed co-financing for specific activities of the project at the scheduled time	*March 2017/ May 2018*	*Financial*	P = 3 I = 4	• *Preventive:* The SIG (through MMERE and MECDM) assurance of co-funding shall be confirmed and secured prior to project launching through the commitment letters that will be part of the ProDoc. The project development team in close coordination with UNDP SOI, MMERE, MECDM has facilitated the formalization of commitment by co-financing partners to ensure the timely availability of co-financing from project partners and co-financers during project implementation. • *Alleviative:* Possible reallocation of budget to support the implementation of activities affected by the delays in the availability of co-financing. Potential modifications of activities will be done to allow delivery of alternative outputs that are still contributing to the achievement of the relevant outcomes, in the case of committed co-financing is not forthcoming. Together, with MMERE and MECDM conduct follow-up meetings with co-	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Increasing*

					financer, or alternatively find and negotiate with other potential co-financers.				
7	Non-continuous national government support to the project.	*March 2017/ May 2018*	*Political*	P = 3 I = 3	• *Preventive:* Continuous SIG support and working relationship, particularly among MMERE, MECDM and other stakeholders will be strengthened and sustained during PB meetings and key activities of the Project. • *Alleviative:* Should there be implementation issues that will arise, appropriate courses of actions in a transparent and reinforcing manner, will be carried out to ensure SIG ownership and support of the project. UNDP executive management intervention may be required, if necessary, in addition to the protocols under a NIM scheme.	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*
8	Relatively low petroleum fuel prices will reduce interest in RE-based power generation	*March 2017/ May 2018*	*Financial*	P = 3 I = 4	• *Preventive:* The project's awareness raising interventions are expected to sustain the overall interest of the country in transforming their power generation system to RE-based systems even when the petroleum fuel prices are relatively low. Significant savings are expected in the operation of the RE systems because of the high logistics cost of bringing diesel fuel in rural areas. The general down trend in the investment cost of RE systems is a positive motivation also for acquiring these energy solutions for rural electrification. • *Alleviative:* In case petroleum fuel prices go down, the project will emphasize the need to take advantage of the energy, environment and economic benefits of RE, and the country's obligation towards the realization of its climate change mitigation targets in its NDC to ensure that the	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*

					interest of the SIG in low carbon development is sustained				
9	Construction and operation of the demo low carbon technology application projects may pose safety risks to local communities.	*May 2018*	*Operational*	P= 3 I= 2	• *Preventive:* All the selected demos will involve site-specific environmental and social assessments and recommend measures to mitigate the identified safety risks. Appropriate training for the target beneficiaries of the demos will be able to properly and safely operate the installed systems in such a way that the release or handling of waste products are properly controlled, and managed, appropriate training will be provided. • *Alleviative:* Rational management in the transportation of materials and safety of vehicles and in the construction sites such as dug outs, flying dust, dirt, etc. involved in the installation of the demo projects, and provision of temporary storage areas for eventual disposal, recycling and management of waste generated from these demos (e.g., spent lead-acid batteries, spent lithium batteries etc.)	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*
10	Operation of the RE/EE demo and replication projects may potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local,	*May 2018*	*Operational*	P= 3 I= 2	• *Preventive:* Adherence to the standard design practices that involve considering environmental impacts RE resource preparation, utilization, and the handling of resulting waste or effluents have their general design requirements and guides that must be complied with. Projects will be designed considering the potential waste generation and ensuring proper disposal of wastes from the various stages of construction, operation and disposal. Issuances of policies and sanctions in case of violations on improper disposal of wastes	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*

	regional, and/or trans-boundary impacts				or hazardous substances, such as mercury in used lamps that are being replaced by EE lights, will be one of the requirements of the site-specific environmental and social impact assessment that will be conducted for each of demo and replication project. • *Alleviative:* Depending on the extent of the release of pollutants to the environment, proper safety procedures will be implemented while coordinating with the relevant authorities the steps to stop the situation. Additional enclosures will be setup around the affected areas to reduce the magnitude range of possible further release of pollutants (such as dust and dirt during construction) as maybe actually generated. Adjustments in the procedures/steps and implementation schedule of the affected project activities will be made.				
11	Land issues could affect demo projects in areas owned and occupied by traditional resource owners	*May 2018*	*Political*	P= 3 I= 4	• *Preventive:* FPIC* processes will be required and documented during project implementation as a part of the site specific environmental and social impact assessments to be completed prior to any physical work beginning on the installations. For the FPIC process, extensive consultations, building on initial consultations during the PPG exercise, will be conducted with local indigenous people communities. • *Alleviative:* Consultation and decision by the Project Board to address persistent issues that would arise which were not covered by the intensive discussion with landowners on the potential land issues and	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*

					provision of immediate actions to mitigate the impacts when the identified risk happens.				
12	Social-cultural and climate-related risks impacts the sustainability of the implementation of the low carbon energy projects	*May 2018*	*Environmental*	P=3 I=4	• *Preventive:* The design and implementation of the RE-based power generation and other low carbon technology applications shall follow proper engineering and construction design and construction that ensure not only structural integrity but also climate resilience. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations. Climate factors and climate scenario will be considered in the feasibility studies that will be conducted in the potential RE-based energy system demo projects, • *Alleviative:* Consultation and decision by the Project Board in finally resolving emerging socio-cultural and climate-related risks and provision of immediate actions to mitigate the impacts when the identified risk happens.	*PMU, ED/MMERE, MECDM, SEIA*	*Project Dev't Team*	*June 2018*	*Reducing*

Annex I: Results of the capacity assessment

Submitted as a separate pdf file *"UNDP – HACT Micro-Assessment of Capacity Development and Financial Management of Ministry of Mines, Energy and Rural Electrification (MMERE) in Solomon Islands" as the proposed Executing Agency.*

Submitted as a separate pdf file *"UNDP – HACT Micro-Assessment of Capacity Development and Financial Management of Ministry of Environment, Climate Change, Disaster Management & Meteorology (MECDM) in Solomon Islands" as the proposed Executing Agency.*

Summary of the Objective and Risk Rating Profile for Solomon Islands Ministry of Mines, Energy and Rural Electrification (MMERE)

HACT Micro Assessment of Solomon Islands MMERE

This will be provided during the Project Inception. This is work in progress. A previous HACT Assessment done in August 2014 needs to be updated particularly on how the recommendations have been addressed in improving capacity of MMERE.

Based on the HACT assessment in 2014, the overall risk rating of the Capacity Development and Financial Management for the Ministry regarding cash transfers is Moderate.
The current processes and procedures can be improved further through the following recommendation: Please refer to HACT assessment pages 4 &5

Summary of key findings

Our detailed findings are outlined in the checklist appended to this report. The key findings noted from our review are as follows:

Lack of insurance policies over Implementing Partner's assets. (Risk category: High);
Lack of supporting documents – training policies and scheduled training programme (Risk category: High); and
Lack of subsidiary ledger (fixed asset register and inventory listing) for fixed assets and inventory stocks (Risk category: High).

Recommendations

Our observation and review of the Ministry's capacity development and financial management indicated that several areas need to be addressed to improve the control Fisheries. Our key recommendations are as follows:

1. We recommend that the Ministry ensure the process of sourcing its own funds to pay for insurance costs, especially those required by donors or mandatory under Solomon Island law, be expedited to ensure compliance with donor policies and to avoid any penalties for non-conformation of Solomon Island's regulatory requirements (if any) and significant cash outlays to repair or replace these assets;

2. We recommend that the Ministry ensure supporting documents are filed appropriately, in a manner that is easy for retrieval and facilitates the verification process. Furthermore, we recommend that the Ministry ensure its key positions are occupied by experienced and qualified persons; and
3. We recommend that the Ministry maintain subsidiary ledgers for its fixed assets and inventories. Moreover, on a monthly basis, subsidiary ledgers must be reconciled with the general ledger. Physical verifications should also be performed for fixed assets and inventory using the fixed asset register and stock valuation reports, respectively.

Annex J. Agreements and Commitment Letters

Commitment Letter of MMERE

MINISTRY OF MINES, ENERGY & RURAL ELECTRIFICATION

P.O Box G37, Honiara, Solomon Islands
Fax: 28511 Tel: (677) 28609/21522/ 21523

Date: 15th April 2019 Ref: E 7/7/2

Mr. Vineet Bhatia
UNDP Resident Representative a.i.
UNDP Pacific Office in Fiji
Level 8 Kadavu House
Victoria Parade
Suva
Fiji Islands

Dear Mr. Vineet Bhatia,

Reference: Ministry of Mines Energy and Rural Electrification (MMERE) Co-financing commitment towards the project 'Stimulating Progress towards Rural Electrification in the Solomons (SPIRES)

The Solomon Islands Government Ministry of Mines Energy and Rural Electrification expresses its commitment work in partnership with the UNDP in the implementation of specific activities of the 'Stimulating Progress Towards Rural Electrification in the Solomon Islands' Project.
This letter confirms the MMERE's co-finance support for this project over the four years implementation period of the project, with a total amount of USD 11,416,334 from the Solomon Islands Government development budget.
The summary of this support is given below:

Type of Co-financing	Amount (US$)
Grants	11,026,774
In-kind	389,560
Total	11,416,334

The Ministry of Mines Energy and Rural Electrification looks forward to collaborating with UNDP in the implementation of this noteworthy project.

Yours Sincerely,

MINISTRY OF MINES, ENERGY AND RURAL ELECTRIFICATION
Date:.....
Sign:.....
SOLOMON ISLANDS

Dr. Christopher Vehe
Permanent Secretary
Ministry of Mines, Energy & Rural Electrification

Commitment Letter of MECDM

Solomon Islands Government

Ministry of Environment, Climate Change, Disaster Management & Meteorology

P.O Box 21,
Honiara,
Solomon Islands.

Fax:
(677) 28054
Phone:
(677) 23031 / 23032

www.mecdm.gov.sb

Mr. Vineet Bhatia
UNDP Resident Representative a.i.
UNDP Pacific Office in Fiji
Level 8 Kadavu House
Victoria Parade
Suva
Fiji Islands

15 April 2019

Dear Mr. Bhatia,

Reference: Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) Co-financing of the Project Stimulating Progress toward Rural Electrification in Solomon Islands (SPIRES)

The Solomon Islands Government Ministry of Environment, Climate Change, Disaster Management and Meteorology expresses its commitment work in partnership with the UNDP in the implementation of specific activities of the 'Stimulating Progress Towards Rural Electrification in the Solomon Islands' Project.
This letter confirms the MECDMs co-finance support for this project over the four years implementation period of the project, with a total amount of USD1,025,641 from the Solomon Islands Government development budget.

The summary of this support is given below:
Grant: 923,076.90
In-Kind: 102,564.10
Total: USD1, 025,641 (SBD 8,000,000)

The Ministry of Environment, Climate Change, Disaster Management and Meteorology looks forward to collaborating with UNDP in the implementation of this noteworthy project.

Yours Sincerely,

_____
Dr. Melchior Mataki
Permanent Secretary
Ministry of Ministry of Environment, Climate Change, Disaster Management and Meteorology

Solomon Is.

Commitment Letter from MFMR

Solomon Islands Government

MINISTRY OF FISHERIES AND MARINE RESOURCES
P. O. Box 2
Honiara
Solomon Islands

Phone: (+677) 39143
Fax: (+677) 38730

Your Ref:

MFMR Ref: F/1/12 **Date: 15 April 2019**

Mr. Vineet Bhatia
UNDP Resident Representative a.i.
UNDP Pacific Office in Fiji
Level 8 Kadavu House
Victoria Parade
Suva
Fiji Islands

Dear Mr. Bhatia,

Reference: Ministry of Fisheries and Marine Resources (MFMR) Co-financing commitment towards the project 'Stimulating Progress towards Rural Electrification in the Solomons (SPIRES)

The Solomon Islands Government Ministry of Fisheries and Marine Resources expresses its commitment work in partnership with the UNDP in the implementation of specific activities of the 'Stimulating Progress Towards Rural Electrification in the Solomon Islands' Project.

This letter confirms the co-finance support for this project over the four years implementation period of the project, with a total amount of USD3,409,720 from the Solomon Islands Government development budget.

The summary of this support is given below:

Type of Co-financing	Amount (US$)
Grant	3,000,000
In-kind	409,720
Total	3,409,720

The Ministry of Fisheries and Marine Resources looks forward to collaborating with UNDP in the implementation of this noteworthy project.

Yours Sincerely

Mr. Ferral Lasi
Permanent Secretary (ag)
The Ministry of Fisheries and Marine Resources

Commitment Letter from MHMS

SOLOMON ISLANDS GOVERNMENT
Ministry of Health and Medical Services
PO Box 349, Honiara, Solomon Islands

Tel: (677) 20830 Fax: (677) 24243

Mr. Vineet Bhatia
UNDP Resident Representative a.i.

UNDP Pacific Office in Fiji

Level 8 Kadavu House

Victoria Parade, Suva

Fiji Islands

15 April 2019

Dear Bhatia

Reference: Ministry of Health and Medical Services (MHMS) Co-financing commitment towards the project 'Stimulating Progress towards Rural Electrification in the Solomons (SPIRES)

The Solomon Islands Government Ministry of Health and Medical Services (MHMS) expresses its commitment work in partnership with the UNDP in the implementation of specific activities of the 'Stimulating Progress Towards Rural Electrification in the Solomon Islands' Project.

This letter confirms the MHMS co-finance support for this project over the four years implementation period of the project, with a total amount of US100,000 from the Solomon Islands Government development budget.

The summary of this support is given below:

Type of Co-financing	**Amount (US$)**
Grant	90,000
In-kind	10,000
Total	**100,000**

The Ministry of Health and Medical Services looks forward to collaborating with UNDP in the implementation of this noteworthy project.

Yours sincerely,

Ms. Pauline McNeil
Permanent Secretary

The Ministry of Health and Medical Services

Commitment Letter from MCILI

MINISTRY OF COMMERCE, INDUSTRIES, LABOUR AND IMMIGRATION

P O Box G26

HONIARA

Telephone: (677) 22856 Facsimile: (677) 25081

Mr. Vineet Bhatia
UNDP Resident Representative a.i.
UNDP Pacific Office in Fiji
Level 8 Kadavu House
Victoria Parade
Suva
Fiji Islands

15 April 2019

Dear Mr. Bhatia,

Reference: Ministry of Commerce, Industries, Labour and Immigration (MCILI) Co-financing commitment towards the project 'Stimulating Progress towards Rural Electrification in the Solomons (SPIRES)

The Solomon Islands Government Ministry of Commerce, Industries, Labour and Immigration expresses its commitment work in partnership with the UNDP in the implementation of specific activities of the 'Stimulating Progress Towards Rural Electrification in the Solomon Islands' Project.

This letter confirms the MCILI's co-finance support for this project over the four years implementation period of the project, with a total amount of USD 473,840 from the Solomon Islands Government development budget.

The summary of this support is given below:

Type of Co-financing	**Amount (US$)**
Grants	426,456.00
In-kind	47,380.00
Total	**473,840 .00**

The Ministry of Commerce, Industries, Labour and Immigration looks forward to collaborating with UNDP in the implementation of this noteworthy project.

Yours sincerely,

Permanent Secretary
Mr. Riley Henao Mesepitu
Ministry of Commerce, Industries, Labour and Immigration

Commitment Letter of UNDP SOI

United Nations Development Programme
UNDP Pacific – Solomon Islands

Empowered lives.
Resilient nations.

29 June 2018

Letter No: L0075/June/18
Ref: Pro/100.01

Dear Ms. ~~Dinu~~, Dear Adriana,

Subject: UNDP Co-financing support to the 'Stimulating Progress towards Rural Electrification in Solomon Islands (SPIRES).

The UNDP Solomon Islands office is pleased to confirm its co-finanincing support to the implementation of the full size project **Award 00092265 / Project 00097073 Stimulating Progress towards Rural Electrification in Solomon Islands -PIMS No:6089.**

We are pleased to confirm our commitment to provide grant co-finaincing in the amount of USD$100,000 to the realization of objectives of the project over the four year timeframe.

We look forward to working with the UNDP-GEF team to implement this project in partnership with the Solomon Islands Government.

Yours sincerely,

Ms. Azusa Kubota
UNDP Country Manager
Solomon Islands

Ms. Adriana Dinu
Officer in Charge and Executive Coordinator of UNDP-GEF
United Nations Development Programme Headquaters
New York

cc: Mr. Bakhodir Burkhanov
Country Director, UNDP Pacific Office in Fiji
and Head of Pacific Regional Programme and Policy
Suva, Fiji

P. O. Box 1954, Ground Floor, ANZ Haus, Prince Philip Highway, Honiara, Solomon Islands
•Telephone: (677) 27446; • Fax: (677) 27815; • Website: http://www.undp.org.fj

Annex K: Description of Demonstrations

As part of the barrier removal strategy of the SPIRES Project, demonstrations of the sustainable design, engineering, installation, operation and maintenance of RE-based power generation technologies and associated energy efficiency (EE) technologies in rural electrification will be implemented. Not only for barrier removal, these demos are also necessary for promoting and supporting the expansion of the market for such technologies (RE and EE). While the application of feasible RE-based power generation technologies does not need any demonstration per se, the intent is to showcase applicable and feasible delivery, market and governance mechanisms that will enhance the sustainability of these technologies in rural areas for the provision of electricity services in households, common community services, and institutional facilities (e.g., schools, local government buildings, etc.) in rural areas.

The demonstrations build on the relevant ongoing and planned (and budgeted) baseline initiatives in country on rural off-grid electrification, infrastructure development and socio-economic application of RE-based energy access through combined programs of MMERE, Solomon Power, other government agencies in productive uses, income generation, outer island development, social/rural development financial assistance, climate change mitigation and/or adaptation and related CSR activities. Discussions with relevant SIG agencies/departments on how the demonstrations can be designed to build on and be integrated with their ongoing and/or planned socio-economic and infrastructure development projects/activities in the same areas targeted for rural electrification by the MMERE (SPIRES Project implementing partner) and other SIG entities such as private sector companies, NGOs/CSOs, religious organizations community-based developer, etc. that are interested in participation in the business of providing energy access and services to off-grid areas This emphasizes the idea that socio-economic and development projects require energy for their design, implementation and operationalization. In doing so, the SPIRES demos not only the realization of the desired outcomes of the baseline projects but also, with the established synergies the RE-based electrification in off-grid rural areas of the country is achieved.

SPIRES Project' Component 3 on RE Technology applications for supporting rural socio-economic development includes demonstration activities that were designed to result in outputs that will collectively contribute to the realization of Outcome 3.1 (Increased confidence on RE technologies and Outcome 3.2 on adoption and implementation of RE technology applications in increasing access to electricity in off-grid areas. Thus, SPIRES will demonstrate RE technology application, policy implementation piloting, policy instrument application procedures, business model, commercial operation of cost-effective and energy efficient rural electrification systems in socio-economic development in selected rural communities in collaboration with one or more relevant SIG RE-based electrification projects. The expected results from the demos will therefore include combination of technical and economic viability of a specific RE/EE technology application, potential replication of the demo concepts, scaling-up of the demo for increased impact, application of piloted policy instrument/policy, and application of demonstrated procedures, among others. The expected benefits will be energy saved and GHG (CO2) avoided.

Based on the evaluation of the various relevant baseline projects[47] and determining the pertinent nexus of each project with energy access and energy services, the following are the proposed demonstration activities for the SPIRES Project:

[47] These are ongoing and planned energy projects that can be enhanced to bring about more energy savings and GHG emission reductions, and ongoing and planned socio-economic development projects of both the national and local governments, private sector and NGOs/CSOs that can further benefit from the provision of RE-based power generation and application of energy efficiency technologies in achieving their respective objectives.

Demonstration No. 1: *Sustainable RE-based Energy Generation and Utilization for Electricity Access and Water Supply*	
Sector of Demo Application: Water and Electricity Supply Security	**Location:** Various Communities
RE/EE Technology Application: Hybrid of Solar PV - diesel power generation and optional storage battery	
Baseline Project (Title/Funder/Owner/Implementor): Sustainable Program for Widespread Rural Electrification for Water and Energy Security (SIG/MMERE)	
Demo Description: This demo is on the development and implementation of feasible institutional and financial management models that are suitable for typical and distinct situations in off-grid rural communities that lack or have limited electricity supply, as well as lack of business and management capabilities for sustainably producing and supplying electricity and potable drinking water for use by rural families in off-grid areas. It involves the installation in several selected sites of optimally-sized micro-grid hybrid solar PV/Diesel/Battery power system to provide electricity and water services to the community. In each site, the installed hybrid power system will also energize a water desalination and purification plant. Both the electricity and water supply services will be showcased. Appropriate tariffs for electricity and water supply services, including a fee collection system will be designed and implemented as part of the demonstration in each demo site. The demos will be implemented in 7 selected sites (rural communities) in 3 pre-determined provinces. For each site, a solar PV array and a micro-grid distribution system will be installed, as well as a water processing and treatment plant. Included in the demo is a capacity development program that involves training of 30 people including teachers and students on solar PV system design, implementation and maintenance. Such program is also meant to establish qualified teams of individuals who will operate and maintain in a cost-effective manner the installed power generation and distribution cum potable water supply facilities in the 16 demo sites and potentially in other off-grid communities in other provinces. • 7 sites for water production, treatment and supply (5X15 kW and 2X30 kW replication); and for village electrification = (7X13 kW)	

Investment Cost, US$	**Annual Energy Savings, kWh**[48]	**Annual GHG Emission Reduction, tCO2**	**Annual Energy Cost Savings, US$**	**Economic Feasibility**	
				NPV, US$	**IRR, %**
390,425	282,072	221.71	193,925	1,945,465	36.0

Demonstration No. 2: *Rural Electrification through a Boarding School Operated Solar PV/Diesel Hybrid Power Generation and Distribution System*	
Sector of Demo Application: Energy supply, education and rural development	**Location:** Three (3) selected schools
RE/EE Technology Application: Hybrid of Solar PV with diesel power generation and storage battery	
Baseline Project/s (Funder/Owner/Implementor): **a.** SIG project on Solar electrification of rural based boarding schools **b.** ADB Solomon Islands Solar Power Development Project	
Relevant SPIRES Component & Output: Component 3.1 & 3.2 (Activities 3.1.1 to 3.2.2.1), and Component 4 (Activity 4.4.2)	
Demo Description:	

[48] For all demonstrations the annual energy savings is in terms of electricity that is generated by the renewable energy-based power generation, and the energy cost savings is the revenue generated from the sales of that RE-based electricity. The unit cost of electricity used is SBD 5.5/kWh (mainly domestic users). This is based on the SIEA 2018 tariff rates that applies both to Honiara and in SIEA outstations in the provinces.

This demo is about solar-diesel hybrid power generation and distribution system operated by a school. It is to showcase the viability of a business model for the provision of sustainable energy access in rural off-grid areas with an institutional entity (boarding school) operating as an ESCO for the provision of electricity supply services[49]. This demonstration on commercial solar PV/diesel hybrid power generation and distribution will be implemented in following schools: Moli CHS (Choiseul), Luesalemba PSS (Temotu), St. Patterson College (Temotu), Goldie College (Western) and Su'u NSS (Malaita). In these schools, the existing diesel generator sets will be supplemented with solar PV power generation units. These units will be operated in tandem in an optimal manner so that a least cost of combined power generation can be achieved. The power produced from the enhanced power generation system will be used to meet all "in-house" power needs of the school and the rest sold to the households in the neighboring villages.

- 5 sites for school operations (5x30 kW); and village electrification (5X10 kW)
- Replications in 2 sites (Waimapuru & Pamua) for school operations (2X30 kW); and village electrification (2x15 kW)

Investment Cost, US$	Annual Energy Savings, kWh	Annual GHG Emission Reduction, tCO2	Annual Energy Cost Savings, US$	Economic Feasibility	
				NPV, US$	IRR, %
751,750	157,680	123.94	264,990	2,615,405	26.7

Demonstration No. 3: *Community Operated Mini-hydro Power Generation and Distribution System*	
Sector of Demo Application: Electricity supply and rural industries	**Location:** Selected rural communities
Baseline Project (Funder/Owner/Implementor): Establishment of micro-hydro power systems in 4 rural communities (SIG/MMERE)	
RE/EE Technology Application: Micro-hydro Power Generation and Distribution	
Demo Description: This is about commercially operated mini-hydro power generation and distribution in rural off-grid areas. It involves the updating of previous hydrological data, design, engineering, installation and operation of mini-hydro power systems in 4 rural communities (beyond Solomon Power's operations). It also involves technical assistance in the establishment of the appropriate mechanism for management or legal framework for sustainable maintenance and operation, as well as institutional and financial framework for ensuring sustainability and safety. Also included in this demo are the following: (a) Capacity building to the demo hosts (i.e., communities) in the proper and sustainable operation, management and maintenance of mini-hydro power systems; (b) Capacity development for local people in the operation, management and	

[49] Boarding schools in rural areas are usually the only established institution in rural areas in the country. These institutions have the manpower, institutional and basic financial resources that can be developed to run business ventures that are related to the school curricula and operations. The schools operate and maintain their power supply system (typically diesel power generator sets). The electricity produced is used for the education activities and for the student dorms and school staff living facilities. The Ministry of Education provides annual budgets to these schools for the operation and maintenance of the diesel gensets. There is also a program of the government (through the MMERE) to supplant part of the diesel power generation with solar PV power generation to save on fuel costs for power generation. With these ongoing support programs, the power generation system in boarding schools can be enhanced (e.g., improved operating efficiency or increased power generation capacity). There are potentials for boarding schools to operate their existing power generation units to produce electricity in amounts that are in excess of what the school needs and sell this excess electricity to the households in the neighboring villages. This can be an additional income source for the school, making possible the generation of additional financial resources to support enhancements in their education program. The facility and maintenance staff of boarding schools can be trained in the operation and management of the enhanced power generation system. In this regard, the boarding school becomes an electricity service provider or an energy service company (ESCO).

maintenance of the minihydro systems; (c) Technical assistance in for community associations and NGOs in the identification and implementation of socio-economic activities for the productive uses of electricity to encourage small businesses with affordable and dependable access to energy; and, (d) Preparation of a replication plan based on the results and lessons learned from the demo to replicate the demo in other potential off-grid rural areas. Sites

- 5 sites (for community electrification) 2x50 kW, 1X26 kW, 1X30 kW
- Replications in 2 sites (for community electrification) 2X15 kW

Investment Cost, US$	Annual Energy Savings, kWh	Annual GHG Emission Reduction, tCO2	Annual Energy Cost Savings, US$	Economic Feasibility	
				NPV, US$	IRR, %
885,000	682,229	536.23	469,032	6,557,134	36.6

Demonstration No. 4: *Rural Electrification through a Potential Renewable Energy Service Company (RESCO)*

Sector of Demo Application: Education, electricity supply and socio-economic development	**Location:** Selwyn College

Baseline Project (Funder/Owner/Implementor): Selwyn College Solar PV/Diesel Hybrid Project

RE/EE Technology Application: Solar PV/Hybrid Power System

Demo Description:

This demo is about the design, installation, and implementation of a RESCO-operated power generation and distribution system supported by a suitable institutional and financial management system. It will be on the commercial operation of a solar PV/Diesel hybrid power generation and distribution system by a potential Renewable Energy Service Company (RESCO). This potential RESCO is an educational institution that operates its own power generation facility. This is the Selwyn College located in Marovo, West Guadalcanal. The demo involves the design, engineering and installation of an adequately sized solar PV/ diesel hybrid power generation system that will include a new distribution system to supply electricity to households and small businesses in the neighboring villages. It will also include the establishment of electricity tariff for the electricity service and a fee collection system. The demo will also include capacity building on demand side management for the efficient use electricity and water among the college staff and students. A replication plan will be developed from the experience gained and lessons learned from the demo for dissemination to other potential RESCOs.

- 1 site (for school operations and community electrification) 1x75kW, 1X25 kW
- Replication is 2 sites (Hunanawa and Waihua) 3X75 kW, 2x25 kW

Investment Cost, US$	Annual Energy Savings, kWh	Annual GHG Emission Reduction, tCO2	Annual Energy Cost Savings, US$	Economic Feasibility	
				NPV, US$	IRR, %
242,500	525,600	413.12	361,350	3,720,632	98.6

Demonstration No. 5: *Electrification of a Fishing Community through a Fishery Center Operated Solar PV Power Generation and Distribution System*

Sector of Demo Application: Electricity supply, Fisheries	**Location:** Designated growth centers

Baseline Project (Funder/Owner/Implementor): Constituency Fisheries Development Centers (Ministry of Fisheries and Marine Resources)

RE/EE Technology Application: Solar PV/Diesel Hybrid Power System

Demo Description:

This demonstration involves the development and implementation of RE-based sustainable growth models in constituency fisheries centers that will include (a) installation of solar PV/Diesel hybrid power systems to be used "in-house" for the operation freezers for the storage of fish to improve the marketability of the fishing harvests, ice making machines; and, (b) sale of electricity to households in surrounding villages. This demo is in conjunction with a national program to establish 50 fishery centers with 3 solar PV freezers per center[50]. The demo also involves the design, engineering, installation and operation of an optimally-sized micro-grid hybrid solar PV/Diesel/Battery power system and electrification system for surrounding families including a tariff fee collection system. It also includes capacity development for the local people to operate the center as an ESCO for the sustainable operation, management and maintenance of the installed fishery storage/preservation and solar PV/diesel hybrid power generation and distribution system.

16 fishery centers (for fishery center operation (16X1.5kW[51]); village electrification (16x12.5kW)

Investment Cost, US$	Annual Energy Savings, kWh	Annual GHG Emission Reduction, tCO2	Annual Energy Cost Savings, US$	Economic Feasibility	
				NPV, US$	IRR, %
543,200	392,448	308.34	269,808	2,620,760	35.5

Demonstration No. 6: *Rural Electrification through a Health Center Operated Solar PV/Diesel Hybrid Power Generation and Distribution System*

Sector of Demo Application: Rural health centers | **Location:** Various locations

Baseline Project (Funder/Owner/Implementor): MHMS operated/supervised rural health centers

RE/EE Technology Application: Solar PV/Diesel Hybrid Power System

Demo Description:

This demonstration involves the development and implementation of RE-based sustainable growth models in rural health clinics that will include (a) installation of solar PV/Diesel hybrid power systems to be used to supply the electricity requirements for all electricity-consuming operations of the center; and, (b) sale of electricity to households in surrounding villages. This demo is in conjunction with the Ministry of Health and Medical Services (MHMS) of building infrastructures under the RDP consisting of Rural Health Clinics (RHC) and Area Health Centers (AHC). The demo also involves the design, engineering, installation and operation of an optimally-sized micro-grid hybrid solar PV/Diesel/Battery power system and electrification system for surrounding families including a tariff fee collection system. It also includes capacity development for the local people to operate the center as an ESCO for the sustainable operation, management and maintenance of the installed RHCs and AHCs, and solar PV/diesel hybrid power generation and distribution system.

The demo involves expansion of power generation capability of health center (HC) to also serve the electricity needs of neighboring village households. This will be carried out in 25 health centers (6 kWh/day category); 15 health centers (10 kWh/day category); and, 2 heath centers (25 kWh/day category)[52]

Investment Cost, US$	Annual Energy Savings, kWh	Annual GHG Emission Reduction, tCO2	Annual Energy Cost Savings, US$	Economic Feasibility	
				NPV, US$	IRR, %
291,968	210,939	165.80	145,021	1,405,729	35.5

[50] The program which started in 2016 has developed 20 centers until 2018. The remaining 30 will be developed through the application sustainable growth model that will be demonstrated.

[51] Electricity load per fishery center consists of 300 W/freezer x 4 freezers + 300 W miscellaneous. Total is 1.5 kW.

[52] Health center categories: (1) 6 kWh/day @ 1.2 kW solar PV + 20 kWh battery ~ 1.211 kW per HC; (2) 10 kWh/day @ 3.6 kW solar + 60 kWh battery ~ 3.634 kW per HC; and, (3) 25 kWh/day @ 6.0 kW solar + 100 kWh battery) ~ 6.057 kW per HC

Demonstration No. 7: *Enhancement of Solar/Diesel Hybrid Power Generation and Distribution System Performance through Productive Use Activities in Rural Areas*	
Sector of Demo Application: Electricity supply, socio-economic applications of access to RE	**Location:** SIEA outstations (Kirakira, Lata, Malu'u, Munda and Tulagi)
Baseline Project (Funder/Owner/Implementor): SIEA Solar/Diesel Hybrid Power Generation and Distribution System projects	
RE/EE Technology Application: Solar/Diesel Hybrid Power Generation and Distribution System	
Demo Description: This demonstration involves the development and implementation of sustainable solutions mainly on the improvement of the electricity utilization levels in electric power systems (generation and distribution) that are supplied from solar PV/Diesel hybrid power generation systems. The demo will be in conjunction with the MCILI's a Small Business Entrepreneur Grants Program (SBEGP) as well as the SME/Cottage industry and micro-private sector development funding. It involves the promotion of enhanced energy access to support SMEs productive and income generating business activities in the rural areas. Specifically, the planned business activities will be in the economic growth areas that are currently served by SEIA using solar PV/diesel hybrid power generation and distribution systems[53]. The purpose of this demo is to showcase the enhancement of solar/diesel hybrid power generation and distribution system performance through the introduction of productive uses of electricity. 5 sites for promotion and implementation of productive activities, and financing schemes for the purchase of EE appliances. The 5 sites are where SIEA outstations (solar-diesel hybrid power generation) are located. These are at Kirakira, Lata, Malu'u, Munda and Tulagi. The total solar PV system installed is 2 MW. The demo will increase the load factor of these systems to at least 85%. Tentative target is for each site 20 new SME businesses funded by the SBEGP @ SBD 75,000 (US$ 9,375) grant for SME.	

Investment Cost, US$	**Annual Energy Savings, kWh**	**Annual GHG Emission Reduction, tCO2**	**Annual Energy Cost Savings, US$**	**Economic Feasibility**	
				NPV, US$	**IRR, %**
937,500	3,425,160	2,692.18	2,354,798	10,016,318	80.1

Demonstration No. 8: Enhancement of *Rural Electricity Access through a Private Sector-led Operation of Solar PV/Diesel Hybrid Power Generation and Distribution System in selected Economic Growth Centers involving commerce and SMEs*	
Sector of Demo Application: Electricity supply and distribution, rural electrification, SMEs	**Location**: Selected communities in the identified Economic Growth Centers
Baseline Project (Funder/Owner/Implementor): MCILI	
RE/EE Technology Application: Solar PV Power Generation and Distribution System	
Demo Description: This demonstration involves the development and implementation of RE-based sustainable growth models in designated Economic Growth Centers in the country that will include (a) setting up of basic	

[53] Before and after the demo, together with the SIEA, a review of the daily load curves of the electricity system in the selected economic growth area to determine the actual hourly, daily, weekly, and monthly load pattern/trend in the system to determine the types of new loads that can be served within the service area. A before and after survey of the SEIA customers in the service area will also be conducted to determine the demo impacts. The feasible solutions for increasing and optimizing the loading of the system will be the main feature of the demo. Coordination with the MCILI's SBEGP is necessary to determine the new SME/cottage industry companies that will assisted in the setting up and operating business in the demo service area. be mall Business Entrepreneur Grants Program as well as the SME/Cottage industry and micro-private sector development funding that can be linked to SPIRES project in terms of energy access for the SMEs development in productive application of access to energy in the rural areas.

infrastructure for the demo industrial/commercial estate, (e.g., roads, buildings); (b) installation of solar PV/Diesel hybrid power system in the demo estate to supply electricity to the establishments that have set up businesses there; and, (c) sale of electricity to households in surrounding villages[54]. This demo is in conjunction with the MCILI's Industrial / Commercial Estate Development Program.

The demo also involves the design, engineering, installation and operation of an optimally-sized micro-grid hybrid solar PV/Diesel/Battery power system and electrification system for the estate and for households in the surrounding villages, including a tariff fee collection system. It also includes capacity development for the estate to operate as an ESCO for the sustainable operation, management and maintenance of the installed solar PV/diesel hybrid power generation and distribution system[55].

Investment Cost, US$	Annual Energy Savings, kWh	Annual GHG Emission Reduction, tCO2	Annual Energy Cost Savings, US$	Economic Feasibility	
				NPV, US$	IRR, %
1,940,000	1,611,840	1,266.91	1,108,140	9,297,183	40.5

[54] The Ministry of Commerce, Industries, Labour and Immigration (MCILI) has launched its Economic Growth Centres Program, which is a merger of both rural development and provides an environment where private development is being created in the provincial area. This program is expected to foster employment opportunities, and pave the way for business operation to generate, provide avenue for resource owners, agriculture farmers, fishers and trades to do trade and provide income opportunities for various level of laborers and businesses.

[55] This is based on one of the MCILI small scale economic growth center project, particularly on the office projected electricity consumption data. Typically, the electricity consumption of support facilities (including office) is about 0.75-1.00% of the total industrial estate electricity consumption. Estimated load is at 6 kW for support/ancillary facilities. Based on this, total facility load is 800 kW.

Annex L: GHG Emission Reduction Estimates

The estimation of the GHG emission reductions that are attributable to the SPIRES Project is based on the most recent version of the Calculation Guide for GEF Project Greenhouse Gas Emission Reduction, as well as the 2008 Manual for Calculating GHG Benefits of GEF Projects: Energy Efficiency and Renewable Energy Projects.

1. Basic Assumptions

a. The GHG emission reductions that would be attributable to the SPIRES Project will be derived from the demonstrations that will be implemented under the project. These will be the 8 RE-based electrification (generation and distribution) application demos that will be designed and implemented using technical and financial assistance provided under the project. These are projects that are planned to be implemented by the project partners, i.e., demonstration hosts, among them are MMERE (the implementing partner), and SIG ministries such as those in-charge of environment and climate change, fisheries, commerce and industry, health and medical services, and education; as well as private sector and NGO/CSO entities. The significant portion of the GEF funding for the SPIRES Project is for the incremental technical and financial assistance for enhancing the original planned baseline projects of the project partners.

b. The other sources of GHG emission reductions that would be attributable to the SPIRES Project are from the expected RE-based power generation replication projects that will either be funded by the project owner/implementer and/or by banks/financing institutions making use of market-based financing and incentive schemes. These schemes will be developed for, and implemented by, the partner banks/financial institutions.

c. The emission factor used in calculating the GHG emissions associated from the application of RE-based power generation (solar or micro-hydro) is 0.786 kg/kWh. This is based on power generation using diesel fuel oil.

d. The 8 demonstrations are presented in Annex K. The table below summarizes the estimated annual and incremental direct GHG emission reductions from each demo:

Table L.1: Estimated Direct Emission Reductions (DER) from the Demonstration Projects

Demo No.	RE/EE Technology Application	Description	Estimated Annual GHG ER, ton CO2	Lifetime, years	Estimated Lifetime Direct ER, ton CO2		
					Total Lifetime	During SPIRES	After SPIRES
1	Solar PV/battery	Commercially-operated solar PV system for water supply (treatment and distribution) and village electrification.	221.71	20	4,434	665	3,769
2	Solar PV/Diesel Hybrid	Commercially-operated school solar PV system for school operations and village electrification.	302.96	20	6,059	372	2,107
3	Micro-hydro	Commercially-operated community-based micro-hydro power generation and distribution.	536.23	30	16,087	1,609	14,478

4	Solar PV/Diesel Hybrid	Commercially-operated school solar PV system for school operations and village electrification.	413.12	20	8,262	1,239	7,023
5	Solar PV/battery	Commercially-operated solar PV system for fishery operations and village electrification.	308.46	20	6,169	925	5,244
6	Solar PV/battery	Commercially-operated solar PV system for health center operations and village electrification.	165.80	20	3,316	497	2,819
7	Solar PV/Diesel Hybrid	Enhancement of solar/diesel hybrid system operating performance and capacity utilization.	2692.18	20	53,844	8,077	45,767
8	Solar PV/Diesel Hybrid	RE Service Company (RESCO) operation of a small-scale industrial estate.	1266.91	20	25,338	3,801	21,537

2. Overall GHG Emission Reduction

This refers to the expected GHG emission reductions (ER) from the demonstration and the replications/upscaling. The ER estimates required for GEF projects are divided into four categories: direct GHG emissions reductions (DER), direct post-project emission reductions (DPPER), indirect GHG ERs – bottom-up approach (IER-BUA), and indirect GHG ERs – top-down approach (IER-TDA). All of these are reckoned throughout the useful life of the installed demo units and replications/upscaling.

Lifetime DER – This are the expected GHG emission reductions from the demonstrations (e.g., from the energy savings from RE-based generation replacing the equivalent diesel, excluding the stand-by/residual diesel from RE/diesel hybrid demos). These are from the demos that are funded (incremental cost) by GEF and baseline co-financing. In almost all demos, the baseline effort to reduce GHG ERs through the application of RE technology will be facilitated by the proposed GEF project. In that case, the GHG ERs that could have been achieved will not be realized without the technical assistance provided through the SPIRES Project by becoming part of the enhanced demo. Also, the GHG ERs from the RE/EE projects (e.g., replication and/or scale-up of demos) that are assisted (in the design and implementation) during the SPIRES implementation period shall be considered as attributable also to the SPIRES Project as direct emission reductions.

Lifetime DER = Displaced Fossil Fuel * Emission Factor * Useful Life (years)

As can be gleaned from Table L-1, the total lifetime direct emission reduction is 123.510 ktons CO2.

Lifetime DPPER – This are the expected GHG emission reductions from RE/EE projects (replication and/or scale-up of demos) that were assisted by the GEF project and implemented after the completion of the GEF project. The GEF assistance could either be in the design and facilitation of the implementation of the RE/EE projects, or that the RE/EE project benefitted from any RE/EE project financing scheme that was developed and operationalized by the GEF project. Since the potential

replications have already been identified and will be assisted in their design and preparations. Most of these TA work will be done towards the end of the GEF intervention. Hence, these replications will be implemented by their owners/proponents after the end of the SPIRES Project. Nonetheless, the GHG emission reductions from such projects are considered as directly attributable to the SPIRES Projects. These projects are those based on Demos 1, 2, 4, 5, 6 and 8.

Lifetime DPPER = Σ DER $_{\text{Demos 1,2,5,6 \& 8}}$ = 53.579 ktons CO2.

Total Lifetime DER (LDER) = [Lifetime DER] + [Lifetime DPPER] = 123.510 + 53.579 = 177.089 ktons CO2

Lifetime IER-BUA – This are the expected GHG emission reductions from RE/EE projects that will be influenced by the GEF project (e.g., from training activities, promotional campaigns, outreach activities, or from information dissemination activities). Such projects have no direct relationship or connection with the GEF project and can be those implemented during the GEF project implementation period or after the GEF project completion. This is estimated by using a replication factor (RF). The total Lifetime IER (based on a bottom-up approach) is the Total Lifetime DERs * Replication Factor. For example, for projects involving solar PV systems and ESCOs the typical replication factor is 2.

Total Lifetime IER-BUA = [Total Lifetime DER] * [RF] = 177.089 * 2 = 354.177 ktons CO2

Lifetime IER-TDA – This are the expected GHG emission reductions from RE/EE projects that will be influenced by the GEF project. After the GEF project, there is an expected annual GHG emission reduction in the sector(s) that is/are covered by the GEF project. The reckoning of this annual GHG emission reductions is during the entire "influence period" of the GEF project, and this period is taken as 10 years after the GEF project completion. The attribution of the GHG emission reductions to the GEF project is based on how the sector(s) will be influenced by the project accomplishments (e.g., from training activities, promotional campaigns, outreach activities, or from information dissemination activities, or from the level of success of the implemented demonstrations). The total aggregate GHG emission reductions (ER_{10}) during the 10-year influence period is multiplied by a Causality Factor (CF) to estimate the total Lifetime IER (based on a top-down approach). Based on the forecast RE-based electricity generation from the expected end-of-project and 10 years later, the total ER10 is 480.76 ktons CO2. With the barrier removal activities that will be carried out, and the enabling frameworks that will be established, under the SPIRES Project, the project's influence is considered dominant. In this regard, the CF is 0.8.

Total Lifetime IER-TDA = [ER_{10}] * [CF] = 480.76 * 0.8 = 384.608 ktons

Summary of CO_2 Emission Reductions

CO_2 Emission Reduction Type	**Quantity, tCO_2**
End-of-Project Direct CO_2 Emission Reduction (DER_{EOP})	19,147
Lifetime Direct CO_2 Emission Reduction (DER_{TOTAL})	123,510
Lifetime Direct Post Project CO_2 Emission Reduction ($DPPER_{TOTAL}$)	53,579
Total Lifetime Direct CO_2 Emission Reduction ($LDER_{TOTAL}$)	177,089
Lifetime Consequential CO_2 Emission Reduction - BU Approach (CER_{BUA})	354,177
Lifetime Consequential CO_2 Emission Reduction - TD Approach (CER_{TDA})	384,608

Range of Lifetime Consequential CO_2 Emission Reduction: CER_{BUA} & CER_{TDA}: 354.2 – 384.6 ktons.

Annex M: SPIRES Annual Targets (Table M.1)

Indicator	Baseline	Year 1	Year 2	Year 3	Year 4
Project Goal: Reduced annual growth rate of GHG emissions in the energy and energy end use sector of the country.					
Cumulative Incremental GHG emission reduction from the electricity sector in rural areas, tons CO_2	0	0	6,376	12,771	19,147
National electric energy consumption index, ktoe/US$ GDP	6.42	6.30	6.20	6.05	5.87
Project Objective: Facilitation of the achievement of increased access to electricity in rural communities in the Solomon Islands					
Cumulative incremental fossil fuel savings due to sustainable energy and low carbon interventions implemented, toe	0	0	697.6	1,397.3	2,095.0
% electricity access in rural areas, %	5%	10%	15%	20%	25%
No. of new jobs created due to enhanced electricity access in off-grid areas in the country	10	20	60	100	200
Outcome 1: **Enforcement of approved policies and rules and regulations to support enhanced application of cost-effective RE technologies for electricity generation in the off-grid areas in Solomon Islands**					
No. of implemented off-grid rural electrification projects facilitated by the approved and enforced energy access, RE and EC&EE policies	0	1	2	3	5
No. of designed and implemented pilots on the implementation of applicable policy and regulatory framework for rural electrification	0		1	2	
No. of formulated, approved and implemented rural electrification plans	5	6	7	8	9
Outcome 2: Enforced improved institutional and financial mechanisms in the integrated planning and implementation of rural electrification and RE-based energy production in the off-grid areas					
No. of formulated and recommended institutional and financing mechanisms that support the enhanced implementation of rural electrification initiatives	0		2[56]		2[57]
No. of rural electrification initiatives facilitated by adopted and enforced institutional and financial mechanisms.	0		2[58]		2[59]

[56] Enhancement in carrying out energy service fee collection in community demo site.
[57] (formulated institutional & financing mechanisms to make them more effective.
[58] reflecting g the 2 demo sites institutional & financing mechanism that will be developed
[59] (the 2 institutional & financing mechanisms are working and able to facilitate rural electrification)

Outcome 3.1: Increased confidence in, and application of, RE technologies and RE-based power generation to support socio-economic development in off-grid areas					
No. of planned and implemented rural electrification projects in both on-, and off-grid areas that are based on the findings are recommendations of conducted DREI assessments of RE-based electricity generation options	0	1	2	4	5
No. of follow-up rural electrification, sustainable energy and low carbon technology application projects (demo replications and scale-ups) in on-, and off-grid areas.	0	2	4	5	6
Percentage of successful maintenance or repair work on demonstrations by MMERE and all RE-based rural electrification projects in the country	0	25%	50% support	75%	100% MMERE with no external support
Outcome 3.2: Adoption and implementation of climate resilient and low carbon electricity applications in increasing access to electricity in off-grid areas					
No. of successfully installed and operational systems of the implemented demonstrations of RE-based electricity generation and low carbon technology application in the off-grid areas.	0	1	2	4	5
No. of RE and EE technologies application projects designed and financed for implementation as influenced by the results and outcomes of the demonstrations	0	2	4	6	9
Percentage of women in community-based RESCO morally supported by village men to build their confidence in leadership	0	10%	25%	35%	50%
Outcome 4: Enhanced awareness and knowledge of the government, private sector and communities on the cost-effective application of RE and EE technologies/practices					
No. of trained national and local government personnel that can ably plan and evaluate energy access, sustainable energy and low carbon technology application projects.	0	0	2	3	4
No. of local firms that can capably provide technical, engineering and maintenance services for rural electrification and low carbon technology application projects	1	1	1	2	3

Annex N: Gender Equality Analysis

Facilitating Gender Equity in Improving Renewable Energy and Energy Efficiency Technology Applications

Conclusion

The gender environment in which this project will work in is still underdeveloped and given the gender context of the Solomon Islands, specific gender actions are recommended to reduce some of the existing inequalities and comply with national and international gender regulations and best practices. Details of the recommended gender actions are provided in the Gender Action Plan (GAP) attached to this gender assessment. The following activities are recommended for action as way forward to achieving the component 4 outcomes:

- Ensure the draft National Energy Framework 2014 is gender responsive;
- Support and operationalize the Gender Focal Point (GFP) within MMERE and MECDM;
- Ensure the GAP is implemented thoroughly;
- Ensure gender equity is included as a criterion for providing/distribution of goods and services to communities;
- Promote gender participation, and decision-making responsibilities for men and women in Village Energy Committees in the project localities;
- Strengthen governance structures that promote gender equality and leadership in local governance structures to support project implementation;
- Encourage community-community exchange and learning for men, women and youths in the Village Energy Committee to empower and promote RE, EE, EC to other communities;
- Gender Equality Social Inclusion trainings are provided to men and women in solar systems;
- Gender disaggregated data is collected during trainings, workshops, discussions, interviews, or focus group interaction;
- Consult both men and women during baseline assessments, mid-term evaluations and terminal evaluations in the project locality;
- Gender sensitive procurement and distribution of energy apparatus to communities;
- Provide access and include female-headed households and other vulnerable groups such people living below the poverty line in conversations and ensure that they have equal participation in project discussions;
- Ensure both men and women access information sharing sessions e.g. individuals with child-caring responsibilities or individuals with work obligations or disability;
- Ensure women and men are supported with livelihood options and financial literacy to generate income to support cost recovery and maintenance of energy system;
- Ensure establishment of a gender balanced community-based RESCO;
- Undertake training in governance and simple management, monitoring, record keeping and reporting for community-based RESCO;

Identify key men in the village that support women's leadership, to give moral encouragement and support to village women.

SPIRES Gender Action Plan (GAP) and Budget

Project Title		**Stimulating Progress Towards Improved Rural Electrification in Solomon (SPIRES)**				
Gender Marker		**☐ 3 x 2 ☐ 1 ☐ 0**				
Date of the GAP						
Related Output in the RRF / Related Activities In the AWP	**Intended gender equality results**	**Gender specific activities**	**Indicators to be included in M&E**	**Timeline**	**Budget, if required (USD)**	**Lessons learned, if any**
1.1 Completed review and enhancement of the draft national energy policy, including proposed policies on RE Policy, EE Policy, RE investment and RE Program	Strengthen formal rules for accessing services, resources and opportunities	Ensure the processes of review of the National Energy Policy, RE Policy, EE Policy and rural electrification associated investment are gender inclusive and outcomes are gender responsive	The number of gender responsive policies (RE, EE Policy and RE investment plans) approved for the national and local levels	Year 2, 3	2,000	
1.2 Formulated, approved and enforced policies, implementing rules and regulations (IRRs) and standards which will be on the (a) promotion and application of EE and RE technologies; (b) rural electrification, and (c) national energy planning as well as energy-integrated development Planning	Strengthen formal rules for accessing services, resources and opportunities	Ensure the processes of approval and enforcement of the National Energy Policy, RE Policy, EE Policy and rural electrification associated investment are gender inclusive and outcomes are gender responsive	The number of gender responsive IRRs and SOPs approved for the national and local levels	Year 2, 3	1,000	
1.3 Recommended, approved and enforced rural electricity regulatory framework	Create space for gender sensitive leadership and voice in decision making at the national level	Operationalize the Gender Focal Point (GFP) to enforce IRRs to (a) ensure gender promotion and application of EE; (b) promote role of gender in rural electrification, and (c) ensure gender responsive national energy planning and energy integrated development planning	Level of participation of women in implementation of (a) RE technology application; (b) promotion of RE programs and (c) national RE and EE investment plans	Year 2,3	5,000	

1.4: Formal rural electrification plans at the national and local levels	Strengthen formal rules for accessing services, resources and opportunities	Ensure the processes of development of the rural electrification plan and associated investment plans are gender inclusive and outcomes are gender responsive	The degree of gender responsiveness in formal rural electrification plans approved for the national and local level	Year 2,3	2,000	
2.2 Formulated and recommended institutional and financing mechanisms that support the enhanced implementation of the rural electrification program	Change in social attitudes towards power relations	Promoting gender role in the IRRs for financial mechanism for RE, EE, and EC for rural communities	Number of men, women and youths making conscious decision to practice EE, EC according to financial IRRs agreed upon by the community in non-discriminatory manner	Year 3	4,000	
2.2 Formulated and recommended institutional and financing mechanisms that support the enhanced implementation of the rural electrification program	Change in social attitudes towards power relations	Ensure IRRs are gender sensitive for sourcing and distribution of energy goods and services to communities	Type of technology and services supplied fully met women, men and youths' different energy needs during the implementation period in a non-discriminatory manner	Year 1	1000	
2.3: Completed rural electrification initiatives facilitated by the adopted and enforced institutional and financial mechanisms	Create space for gender sensitive leadership and voice in decision making at the village level	Promote gender balanced participation and decision-making responsibilities in Community Utilities Committees (CUCs) in off-grid area	Number of women in established village committees morally supported by village men to build their confidence in leadership Composition and representation of women and men in a gender balanced (M50:F50) community-based RESCO membership	Year 2	5,000	
2.3: Completed rural electrification initiatives	Improve access to resources, information	Provide access and include female-headed households and	Number of female-headed households,	Year 1	1,000	

facilitated by the adopted and enforced institutional and financial mechanisms	and opportunities at the village level	other vulnerable groups such people living below the poverty line in project conversations and ensure that they have equal participation and receipt of information from project discussions	vulnerable individuals and groups that improved their accessibility to resources, information and opportunities through project conversations, awareness and trainings			
2.4: Completed evaluation report on the effectiveness and impact of the enforced enhanced institutional and financing mechanisms, including suggested policies and strategies for sustaining and/or enhancing the rural electrification program's institutional and financing mechanisms.	Sense of independence, Inclusion and empowerment	Conduct training in Gender Equality Social Inclusion (GESI) good governance and simple management, monitoring, record keeping and reporting for community-based RESCO members from a gender perspective	Number of men and women attending training and being able to apply their knowledge of GESI in consultations and trainings Number of women, men and youths able to do gender sensitive M&E of agreed gender indicators	Year 2, 3	10,000	
4.1: Developed and implemented capacity development program on rural electrification planning, energy-integrated development planning, RE/EE technology application project design, implementation, operation and maintenance	Improve access to resources, information and opportunities at the village level	Livelihood training for women (sewing, baking, cooking, fisheries seafood trainings, financial literacy, banking) and for men in ice-making, joinery and other relevant trainings	Degree of increase in saving for women Amount of time spent in non-traditional activities for men and women Number of wives supported by their husbands in small livelihood activities at the household level	Year 2,3	30,000	
4.1: Developed and implemented capacity development program on rural electrification planning, energy-integrated development planning, RE/EE technology application project design,	Create a sense of independence, inclusion and empowerment	Basic solar system training and training of trainers for women technicians	Number of technical repair or maintenance work completed by women showing women's competence, confidence and self-reliance	Year 2,3	10,000	

implementation, operation and maintenance						
4.4: Established local service provision industry that supports the rural electrification program and the rural electricity sector	Improve access to resources, information and opportunities at the village level	Support gender sensitive companies for sourcing and distribution of energy goods and services to communities	Specific needs of men, women and youths are catered for by distributing companies	Year 1, 2	1,000	
Roles and Responsibilities		***Team Leader / Programme Staff*** *-Resource mobilization to support the GAP implementation* *-Ensure timely monitoring and evaluation of the GAP* *-Ensure GAP is incorporated into AWP*				
		Project Manager *-Responsible for reporting of the GAP activities in quarterly progress report to UNDP and Project Partners* *- Carry out monitoring of the GAP activities to ensure timely implementation* *-Revise GAP if necessary (based on monitoring of implementation status for each quarter)*				
		Gender Expert (if applicable); Gender Focal Point; Regional Gender Advisor *-Incorporates the GAP into project AWP* *-Monitoring and evaluation of GAP* *-M&E reporting against the GAP Indicators*				
Monitoring and Reporting mechanism of Gender Action Plan		• *Regular updates to be shared with the Integrated Results Management Team and the Gender Focal Team* • *New evidences to be shared with the Integrated Results Management Team and the Gender Focal Team*				

Annex O: Knowledge Management Plan

In line with UNDP's strategy in the achievement of its development outcomes at the broader national level, encouraging an environment where people's experience, learning and wisdom are valued; and where internal processes are structured to support people or its users in creating, sharing and using their knowledge, has been considered crucial for the long-term success of its projects, just like the SPIRES project, during and after the implementation period.

Knowledge management (KM) for SPIRES is very important for at least the following ten reasons:

a) The temporary nature of the project (for four years of implementation) requires that knowledge and information related to the project need to be captured, created, shared and reused;
b) Establishment and enhancement of a KM system will enable faster response time particularly on knowledge and information relating to RE and EE resources and initiatives;
c) KM enables and empowers decision making capability;
d) KM improves knowledge sharing on RE and EE implementing experiences in the country and among countries that are similarly situated between and among UNDP, MMERE, MECDM and other stakeholders;
e) The application of KM in the SPIRES will improve the quality of climate mitigation and RE/EE development work that will strive to reduce greenhouse emissions in the energy sector and end-use sectors including fisheries, agriculture, etc.
f) KM avoids repeating the same mistakes through sharing of lessons learned in the past or ongoing similar projects;
g) KM provides significant level of confidence and influences policy optimization, strategic thinking and broader perspectives through rooting from validated experience and results;
h) KM improves the relevancy of the country's development work at the local contexts;
i) KM preserves notable best practices that can be sustained and replicated in other sites and applications, thereby maximizing the level of energy saving and GHG reduction impact;
j) KM assists in the development of strong networks of people and organizations inspired by common objectives.

Therefore, it is a must that a KM strategy is initiated and established for the SPIRES project to enable the capturing, creation, sharing, disseminating, and application of this knowledge to build the project's platform and foundation in delivering results related to renewable energy and energy efficient pathways to the government and people of Solomon Islands.

It is the objective of the project's KM strategy to provide a platform for the capture, creation, storing, sharing, disseminating and application of knowledge and knowledge management pathways to achieve the project's goal of reduced annual growth rate of GHG emissions in the energy and energy end-use sector of the country. This will also contribute to reducing GHG emissions for the Solomon Islands while contributing to the increased level of rural electrification using RE/EE technologies.

The project will build upon existing KM systems and practices in MMERE, MECDM, UNDP SOI and other key stakeholders. Current knowledge storage capacity exists within the MMERE information technology structure which uses high-speed Wi-Fi internet system and a global information system that captures layered maps, solar maps, hydrological maps and related datasets within the ministry. MMERE is currently developing its website. Nevertheless, certain challenges exist for MMERE in the coordination of knowledge management particularly in a platform or repository to store knowledge on its energy-related resources and initiatives. For example, data on RE projects were not coordinated or updated and it is time-consuming just to retrieve related information. Thus, such gaps need to be addressed.

It is a good opportunity for SPIRES to ride on the UNDP SOI's current KM systems and sharing practices that aid practitioners and professionals working on climate change issues with the use of UNDP SOI's website, Facebook, twitter as well as through other similar access to international and regional dissemination media websites, social media, newsletters and reports on international workshops, meetings, and conferences. **Proposed Knowledge Management System**

The KM system to be established for the SPIRES project should focus on enhancing existing information management systems and practices within MMERE, other Solomon Islands government institutions and UNDP through the IT infrastructure and the knowledge of 'what' to be gathered, stored and disseminated. This system must be tailored to meet the SPIRES goal, objectives and outcomes.

a. Knowledge Management Messages.

The following are potential key messages that SPIRES may use, to share, and make aware of the projects to provincial level governments, communities, schools and other relevant stakeholder in the targeted demonstration sites:

- Renewable energy technologies and energy efficiency of appliances;
- Electricity supply benefits or benefits of renewable energy to apply this project outcome and replicate this to other sites;
- How to establish, operate an institutional and financing mechanism aimed at contributing to reducing greenhouse gas emissions and income generation for rural communities and schools;
- Solar and hydropower development and operations, and how these technologies contribute to energy efficiency and energy conservation in the Solomon Islands;
- Project profile –a summary of the project's goals, components, outcome, outputs areas and its achievements.

b. Knowledge Management Products

Knowledge management products which the SPIRES may develop include:

- Posters, banners, brochures will be developed for the project as project outputs??
- Lessons learned best practice will be produced on renewable and energy efficiency to highlight the impacts of the project.
- Knowledge manuals and guides of renewable energies will also be considered for development;
- A photo gallery of the project will be established and maintained by the project communication officer so that it captures moments of awareness raising, information sharing, design and engineering of RE application installations;
- A social media page on Facebook and twitter will be created for the project so that the project team can share updates with its networks around the region;
- Development of a GIS and resource mapping to store SPIRES project knowledge containing information on project sites, type of RE systems installed, number of beneficiaries etc. This will be supported by MMERE during the SPIRES implementation phase and will be institutionalized into MMERE once the project ends. These will allow for ease of retrieval and use into the future.

c. Knowledge and information Management Exchanges and networking

SPIRES will be employing several KM pathways:

1. *SPIRES Facebook page:* Establishment and operationalizing of information exchange network that will be established and operationalized under the project. A Facebook page dedicated to the project will enable the sharing of updates of the project where lessons may be shared with the public.
2. *Linking to other knowledge exchange portals:* Knowledge management exchanges and networking allows for knowledge acquisition from other learning platforms. For SPIRES this will include the Data/information on lessons learned and best practices on the application of low carbon development technologies in small island settings can be obtained from PICs and SIDs and be applied to specific situations and localities in the country via the information exchange network. Lessons from project activities will also be shared with other PICs and SIDs through the same network. Such network will also consult and coordinate with the Global Renewable Energy Islands Network (GREIN), which is a network that help SIDS in accelerating their renewable energy uptake, serving as a platform for pooling knowledge, sharing best practices and seeking innovative solutions for the accelerated update of clean and cost-effective renewable energy technologies in island states and territories. Refer to the URL: https://sustainabledevelopment.un.org/partnership/?p=8011
3. *Look and Learn knowledge exchanges*: Other knowledge management sharing include look and learn visits. SPIRES will make use of such opportunities for its communities and school members and staff to create a community of practice so that they may apply the knowledge they acquired from SPIRES and be able to replicate this to other sites. These exchanges may involve a team of competent local and international experts will be formed and this team will work on information, communication and education activities that are aimed at enhancing the capacity of local community people in the operation and management of RE-based application technology. Women may be made responsible to clean solar panels, as they have household management skills at the community level. Knowledge transfer should engage the SPIRES technical working group to advise on opportunities for knowledge and information sharing.
4. *National Renewable Energy Forum:* A national energy forum may be part of these developments to provide a platform for communities, institutions and the private sector engaging with energy-related initiatives to discuss renewable energy and energy efficiency issues and find solutions to tackle this issue towards expanding the market for RE and EE technology applications and expected social and economic benefits.

Recommended Exit Strategy

As the project completion nears, the SPIRES exit strategy shall be initiated as agreed upon at the outset of project implementation as post-project arrangement that will focus on how knowledge that was captured, stored, shared between and among SPIRES partners will be used for sustainability and replication to other sites in order to achieve the project's long-term objectives and targets.

a. Training of community, school institutions and officers

Capacity Building and training form the foundation of Component 4 of this project regarding Renewable Energy and Energy Efficiency Capacity Building. This will focus on the building of capacity for communities, schools and partner institutions. Local communities and schools will be trained on the knowledge products that will be developed as well as trained within formal education institutions to capture useful knowledge on renewable energy and energy efficiency, Government officers , community members and school staff will be trained on the operation and maintenance of the Solar and hydropower technologies that will be installed in their institutions.
Opportunities to building capacity and transforming of KM into the future after project life ends will also explore opportunities with the private sector and non-government organizations on institutional and financial mechanisms so a revenue system is maintained for sustaining operations of RE systems

to be installed. Payment of electricity in off-grid areas by people so that it creates revenue for the generation of such projects (and who will be responsible for organizing the payments of services from rural people in the off-grid areas to sustain the project) shall be specifically identified in the exit strategy.

b. Knowledge and Information Management Transfer

Guides, lessons learned and other knowledge products that will be produced during the project will be maintained by communities and school so they can be referred to when it is needed. It is important that those products will be integrated within MMERE so to improve its capacity with resources for replication to other future sites.

Conclusion

Knowledge Management is crucial to the achievement of the SPIRES projects objectives and goal. Here knowledge management strategies including knowledge management messages focusing on RE and EE and its application to the SPIRES have been discussed; as well as the knowledge management products and knowledge exchanges and networking to take place once the project is established. An exit strategy for knowledge transfer to MMERE, provincial government, targeted communities, and schools have been discussed to institutionalize SPIRES project memory to MMERE, so that knowledge and lessons on best practice are captured, maintained and applied for better decision making within MMERE and other SIG agencies to achieve improved sustainability and replication on RE and EE to other sites in the country.

Annex P: Stakeholder Analysis and Engagement Plan

A. Stakeholder Analysis

1. Purpose of stakeholder analysis

The purpose of the stakeholder analysis is to identify project stakeholders who can be engaged as partners to deliver specific objectives of the project and subsequently develop a Stakeholder Engagement Plan (SEP). In this assessment, stakeholder roles and responsibilities, their perception of likely benefits, risks and impacts of the project and how to mitigate risks on stakeholders as a result of the project implementation are investigated and analyzed in this assessment.

2. Policies and requirements

The SEP is a requirement under the GEF Policy on Stakeholder Engagement. The GEF requires meaningful stakeholder consultations whereby stakeholders can express their views on project plans, benefits, risks, impacts and mitigation measures that may affect them. The GEF Policy also requires that all relevant stakeholders are involved as early as possible in the preparation process and continue throughout the project cycle.

3. Methods for consultation

The project design phase involved several consultations with institutional stakeholders and potential community stakeholders. Potential project sites (communities) were identified using an agreed set of community selection criteria. Two potential sites visited were Hunanawa Community in East Are'are, Malaita Province and Waimapuru National Secondary School in Makira Province. Institutional stakeholders were identified based on roles and functions and area of interest (technical, legislative, development, informational, training, financing, sustainability, monitoring and evaluation) in the energy sector. The initial list of stakeholders was derived from the LFA and a snowballing technique was used to enlist new stakeholders to the final list of stakeholders being consulted. The consultations attempted to capture the stakeholder's views on the project plan, benefits, risks, project impacts and mitigation measures that may affect the stakeholders. Consultations and assessments occurred over a period of two weeks.
Below is a summary of stakeholder engagement activities during the project development phase:

- Telephone calls to stakeholders to organize meetings, follow-up with appointments and provide further information for stakeholders
- Email exchange with stakeholders to provide further information on project scope, demonstrations and value-adding initiatives for the project
- Attend Project Board meeting as guest to learn about potential synergies from existing project and share project information
- Stakeholder consultations (see annex 1)
- Field visits and focus group discussions on project plans, benefits, risks, impacts and community interest and engagement
- Focus group discussion with women on gender roles related to the project activities, benefits, risks, impacts and interest and engagement

4. Project stakeholders

The following stakeholders were identified as having interest, experience, capacity, networks and potential benefits corresponding to the goals and objectives of the SPIRES Project:

4.1 Government Ministries

a. *Ministry of Mines Energy and Rural Electrification (MMERE)* – is a key partner with mandate over development of renewable energy in Solomon Islands specifically through the draft 2014 National Energy Policy Framework (NEPF) and the 2014 draft Renewable Energy Investment Plan (REIP). Turning policies into action with the help of partners is the responsibility of the Energy Division (ED) within MMERE. ED oversees energy policy formulation and implementation, renewable energy development, energy analysis, energy advisory services and project implementation. As implementers of key energy policies and strategies, MMERE has high influence in setting the context for implementation and promotion of renewable energy for communities and influence other stakeholders in the energy sector. MMERE has built alliance with Solomon Power through the *Electricity Act 1969* and have fostered strong donor and bilateral partnership through energy projects with World Bank, GIZ, Italy Government and Japanese Government and have worked collaboratively with other ministries such as Ministry of Environment Climate Change Disaster Management and Meteorology (MECDM) and Ministry of Education Human Resources Development (MEHRD) in implementing those projects. MMERE is currently progressing with its plan to develop a National Energy Roadmap with potential donor support from Japanese International Corporation Agency (JICA). SPIRES Project will contribute to meet government plans for rural electrification to reach off-grid areas in collaboration with work currently done by Solomon Power under ADB funding. MMERE identified capacity building in mini-hydro systems of energy production as a vital area of capacity building for the division to support the work of SPIRES Project.

b. *Ministry of Environment Climate Change Disaster Management and Meteorology (MECDM)* – is a key partner for the project with mandates to address climate change mitigation ascribed under the National Climate Change Policy 2012-2017 and the Nationally Determined Contributions (NDC) by reducing its carbon emission as a signatory of the UNFCCC Paris Agreement. The specific functions are the responsibility of the Climate Change Division (CCD) within MECDM. With access to financial and technical resources, Solomon Islands can contribute to meet the target of a maximum reduction of 45% in GHG emissions by 2030 compared to a business as usual scenario[60] in the NDC. CCD has interest in the energy sector to ensure progress towards meeting its NDC emissions targets through the SPIRES Project. Hence, CCD has strong interest to replace diesel powered generators in schools and replace them with RE systems and promote EC and EE applications. CCD has accessed funds for RE through GCF for the development of the Tina Hydro, GIZ for the Selwyn College Project and GEF for the SPIRES Project and worked with World Bank, SPC and UNDP respectively to implement the projects. CCD is also keenly aware of the accompanied issue of technology waste as a result of the supply of energy technology and apparatus (batteries, solar panels, etc.) into remote rural areas and would like to seek SPIRES Project support to develop a waste removal strategy as a mitigation action.

c. *Ministry of Fisheries and Marine Resources (MFMR)* – This is responsible for managing the country's aquatic resources. It develops and manages national policies on the use and management of fisheries, aquaculture and marine resources. It is the country's leading government research institution focused on fisheries development and provides fisheries and aquaculture extension services. Part of that service is the establishment of fishery centers in selected economic growth centers of the country. The project's partnership with MFMR is mainly in the demonstration activities on enhancing the capability of fishery centers to serve fishing communities through the provision of electricity access.

[60] Solomon Islands Nationally Determined Contributions (NDC) 2015, p.7

d. *Ministry of Health and Medical Services (MHMS)* – This is responsible for the management and delivery of the health and medical services in the country. Among its primary units is health care, particularly provincial services that include a network of health centers, aid posts, and village health workers. Several of its health centers, particularly those located in rural off-grid areas are planned for rehabilitation, which include among others, refurbishing of the energy supply hardware. The project's partnership with MHMS is mainly in the demonstration activities on enhancing the capability of health centers to serve the communities where these are located by enabling them to provide electricity services.

e. *Ministry of Commerce, Industries, Labour and Immigration (MCILI)* – This ministry has launched its Economic Growth Centres Program, which is a merger of both rural development and provides an environment where private development is being created in the provincial area. This program is expected to foster employment opportunities, and pave the way for business operation to generate, provide avenue for resource owners, agriculture farmers, fishers and trades to do trade and provide income opportunities for various level of laborers and businesses. The project's partnership with MCILI is mainly in the demonstration activities on enhancing the capability of small-scale industrial estates to provide adequate electricity supply through RE-based power generation and supply system to entities (particularly SMEs) that will set up business in such estates.

f. *Ministry of Education Human Resources Development (MEHRD)* **–** is a strong beneficiary of SPIRES Project in consenting to engage Waimapuru National Secondary School (WNSS) as a possible demonstration site for micro-hydro or hybrid energy system installation. MEHRD is interested in replacing diesel generators in government schools with RE systems to reduce running costs for diesel generators. The MEHRD through its Asset Management Division (AMD) may influence the project design and implementation particularly in areas of long-term sustainability of the RE systems for schools through school grant allocations for maintenance and repair. The AMD may be trained in a tailored financial mechanism that would benefit the purpose of a revolving fund to be administered by the school for energy production, use and maintenance. The MEHRD would carry out an internal assessment to explore the details of an appropriate financial mechanism to be used by WNSS. The AMD should be trained in the basics of energy technology in order to appreciate and understand the technology in order to manage it. As the agency responsible for human development planning and training, MEHRD is interested in supporting the long-term capacity development for technical training in RE design and installation for solar, hydro and wind energy through the provision of government funded scholarships. MEHRD plays a vital role in the SPIRES Project.

g. *Ministry of Provincial Government and Institutional Strengthening (MPGIS)* **–** has roles in strengthening institutional governance and financial accountability for improved delivery of services and accountability in the provincial government system. MPGIS does not have a direct role to play in the project however, SPIRES Project would benefit from MPGIS trainings offered to provincial government officers in the area of transparency, accountability and reporting.

h. *Ministry of Women Youth and Children's Affairs (MWYCA)* **–** shows high interest in the SPIRES Project as a conduit for gender mainstreaming into a highly technical field - the energy sector. MWYCA's roles and functions include women and development, gender mainstreaming and gender equality. MWYCA has a direct interest in women empowerment in sustainable development including development in male dominated fields such as the energy sector although the interest is very low at present due to lack of activities in this area for the ministry. MWYCFA can provide technical support in capacity development, policy support, mentoring and networking with provincial based women development officers. The agency has very high interest however

their influence is low due to limited support for co-financing of gender activities in the SPIRES Project. MWYCFA does not have any current or past projects in the energy sector and does not have a definitive plan for reaching out to the energy sector apart from its entry route through the GFPs so the SPIRES Project would add another pathway to support MWYCFA's gender mainstreaming into the sector to achieve its policy goals.

i. *Ministry of Development Planning and Aid Coordination (MDPAC)* **–** is the master planner (for both medium and long term) for SIG and therefore is a key partner in the SPIRES Project. MDPAC's interests in the SPIRES Project are in relation to planning and implementation of the National Development Strategy 2016-2035. MDPAC has a core function of manpower planning for both public and private sectors and aid coordination. MDPAC will provide advisory support for the implementation of the project through its intended membership in the project board and steering committee and monitoring and evaluation of the overall implementation of the project to shed light on sustainability models for future energy development and financing.

j. *Ministry of Rural Development (MRD)* **–** MRD is a public stakeholder and plays key roles in development and welfare activities in the rural areas which include the 50 constituencies in Solomon Islands. MRD oversees development in rural areas that improves delivery of primary services in health, education, sanitation, conservation, road construction and economic growth for the communities. MID does not have a direct role in the implementation of the SPIRES Project but is interested in socio-economic impact of a technical project as SPIRES.

k. *Ministry of Infrastructure Development (MID)* **–** deals with the development of important infrastructure to support development in Solomon Islands such as bridges, wharves and roads. Its mission is to ensure safe and efficient standards in infrastructure development and a well-planned national transport system. Energy development in off-grid areas may stimulate development of important infrastructure in the areas hence the importance of the role of MID as a potential collaborator in the future. MID does not have a direct role in the implementation of the SPIRES Project.

4.2 Provincial Government and Authorities

a. *Malaita Provincial Government* **–** Premier and Provincial Secretary showed high interest for the SPIRES Project in bringing energy to remote rural communities in Malaita such as Hunanawa Community. Although the direct involvement in the project is remote, the Premier and PS rendered political support on behalf of the provincial government in overall development of the energy sector with attention to women empowerment[61] and expressed interest to receive reports, updates and feedbacks from evaluation on the SPIRES Project.

b. *Makira Provincial Government* **-** Premier and Provincial Secretary showed high interest for the SPIRES Project in establishing a demonstration of a micro-hydro system to WNSS and expressed desire to see similar project or SPIRES Project extend its reach to Pamua Provincial Secondary School. Premier and PS rendered political support towards the project and expressed interest to receive reports, updates and feedbacks from evaluation on the SPIRES Project.

1. *Makira Education Authority (MEA)* **-** has high interest for the SPIRES Project in establishing a demonstration of a micro-hydro system at WNSS and is a member of the school board. MEA does not have a direct role in the implementation of the SPIRES Project but can influence decisions made by the school towards the management of the demonstration site at WNSS.

[61] Malaita Province recently launched a policy on Women Development and Empowerment

4.3 Private Enterprises

a. *Solomon Power (formerly SIEA)* **–** is responsible for electric power supply and distribution to both urban and peri-urban areas under the *Electricity Act 1969*. Solomon Power also does training and licensing for non-utility actors in the energy sector. Solomon Power influences RE in areas of energy development and expansion into non-grid areas using standalone systems. SP is both a regulator and implementer of key energy projects such as Tina Hydro funded by donor partners such as World Bank. Hence, Solomon Power has capacity, expert knowledge and skills to share with SPIRES Project. With new ADB project in Noro, Seghe, Taro, Munda and Afio, is a key project partner to consult to share resources and approaches in implementing the SPIRES Project. Solomon Power has trained and licensed several electrical engineers and may also support renewable energy work in off-grid areas. SP is a key partner for SPIRES Project.

b. *Super Fly* **–** is a private stakeholder with high interest in the SPIRES Project. It provides first class solar photovoltaic and electrical services and end-user trainings and has strong interest for installation of solar photovoltaic system in off-grid areas especially rural communities. Established in 2011, their mission is to provide the best sustainable and affordable energy product services in the Solomon Islands while upholding values in sustainability, competence and quality, integrity and continuous improvement and inclusivity. Super Fly provides services in system diagnoses, design, installation and capacity building to rural communities in quality solar systems (small, medium and large). Super Fly has high interest in solar standards, installations, diagnoses, repairs and maintenance and capacity development for end users including women. Super Fly has worked in the past with Solomon Islands Government through MHMS and MEHRD, Anglican Church of Melanesia (ACOM), ADB, SPREP and SPC and has delivered solar training for West Are'are Rokotanikeni Association (WARA) through World Bank support. Other community initiatives include installation of solar system for 14 households, church and clinic for Buleani Community in Marovo Lagoon, Western Province. Super Fly has collaborated with World Bank, Ministry of Health and Medical Services (MHMS) through DFAT Project and will collaborate with TVETs (Kaotave, Gizo and Batuna) in a future project. Super Fly also promoted EC and EE applications by raising awareness with end users of Solar systems using best practice messages displayed via simple visual and easy to understand laminated A4 leaflets and manuals showing operation and maintenance guidelines for efficient energy use and conservation. Super Fly is a key stakeholder to SPIRES Project providing gender inclusive training and Training of Trainers (ToT) that meets the needs of rural women with limited education and low confidence to handle technology.

c. *West Are'are Rokotanikeni Association (WARA)* **–** is a community-based women's group with goal of empowering women in financial literacy to achieve women development goals. WARA is known for its saving club impact and its outreach to other communities in Malaita and other Provinces to involve in financial training to build skills for women leaders, trainees and enthusiasts.

d. *Solomon Islands Women In Business Association (SIWIBA)* **–** is a women-led association that aims to liberate and empower women to move to small and medium size companies. SIWIBA in keen to use resource persons to train community women in their villages.

4.4 Educational Providers

a. *Solomon Islands National University (SINU)* **-** is a state-owned enterprise with high interest in the capacity building component of the SPIRES Project. SINU has a holistic view on education in the area of RE with high interest in delivering quality courses with emphasis on sustainability, cost efficiency, environmental impacts and technology absorption. SINU is cautious about impacts of

introducing a corporate culture to communities through user pay systems for energy services which may exacerbate vulnerability of communities especially for marginalized people in communities. SINU is currently offering courses in Certificate for Electrical Technology and developing a diploma program on photovoltaic energy to build on the certificate level (for both on-grid and off-grid systems) course. The diploma course is currently funded by ACSE Project. Under its Community Outreach Lifelong Learning Program, SINU provide short courses to communities introducing basic solar concepts, maintenance of solar system and Training of Trainers (ToT) that can be tailored to meet specific needs of clients. SINU has partnered with Rural Development Project (RDP) to train 29 electrical technicians for project communities and have also trained RTC instructors under EU funding. SINU is currently working with ACSE Project under GIZ funding and has a pipeline project (PACTVET Project) to be funded under GIZ to assist in development of curriculum for refrigeration and air conditioning. For the future, SINU has interest in developing courses that address technology waste especially from solar systems. SINU will work with SPIRES Project to meet specific capacity building activities for community end-users, building on initiatives from RDP and ACSE and PACTVET Project.

The SINU Marine Studies also has high interest to provide training to communities in value-added seafood products such as fish canning. SINU Marine Studies also is interested in establishing community fisheries learning hubs and build the relationship to extend their outreach to communities.

4.5 Non-Governmental Organizations

a. *Live and Learn Environment Education (LLEE)* – is an international NGO and has stake as a 'subject' in the project. LLEE focus on environmental and development education based on principles of open participation and equality, environmental ethics and local ownership. LLEE works with communities throughout the Pacific to better understand climate change, disaster preparedness and water and sanitation. LLEE has partnered with UNDP on Pacific Risk Resilience Project (PRRP) and has interest in promoting RE, EE, EC for communities to improve their overall standard of living. LLEE will be an important stakeholder for SPIRES to promote RE, EE and EC and raise awareness on climate change impacts.

4.6 Donor funded projects

a. *The Adapting to Climate Change and Sustainable Energy (ACSE) Project - is* funded by EU/GIZ with a total budget of 797,878 Euro. The project takes care of a solar hybrid power for Selwyn College (PDD 26). The project aims to show case sustainable use of electrical power to schools to replace diesel powered generators and promote energy efficient and energy conservation attitudes and behaviors. The project started in 2016 and is expected to be completed by 2018. Under ACSE Project a diploma course is also developed with SINU for solar photovoltaic energy and is expected to be completed and approved by mid-2019. The PACTVET Project also funded by GIZ is expected to focus on developing curriculum materials for refrigeration and air-condition. The project is still a pipeline project for SINU.

b. *The Tina Hydro Project* - is a hydropower system funded by GCF and other donors such as ADB, DFAT and WB. The aim of the project is to provide RE electricity to the urban centers of Honiara and reduce diesel powered generators and turbines. The Tina hydropower Project started in xx and will end by xx. The Tina Hydro has contributed to the developed of capacity for the SP as a key partner in developing skills in hydropower design and installation.

c. *The Australian Department of Foreign Affairs and Trade (DFAT)* - also funded an SBD$16 million program for TVET schools to improve their competency to deliver quality courses that can be accredited for the diploma courses in RE at SINU. The funding supported the establishment of the Solomon Islands Tertiary Education Skills Authority (SITESA) as the quality control body for Solomon Islands.

d. *The Asian Development Bank (ADB)* - is funding a USD$15M Solar Power Development Project for Kwainamoro, Kirakira, Lata, Malu'u, Munda and Tulagi by 2021. The project is implemented by Solomon Power. Another project; 'Provincial Renewable Energy Project' was stalled due to land dispute and lack of progress with court decision over land ownership.

The Power-Interest Grid analysis helps to assess the level of influence, importance and involvement of groups and institutions with vested interest in renewable energy, energy conservation and energy efficiency. Not all the stakeholders assessed that have interest in the SPIRES Project have power to influence decisions. The grid helps to show the position of individual stakeholders and the relations between or amongst them to identify and anticipate where potential stakeholder conflicts may arise and how to understand and manage stakeholder conflicts more effectively.

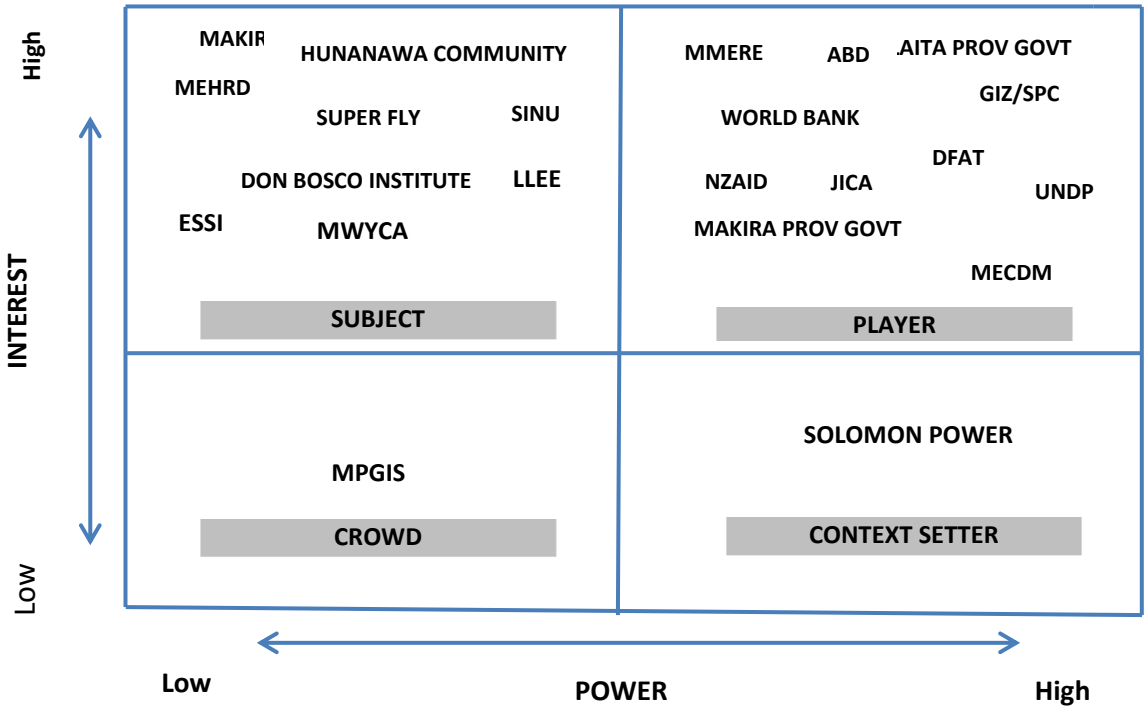
Players **-** Stakeholders categorized as '*players*' have high interest and high power to influence decisions in the project. Key players in this project are major financiers, potential financiers, policy custodians or key executing agent, GEF focal point and key implementing agent in the project implementation. Adequate resources should be used to actively engage, consult and mobilize key player stakeholders when it matters for project success in implementation. This category of stakeholders shall be engaged in decision making responsibilities and render advice to the project when required. There are many key players in the project, and they may at times have opposing views on critical decision-making areas for the project. Grievances that might arise with, amongst or between key players must be treated with caution and managed at the advisory level immediately. Key players should be kept well informed about the project's progress in implementation on a timely manner.

Subjects **-** Stakeholders categorized as '*subjects*' have high interest and low power to influence decisions in the project. This category of stakeholder plays a key role in project implementation. They would require close guidance, monitoring and evaluation of their work performance against target outputs on a timely manner. Engagement of these stakeholders would ideally involve MOU's with executing agent where needed. Enough resources should be used to coordinate their work in order to avoid duplication, overlaps and omissions. Grievances must be managed to avoid impacts on implementation. Given the possibility of overlapping roles especially in capacity building component, mutual agreements must be reached with stakeholders on the details of their activities and implementation approach of the activities specified and their engagement must be legally binding through an MOU or LoA with UNDP.

Crowd **-** Stakeholders categorized as 'crowd' have low interest and low power to influence decisions in the project. Engagement of crowd stakeholders can be kept at a minimum. However, crowd stakeholders may form alliance with 'players', 'subjects' and 'context setters' to influence their decisions or interests on a certain issue, hence their views are important to gauge alliance support.

Context Setters **-** Stakeholders categorized as 'context setter' have low interest in specific concepts of the project but still have high power to influence decision in the project in key areas of collaboration. Engagement of context setters must be well moderated and highly consultative to avoid absence of engagement that may stall progress. Context setters must be properly consulted and rightly engaged to maximize contribution to the project.

The purpose of the Power-Interest Grid analysis is to assess the level of influence, importance and involvement of groups and institutions with vested interest in renewable energy, energy conservation and energy efficiency. Not all the stakeholders assessed that have interest in the SPIRES Project have power to influence decisions. The grid helps to show the position of individual stakeholders and the relations between or amongst them to identify and anticipate where potential stakeholder conflicts may arise and how to understand and manage stakeholder conflicts more effectively.



B. Stakeholder Engagement Plan

Table P.1: Stakeholder Engagement Plan

Project stakeholder	Stakeholder Interest	Roles and responsibilities in implementation	Means of engagement in the project	Engagement schedule during implementation
GEF	GHG emission reduction	Project financing	Annual reporting	Yearly
UNDP	Sustainable Development	Project implementation	Project procurements, finance management and resource mobilization	Daily
MECDM	GHG emission reduction	Provide advisory services and monitoring of project execution and implementation	Access GEF funding	As required
			Reporting to UNFCCC	As required
			Project Board Meetings	Quarterly/Mid-Term
			Monitoring and Evaluation	As planned
MMERE	Renewable energy development	Primary executing agent (responsible partner) for SPIRES Project	Project Board Meetings	Quarterly
				Quarterly
			Project Mid-Term Evaluation	As planned
			Implementation of component 1,2,3	Quarterly
MFMR	Reliable energy (particularly electricity) supply to fishery centers	Demonstration activity partner	Project Board meetings Demo implementation	As scheduled As scheduled
MHMS	Reliable energy (particularly electricity) supply to health centers	Demonstration activity partner	Project Board meetings Demo implementation	As scheduled As scheduled
MCILI	Reliable energy (inclusive of electricity) supply to commercial and industrial businesses	Demonstration activity partner	Project Board meetings Demo implementation	As scheduled As scheduled
MEHRD	Cut operating cost of diesel-powered generators through RE application	Support the installation of energy system under component	PB Meetings	Quarterly
			Monitoring of component 3 for WNSS	Quarterly

Project stakeholder	Stakeholder Interest	Roles and responsibilities in implementation	Means of engagement in the project	Engagement schedule during implementation
		3 for the WNSS demonstration site through MEA		
MDPAC	Socio-economic development	Member of the Project Board	Project Board Meetings	Quarterly
MID	Infrastructure development	Technical Working Group	TWG Meetings	As planned
MRD	Socio-economic development	Technical Working Group	TWG Meetings	As planned
MCLT	EE and EC promotion	Support implementation	Implementation of component 2	Quarterly
MWYCA	Gender Mainstreaming and women economic empowerment	Support the implementation of the Gender Action Plan through MECDM and MMERE's Gender Focal Points	Project Board Meetings	Quarterly
			Implementation of component 4	Yearly
Malaita Provincial Government	Socio-economic development	Support implementation of project in Malaita Province	Reporting lines	Quarterly
Makira Provincial Government	Socio-economic development	Support implementation of project in Makira Province	Reporting lines	Quarterly
Solomon Power	Regulation, expansion of electricity distribution and sustainability of electricity distribution to urban peri-urban centres	Support implementation of component 1,2 and 4	Project Board Meetings	Quarterly
			Knowledge Management	As required
			Implementation of component 1 and 2	As required
			Implementation of component 4	As required
SINU Technology	Diploma training, Training of Trainers	Provide diploma and certificate training to end users of solar systems for	Project Board Meetings	Quarterly
			RE Certificate Training	Yearly
			Training of Trainers	One-off
			RE Diploma Training	Yearly
Super Fly	Distribution, design, installation and education of	Provide technical expertise in solar photovoltaic design, installation,	Project Board Meetings	Quarterly
			Implementation of component 4	Yearly

Project stakeholder	Stakeholder Interest	Roles and responsibilities in implementation	Means of engagement in the project	Engagement schedule during implementation
	end users on RE, EC, EE	diagnoses, maintenance and training	on gender-based training on solar	
			Implementation of component 2 promotion of EE, EC and RE	As required
			Implementation of component 3 for solar installation	As required
SINU Marine School	Community education in seafood value-added trainings	Capacity building in fisheries value-added products	Implementation of component 4	Quarterly
CUC/RESCO	Financial sustainability	Tariff collection	Implementation of component 3	Quarterly
SIWIBA	Livelihood trainings	Support capacity building	Implementation of livelihood activities	Quarterly
WARA	Financial literacy (savings)	Support capacity building	Implementation of livelihood activities	Quarterly
Donor Partners	project impacts, climate financing, networking	Build synergies across projects and expand on RE development in SI	Donor meetings	Yearly