



**PROJECT INITIATION PLAN
FOR A GEF PROJECT PREPARATION GRANT (PPG)**

Project Title: Facilitation of the Achievement of Sustainable National Energy Targets of Tuvalu (FASNETT)

Country: Tuvalu

Initiation Plan Start Date: 5 October 2015

Initiation Plan End Date: 30 September 2016

CPAP Programme Component: Environment & Energy
ATLAS Proposal #: 00091772 / 00096808
PIMS Project ID: 5613
Management Arrangement: DIM

Total budget: US\$ 100,000
Allocated resources:
• GEF US\$ 100,000
• Government in kind None
In-kind contributions: None

AGREED BY UNDP RESIDENT REPRESENTATIVE
Resident Representative Signature

Date: day/month/year

12/11/15

A. Brief Description of Initiation Plan:

The project initiation plan (PIP) outlines the activities that will be carried out to design and develop the GEF-approved concept, i.e., Project Information Form (PIF – see Annex 1) for the proposed UNDP-GEF project Facilitation of the Achievement of Sustainable National Energy Targets of Tuvalu (FASNETT). The PIP describes the project preparatory activities such as: (1) Conduct of research studies and surveys to gather information/data that are required to verify and confirm the earlier identified baseline projects on, and barriers to, the improved sustainable and cost-effective utilization of indigenous renewable energy (RE) resources for energy production and widespread application of energy efficiency (EE) technologies in Tuvalu; (2) Conduct of a logical framework analysis (LFA) mainly to verify and firm up the project planning matrix (PPM) or results framework (log frame) in the GEF-approved project concept (i.e., PIF); (3) Identification, assessment and selection of the various demonstrations showcasing the application of RE and EE technologies for: (a) supplanting fossil fuel-fired power generation and reduction of electricity demands; (b) achieving the set %RE electricity target of the country; and, (c) promoting community-based application EE and RE technologies, as well as integrated energy planning and policy implementation, including the design and implementation of energy-related aspects of low carbon development; (4) Detailed design of the project components and activities (includes evaluation and analyses of the results of, and data/information derived from, the studies and surveys conducted for use in the design of specific project activities; basic design of the demonstrations and pilots that will be implemented, estimation of potential energy savings and CO2 emission reduction, project activities budgeting, addressing the comments/recommendations raised by the GEF Secretariat, STAP and GEF Council on the PIF, etc.); (5) Conduct of stakeholder and project partner coordination meetings (e.g., demonstration hosts and co-financers), and establishment of the appropriate project implementation and management arrangements; (6) Preparation of the UNDP-GEF Project Document (ProDoc) and GEF CEO Endorsement Request (CER) Document based on the GEF-approved PIF; and, (7) Finalization of the ProDoc and CER Document. The final output of this PIP is the approved UNDP-GEF Project Document and GEF CEO Endorsement Request Document.

B. Project Preparation Activities:

Prior to the work on designing and developing the FASNETT project activities and the preparation of the required ProDoc and CER Doc, the project development team (PDT) has to be established. It is expected that the people who worked on the PIF development, i.e., mainly from the project implementing partner – Ministry of Works & Energy (Energy department) and the Tuvalu Electric Corporation (ED-MWE/TEC), will make up the PDT. The PDT will carry out the project preparation activities described below, in coordination with project stakeholders and with the assistance of the required experts listed in Annex 2 of this PIP Document.

1. Conduct of Studies and Surveys – This will involve the gathering, processing, and validation of data/information that are required to verify and confirm the earlier identified baseline projects on, and barriers to, increased cost-effective and reliable applications of RE technologies for power applications in Tuvalu's electricity sector, as well as RE (for non-power applications) and EE technologies in the country's energy end-use sectors (inclusive of those in the outer islands) (inclusive of those in the outer islands). The studies/surveys will be on previous, current, and planned scientific/technical, policy-related and economic development-related work in the country on the following:

- Initiatives (programs/projects/activities) of the Government of Tuvalu (GOT), local governments (i.e., outer islands local councils) and private sector in promoting and supporting the application of RE technologies for electricity and thermal energy purposes; and EE technologies for specific energy consumption (SEC) improvements (i.e., optimal energy consumption).
- Gaps in achieving the GOT's overall vision for the development and utilization of its renewable energy resources, in general, and achieving the country's aspiration to increase the share of RE electricity in the national electricity generation, in particular and the potential actions/measures to bridge such gaps.
- Nature and extent/magnitude of the barriers/problems, issues and constraints that are preventing the GOT, local councils and the private sector from promoting and supporting the widespread application of RE technologies/techniques for electricity production, and for productive and social uses, as well as the application and practice of EE.
- Initiatives of the GOT, local councils and the private sector in removing/minimizing the barriers/problems, issues and constraints to the widespread application of RE and EE technologies/techniques in the energy generation, and energy end-use sectors (inclusive of those in the outer islands) (inclusive of those in the outer islands) in TUVVALU.
- Opportunities for the GOT, local councils and the private sector in implementing actions and measures geared towards the widespread application of RE and EE technologies/techniques in the energy generation, and energy end-use sectors (inclusive of those in the outer islands) (inclusive of those in the outer islands) in Tuvalu.
- Nature and extent of barriers/problems, issues and constraints preventing the GOT, local councils and the private sector from making good and maximum use of opportunities for the widespread application of RE and EE technologies/techniques in the energy generation, and energy end-use sectors (inclusive of those in the outer islands) (inclusive of those in the outer islands) in Tuvalu.
- Initiatives of the GOT/local councils/private sector in removing/minimizing the barriers/problems, issues and constraints that are preventing them in making use of opportunities to promote and support the widespread application of RE and EE technologies/techniques in the energy generation, and energy end-use sectors (inclusive of those in the outer islands) in Tuvalu.
- Potential incremental actions/measures, which are applicable, feasible/usable and realistic to enhance the chances of achieving, or facilitate the achievement of, most of the major aspects of the GOT's vision regarding the development and utilization of the country's RE resources, application of EE technologies/techniques and achieving its set %RE electricity target.

The results of such studies/surveys will be used in confirming the following, which will be the bases of the project design:

- The business-as-usual (BAU) scenario on % RE electricity in the national electricity generation by 2020.
- The relevant enhancements to the baseline RE projects in the country such as: (1) features that are not covered by such projects; (2) additional features that can be done; and, (3) follow-up interventions to enhance the realization of EE&RE targets.
- The alternative scenario on % RE electricity in the national electricity generation by 2020 that can be facilitated or brought about by the proposed FASNETT project.

Other specific data/information that will be gathered; processed; and assessed as part of the studies/surveys that will be used in the project design include:

- General status of the attitude and outlook in the energy and energy end-use sectors (inclusive of those in the outer islands) regarding RE and EE technology applications in support of socio-economic development, and anticipated future RE & EE technology developments and applications in the country;
- Programs and policies (including laws/regulations) of the national and local government concerning the development and utilization of the country's RE resources (implemented, ongoing and planned);
- Plans and strategies of the private sector in promoting and supporting the wide-scale use of RE for electrical and thermal energy generation;
- Suppliers of RE and EE technology design and engineering services and RE and EE system hardware in Tuvalu, and in the Pacific region;
- Current installed and planned additional capacities of RE-based energy systems (electrical and thermal energy applications);
- Forecast total energy and electricity demand in Tuvalu (2020-2030);
- Current technical barriers/problems and constraints that are preventing the country in implementing RE Technology applications for power generation and thermal energy;
- Current and planned initiatives (e.g., projects) of the private sector in engaging in RE and EE business opportunities in Tuvalu;
- Applicable cost-effective RE-based power generation technologies that are feasible in Tuvalu, including technologies for enhancing the electricity system performance and reliability;
- Applicable technologies for enhancing electricity system stability, reliability and energy performance;
- Information on the characteristics of the various available RE resources in Tuvalu, including RE resource production;
- Available business model for sustainable RE resource production, processing and supply and pricing for fueling RE-based power generation systems;
- Other available data and information that are pertinent in the design of appropriate interventions to reduce if not eliminate the barriers to the cost-effective and reliable applications of RE in the energy generation and energy end-use sectors (inclusive of those in the outer islands) in Tuvalu; as well as those for removing barriers to the implementation of feasible EE technologies.

2. Conduct of Logical Framework Analysis (LFA) workshop – This workshop is for the purpose of verifying and firming up the project results framework, i.e., the project planning matrix (log frame) presented in the GEF-approved FASNETT PIF. This will be attended by the relevant stakeholders and partners of the proposed project whose inputs about the barriers/issues/concerns as well as opportunities, along with the data/information on these as gathered from the studies and surveys conducted, will be used in verifying and firming up the project: (a) objective; (b) outcomes that will contribute to the realization of the project objective; (c) outputs that have to be produced to contribute to the realization of the project outcomes; and, (d) baseline and incremental activities that will deliver the project outputs. The appropriate SMART indicators will be developed for the project objective, and for each project

outcome and for each project output. The corresponding baseline and target values, means of verification and critical assumption (if necessary) for each indicator will also be identified by consensus among the project stakeholders and partners. The project log frame will be finalized based on consensus among the project stakeholders and partners.

3. Identification and assessment of demonstrations that will be implemented in the project:

- a. For the application of the integrated energy planning techniques: – This will involve discussions with the ED/MWE on the following: (a) barriers/issues/concerns regarding the application of integrated energy planning (IEP) in their energy planning processes; (b) introduction and promotion of the proposed IEP pilot; and, (c) IEP capacity building.
- b. For the application of feasible community-based RE energy systems for productive uses and household energy needs – This will involve discussions with suitable local councils and interested private sector entities and the TEC on the following: (a) barriers/issues/concerns regarding the implementation of projects on power generation that make use of feasible RE resources that are locally available; (b) introduction and promotion of the proposed demonstrations; and, (c) potential communities in the outer islands where the RE-based power generation demonstrations will can be carried out.
- c. For the application of EE technologies selected energy-end use sectors - This will involve discussions with the suitable end-use sector entities to: (a) find out the barriers/issues/concerns regarding the application of EE technologies/techniques and EC&EE measures/practices; (b) introduce and promote the proposed demonstrations; and, (c) identify suitable public and private sector entities that are interested and willing to host the planned demonstration activities of the project.

A set of selection criteria will be developed for the purpose of selecting the demo hosts. This set of criteria will be used for the evaluation of the level of interest and capability of each potential demonstration host.

4. Detailed design of the project components and activities – Based on the finalized project log frame, and from the evaluation and analyses of the results of, and data/information derived from, the studies and surveys conducted for use in the design of specific project activities, the detailed design of the identified project activities will be carried out. The baseline activities can be retained as is, or can either be modified with additional/supplementary incremental activities or completely changed to fit the required interventions. The fully incremental activities are to be designed to remove identified barriers and for enhancing the realization of global environmental benefits (in terms of CO2 emissions reduction). Part of the design of the activities is the design of the demonstrations or pilots that will be included in the project. This will involve at least the basic engineering design in order to quantify the potential energy savings and direct GHG emissions that can be derived from the demonstrations. The preliminary basic engineering design of any replications of the demos/pilots that are anticipated will also be prepared. The schedule and budget of each identified project activity (baseline and incremental) and the demonstrations/pilots will also be determined, as well as the delineation of responsibilities (among the stakeholders and partners) in implementing the activity.

Part of the project preparation activities for the FASNETT project is addressing the comments and recommendations of the GEFSec, GEF Council, and that of the STAP, i.e., the Scientific and Technical Screening Report for this project. These comments and recommendations will be

adequately addressed and considered in the design of the relevant project activities. All pertinent and applicable specific scientific/technical challenges or omissions/opportunities that are recommended to be addressed will be done in the detailed design of the project activities.

The PDT shall also address the specific recommendations that were provided in the Environmental and Social Screening of the project particularly on the: (1) detailed assessment of the identified potential environmental risks will be carried out together with the project proponent (ED-MWE/TEC), and other project partners; (2) assessment of the exact requirements for ensuring the environment-friendly and cost-effective processing of RE resources, e.g., pig waste, for energy use; (3) coordination with the project partners in coming up with the appropriate approach of designing the demonstration/pilot activities of the project to ensure negative environmental impacts; (4) assessment to determine if further environmental (and if necessary social) review and management is required for the demonstrations that will be carried out under the proposed project; and, (5) alignment of the project with UNDP's environmental and social policies.

A detailed multi-year budget will also be prepared following the standard template provided in the UNDP-GEF project document template that reflects the mandatory requirements of the GEF Monitoring and Evaluation (M&E) Policy. Based on the agreed project planning matrix (log frame), a M&E plan will be developed showing the delineation of responsibility, estimated budget, schedule and frequency of the conduct of each M&E activity. Also, based on the project log frame, an Annual Targets table shall be prepared. Part of this M&E task is the preparation of the GEF CCM Tracking Tool for the project. Lastly, a sustainability plan that will outline the principles and guidelines for ensuring the long-term sustainability of project achievements will be prepared. Such plan will also outline an exit strategy, seeking the continuation of key activities/achievements without the need of long-term international financing.

5. Conduct of stakeholder and project partner coordination meetings (e.g., demonstration hosts and co-financers), and establishment of the appropriate project implementation and management arrangements - Stakeholder consultations will be carried out in identifying partners that are currently doing or planning to do activities that are similar or complementary to what the proposed project is going to implement. This consultation to mobilize and engage stakeholders, and negotiate partnerships with them to align their activities and the project to build synergies. Part of the objective of these consultations is to define the project implementation and management arrangements. Together with the stakeholders, the organizational structure governing the project will be decided. This will include identification of the members that will make up the project board. Following up on the LFA exercise, consultations with the project stakeholders, project partners, project implementing partner and other key agencies in the development of the project strategy, will be conducted to ensure a strong national ownership. Such consultations are also for the purpose of: (a) securing agreement(s) on project implementation arrangements including roles, responsibilities, and accountabilities of lead and partner agencies. Document these consultations; (b) exploring multilateral and bilateral co-financing opportunities; and, (c) ensuring a coherent and sustainable financing package for the project including post-GEF grant phase. Lastly, this project preparation activity should also ensure the securing of the required co-financing letters from participating government institutions, bilateral development partners, multilateral development partners, private sector entities and NGOs who wish to provide cash or in kind contributions to the project.

6. Preparation of the UNDP-GEF Project Document (ProDoc) and GEF CEO Endorsement Request (CER) Document based on the GEF-approved project concept, i.e., GEF-approved PIF (Annex 1) – The project document will be prepared using the official UNDP-GEF project document (ProDoc) template and should follow strictly the guidelines for each of the sections of the ProDoc. Specifically, in the section: Project Goal, Objective, Outcomes and Output/Activities, the description of the activities should be on the “how” aspect, i.e., the process or procedures to be carried out to deliver the relevant output from each activity. The CEO Endorsement Request (CER) Document will also be prepared using the official GEF CER Document template. The contents of the CER document should be consistent with that in the ProDoc, and should among others include the detailed description of actions taken in response to the STAP’s comments and recommended actions. As mentioned earlier, the relevant comments and recommendations from the GEFSec, GEF Council members and the STAP shall be adequately addressed and considered in the preparation of these 2 documents. After the technical review of these 2 documents, the UNDP-GEF technically cleared ProDoc and CER document will be submitted to the GEFSec along with the co-financing letters. Work in this activity also includes responding to comments/questions raised by the GEFSec on the ProDoc and CER Document.
7. Finalization of the ProDoc and CER Document – Once the GEFSec technically clear the responses to their comments/questions, the ProDoc and CER Document are finalized and resubmitted to the GEFSec.

C. Project Preparation Activities Work Plan, Timeframe, Responsibilities and Budget:

PPG Activity	Timeframe (in months) ¹												Responsibility	Budget US\$
	1	2	3	4	5	6	7	8	9	10	11	12		
Activity 1													Experts	30,000
Activity 2													PMO, Experts	10,000
Activity 3													Experts	10,000
Activity 4													Experts	20,000
Activity 5													PMO, Experts	10,000
Activity 6													PMO, Expert	17,500
Activity 7													PMO, Expert	2,500

D. Total Budget and Work Plan:

Award ID:	
Award Title:	Facilitation of the Achievement of Sustainable National Energy Targets of Tuvalu (FASNETT)
Business Unit:	
Project Title:	Facilitation of the Achievement of Sustainable National Energy Targets of Tuvalu (FASNETT)
Project ID:	
Implementing Partner	Energy Department - Ministry of Works and Energy (ED-MWE); Tuvalu Electricity Corporation (TEC)

GEF Outcome/Atlas Activity	Responsible Party/	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount US\$
Project preparation grant to finalize the UNDP-GEF project document for project: Facilitation of the Achievement of Sustainable National Energy Targets of Tuvalu (FASNETT)	UNDP	62000	GEF TRUSTEE	71200	International Consultants	60,000
				71300	Local Consultants	0
				71600	Travel	10,000
				72100	Sub-contract	10,000
				74500	Miscellaneous Expenses	10,000
				75700	LFA Workshop	10,000
					PROJECT TOTAL	100,000

¹ If an FSP project please add additional six months noting 18 month deadline between GEF approval of the PIF and GEF CEO endorsement of the project document

Annex 1: GEF CEO PIF Approval Letter



GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Naoko Ishii
CEO and Chairperson

September 14, 2015

Ms. Adriana Dinu
GEF Executive Coordinator
United Nations Development Programme
One United Nations Plaza
304 East 45th St.
FF Bldg., 10th floor
New York, NY 10017

Dear Ms. Dinu:

I am pleased to inform you that I have cleared the project concept detailed below for inclusion in the upcoming work program. I have also approved your request for project preparation grant.

Decision Sought:	Project Identification Form (PIF) Clearance for Work Program Inclusion and Project Preparation Grant (PPG) Approval		
GEFSEC ID:	9220		
Agency(ies):	UNDP		
Agency ID:	5613 (UNDP)		
Focal Area:	Climate Change		
Project Type:	Full Size Project		
Country(ies):	Tuvalu		
Name of Project:	Facilitation of the Achievement of Sustainable National Energy Targets of Tuvalu (FASNETT)		
Indicative GEF Project Grant:	\$2,639,725		
Indicative Agency Fee:	\$250,774		
PPG Grant:	\$100,000		
PPG Agency Fee:	\$9,500		
Funding Source:	GEF Trust Fund		

Break-down of Indicative Agency Fee				
Agency	Trust Fund	40% Fees to be committed at Council Approval	Fees to be committed at CEO Endorsement	Total (US\$)
UNDP	GET	\$100,310	\$150,464	\$250,774

This PIF clearance and PPG approval is subject to the comments made by the GEF Secretariat in the attached project review document. It is also based on the understanding that the project is in conformity with

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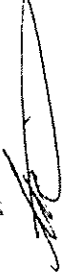
Ms. Adriana Dinu

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April 01, 2014

Please submit your final project document for my endorsement no later than 18 months after Council approval of the work program.

Sincerely,



Naoko Ishii
Chief Executive Officer and Chairperson

Attachment: GEFSEC Project Review Document
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee

GEF ID: \$728 - Accelerating the Development and Commercialization of Fuel Cell Vehicles in China

Annex 2: Summary of Consultants Financed by the Initiation Plan

Expertise Required	Indicative Tasks
<p>Energy Policy and Regulatory Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Conduct of both literature and actual survey of available RE resources, and RE resource consumption trends in Tuvalu; ▪ Forecasting of demand and consumption trends of energy, in general, and renewable energy, in particular in Tuvalu; ▪ Research on plans/programs and policies on renewable energy development and utilization in other countries with similar circumstances as Tuvalu, i.e., atoll country ▪ Assessment of programs, laws/regulations and policies (particularly the Tuvalu National Energy Policy or TNEP) of the country concerning the development and utilization of the country's RE resources (implemented, ongoing and planned). ▪ Identification and evaluation of the general status of the attitude and outlook in Tuvalu's energy generation and energy end-use sectors (inclusive of those in the outer islands) regarding RE and EE technology applications in support of socio-economic development, and anticipated future RE technology developments and applications. ▪ Identification and evaluation of identified policy/regulatory and institutional barriers to the design, development, financing and implementation of RE technology projects for power and non-power applications, as well as barriers to current/future opportunities for the implementation of RE and EE projects by the private sector; ▪ Recommendation of potential solutions and how to implement such solutions to the identified policy/regulatory and institutional barriers; ▪ Assessment of low carbon (LC) development and implementation mechanisms compatible to the Tuvaluan context, and recommendations for the development of guides and reference documents on LC development planning, design and implementation; ▪ Recommendations for LC development standards, policies and implementing rules and regulations (IRRs) on the promotion and incorporation of EE & RE applications in development planning and implementation for inclusion in the TNEP; ▪ Recommendations on policies on sustainable energy supply and utilization services for inclusion in the TNEP; ▪ Recommendations on the promotion of the LC development standards, policies, and IRRs; and the budget for the promotion activities; ▪ Design of project activities leading to the following: <ul style="list-style-type: none"> ○ Revision of the TNEP that include LC development policies and strategies; ○ Lobbying work for the approval and enforcement of LC development standards, policies, incentive schemes, and IRRs; and, ○ Advocacy work on the approval of the revised TNEP by the GOT. ○ Development of a plan for the evaluation of the impacts LC development planning and strategies; <p>▪ Assessment of applicable institutional mechanisms for the effective</p>

	<p>implementation of LC development standards, policies, incentive schemes, and IRRs, including strategies and initiatives;</p> <ul style="list-style-type: none"> ▪ Formulated and recommended institutional framework for the implementation of LC development standards, policies, and IRRs, including institutional mechanisms that integrate LC development with the socio-economic, climate change and disaster management objectives of the country; ▪ Whenever possible and feasible, participate in the LFA exercise of the FASNETT project; ▪ Design of a monitoring system for tracking the implementation progress and impacts of RE & EE policies and regulations; ▪ Estimation of potential energy savings and CO2 emission reductions (using the GEF prescribed estimation procedures) from the application of EE technologies and RE-based energy systems as facilitated by the support policies and regulatory framework; and, ▪ Provision of technical assistance in adequately and satisfactorily addressing and responding to the relevant comments raised by GEFSec, GEF Council and STAP on issues pertaining to policies and regulations that are supportive of the promotion EE and RE-based energy systems for power and non-power applications.
<p>Renewable Energy Technology Application Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Conduct of research and provision of technical advice and the relevant data/information needed for the following: <ul style="list-style-type: none"> ○ Assessment of the current status of RE development and utilization; the current share of RE-based electricity; the most realistic level of contribution of RE electricity in the national power generation by 2020; ○ Assessment of the comparative features of installed and planned RE-based energy systems in Tuvalu; ○ Evaluation of potential innovation approaches for enhancing the share of RE-based electricity in the national power generation; and, ○ Estimation of the potential fossil fuel savings and GHG emission reductions from the increased utilization of RE resources in energy generation (power and non-power applications). ▪ Identification and analysis of barriers to the implementation of RE-based energy systems (power and non-power applications), as well as barriers to current/future opportunities for investments in RE technology applications for productive and social uses; ▪ Recommendation of potential solutions and how to implement such solutions to the identified barriers, including budget needed; ▪ Whenever possible and feasible, participate in the LFA exercise of the FASNETT project; ▪ Assessment of potential improvements in the current applications of RE technologies in power and non-power applications in Tuvalu; ▪ Assessment of the feasibility and implementation of the RE technology applications for energy generation, in general, and power generation, in particular; ▪ Design of a national program for the promotion of RE technology applications as feasible investment options in the electricity and energy end-use sectors (inclusive of those in the outer islands) in Tuvalu; including recommendations

	<p>for feasible information dissemination systems on RE technologies to be developed under the project;</p> <ul style="list-style-type: none"> ▪ Design project activities leading to the introduction of business models for sustainable RE resource production, processing and supply and pricing for RE-based power generation systems; ▪ Conduct an assessment on the establishment of a sustainable RE resource (e.g., biomass) supply industry in Tuvalu; ▪ Conduct of research and provision of other available data and information that are pertinent in the design of appropriate interventions to reduce if not eliminate the barriers to the cost-effective and reliable applications of renewable energy in the energy generation and energy end-use sectors (inclusive of those in the outer islands). ▪ Assessment on the feasibility of the establishment and operation of a local RET supply and service provision industry in Tuvalu; ▪ Design of project activities leading to the establishment of businesses (productive and social services) that make use of electricity supplied from RE-based power systems; ▪ Assist in the design of feasible RE technology application demonstrations to be implemented under the project; ▪ Estimation of potential energy savings and CO2 emission reductions (using the GEF prescribed estimation procedures) from the RE-based energy systems demonstrations; ▪ Assist in the design and implementation plans for the replication of demonstrated RE technology application projects, including those that would be considered as among the Nationally Appropriate Mitigation Actions (NAMAs) of the country; and, ▪ Provision of assistance in adequately and satisfactorily addressing and responding to the relevant comments raised by GEFSec, GEF Council and STAP on issues pertaining to the applications of feasible RE technology interventions that will be incorporated in the proposed project.
<p>RE-based Power Generation Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Conduct of research and provision of technical advice and the relevant data/information needed for the following: <ul style="list-style-type: none"> ○ Determination of the feasible technology(ies) for RE-based power generation that is/are applicable in Tuvalu; ○ Evaluation of possible applicable innovation approaches for improving the performance and effectiveness of existing RE-based power generation in other countries that can be applied in Tuvalu; and, ○ Estimation of the potential energy savings in the application of new (or not widely implemented) RE technologies for power and non-power applications. ▪ Assessment of capacity development needs in the electricity sector in RE technology applications in power generation, as well as barriers to current/future opportunities for investments in RE-based power generation in Tuvalu; ▪ Conduct of a research study on RE-based power generation system component suppliers in Tuvalu (and in the Pacific region), and analyze their product features, cost and performance;

	<ul style="list-style-type: none"> ▪ Conduct of a research study on RE-based power generation system design and engineering service providers in Tuvalu (and in the Pacific region), and analyze their qualifications and capabilities; ▪ Identification of barriers to the implementation of RE technology applications in the electricity sector, as well as in the energy end-use sectors (inclusive of those in the outer islands), as well as barriers to current/future opportunities for investments in these technologies in Tuvalu; ▪ Recommendation of potential solutions and how to implement such solutions to the identified barriers, including budget needed; ▪ Whenever possible and feasible, participate in the LFA exercise of the FASNETT project; ▪ Recommendations for the design of a capacity development program on RE-based power generation (design, planning, engineering, financing, installation, operation and maintenance) for TEC, ED/MWE and relevant project partners; ▪ Design of project activities leading to the development and implementation of capacity development and promotion program for private sector (local and foreign) entities to invest in RE-based power generation in Tuvalu; ▪ Identification and assistance in the design of RE-based power generation technology application demonstrations to be implemented under the project; ▪ Estimation of potential energy savings and CO2 emission reductions (using the GEF prescribed estimation procedures) from the RE-based power generation demonstrations; and, ▪ Provision of assistance and technical advice in adequately and satisfactorily addressing and responding to the relevant comments raised by GEFSec, GEF Council and STAP on issues pertaining to RE-based power generation technology interventions that will be incorporated in the proposed project.
<p>Energy Systems Project Financing Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Assessment of identified market and financing barriers to the implementation of EE and RE technology applications, in general, and RE-based power generation projects , in particular, as well as barriers to current/future opportunities for market transformation and access to financing for EE and RE projects that would contribute to the realization of the %RE electricity targets of Tuvalu; ▪ Recommendation of potential solutions and how to implement such solutions to the identified market and financial barriers, including budget needed; ▪ Assessment of the financial feasibility of the application of: <ul style="list-style-type: none"> ○ EE technologies in the energy end-use sectors (inclusive of those in the outer islands) in Tuvalu; as well as the financial feasibility of the different EE technology application demonstrations under the project; ○ RE technologies for power and non-power applications (including productive and social uses of RE) in Tuvalu; as well as the financial feasibility of the different RE technology application demonstrations under the project; ▪ Assessment of current and potential sources of financing for EE and RE technology projects in Tuvalu; ▪ Assessment of potential financing schemes that can be developed and implemented under the project for supporting EE and RE technology application projects;

	<ul style="list-style-type: none"> ▪ Design of project activities leading to the design and development of feasible financing models and schemes to be promoted in the project, which will facilitate financing of EE (e.g., demand side management or DSM) and non-power RE application projects; ▪ Design of capacity building program for the existing local banks (including Tuvalu Ministry of Finance) on financing EE and RE projects (including those on the productive and social uses of RE electricity); ▪ Design of project activities that will involve the provision of technical assistance services to financing scheme applicants; ▪ Recommendation of design of the financing scheme for EE and RE projects, as well as for the productive and social uses of RE electricity in rural communities that will be promoted and facilitated under the project; ▪ Recommendation of potential EE and RE technology application projects that can be financed either through government financing schemes; or by private sector investments; ▪ Estimation of potential energy savings and CO2 emission reductions (using the GEF prescribed estimation procedures) from the projects on the application of EE and RE technologies that are supported by financing schemes; ▪ Assessment of potential enhanced financing policies for supporting EE and RE technology applications; and, ▪ Provision of technical assistance in adequately and satisfactorily addressing and responding to the relevant comments raised by GEFSec, GEF Council and STAP on issues pertaining to the financing of RE technology application projects and enhancement of the RE market in TUVALU.
<p>Energy Efficiency Technology Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Conduct of research and provision of technical advice and the relevant data/information needed for the following: <ul style="list-style-type: none"> ○ Assessment of the EE technologies/techniques and practices employed in the various energy end-use sectors (inclusive of those in the outer islands), mainly the residential sector in Tuvalu; ○ Assessment of the availability and capabilities of EE technology service providers in Tuvalu; and, ○ Assessment of the current energy performance of the energy end use sectors (in Funafuti and selected outer islands) and the EC&EE measures that are being implemented in them; ○ Assessment of the comparative features of energy systems in the energy end-use sectors (inclusive of those in the outer islands) in Tuvalu; ○ Evaluation of potential innovation approaches for improving the approaches employed in the energy end-use sectors (inclusive of those in the outer islands); and, ○ Estimation of the potential energy savings in the enhanced application of EE technologies/techniques and EC&EE practices in each energy end-use sector ▪ Identification of barriers to the implementation of EC&EE technology applications in energy end-use sectors (inclusive of those in the outer islands), as well as barriers to current/future opportunities for improving the energy performance of these energy consuming sectors; ▪ Recommendation of potential solutions and how to implement such solutions to the identified barriers, including budget needed;

	<ul style="list-style-type: none"> ▪ Whenever possible and feasible, participate in the LFA exercise of the FASNETT project; ▪ Assessment of identified technology, capacity development and information-related barriers to EC&EE technology applications in the energy end-use sectors (inclusive of those in the outer islands), as well as barriers to current/future opportunities for improving the specific energy consumption in each of these sectors; ▪ Assessment of potential improvements in the applications of EC&EE in the energy end-use sectors (inclusive of those in the outer islands) in Tuvalu; ▪ Assessment of the feasibility of the establishment of an EE business industry in Tuvalu, particularly EE technology service provision and energy saving company (ESCO) industry; ▪ Design of a national program for the promotion of EC&EE technologies as a priority investment option in the energy end-use sectors (inclusive of those in the outer islands); ▪ Recommendations for feasible information dissemination systems on EC&EE technologies to be developed under the project; ▪ Design of activities (including budget) for the establishment and implementation of a national energy supply and consumption monitoring and reporting system; ▪ Advise in the design of feasible EC&EE (and RE) techniques demonstrations to be implemented under the project; ▪ Estimation of potential energy savings and CO2 emission reductions (using the GEF prescribed estimation procedures) from the EE technologies application demonstrations; ▪ Advise in the design and implementation plans for the replication of demonstrated EE technology application projects, including those that would be considered as among the Nationally Appropriate Mitigation Actions (NAMAs) of the country; and, ▪ Provision of technical advice in adequately and satisfactorily addressing and responding to the relevant comments raised by GEFSec, GEF Council and STAP on issues pertaining to the applications of feasible EC&EE (and RE) technology interventions that will be incorporated in the proposed project.
<p>Electric Power Systems Design Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Conduct of research and provision of technical advice and the relevant data/information needed for the following: <ul style="list-style-type: none"> ○ Assessment of the current performance of existing power system (off-grid and on-grid) infrastructures in Tuvalu, focusing on areas that impacts on the stability and reliability of the system; ○ Assessment of potential improvements stability, reliability and performance of existing on-grid and off-grid power systems in the country; ○ Assessment of the feasibility and implementation of the application of technologies for improving power systems stability, reliability and performance in the country; ○ Design of a program for the promotion improving power systems stability, reliability and performance, considering short- and medium term integration of additional RE-based power generation system; ○ Estimation of potential energy and energy cost savings that can be realized

	<p>(e.g., minimized distribution losses); and,</p> <ul style="list-style-type: none"> o Design of feasible power system monitoring and maintenance program. ▪ Conduct of a survey of the existing power grid infrastructures in Tuvalu, taking note of their general features and installed controls and maintenance systems, as well as the standard operating procedures/practices; ▪ Identification and analysis of barriers to the implementation of proven and applicable technologies for improving the stability, reliability and performance of off-grid and on-grid power systems, as well as barriers to current/future opportunities for investments in power systems that comprise of various RE-based power generation systems; ▪ Recommendation of potential solutions and how to implement such solutions to the identified barriers, including budget needed; ▪ Design of project activities leading to the development of technology replication plans for minimizing/abating potential system instability in the other grid systems in the country. ▪ Design of capacity building programs for PPL personnel in the optimum load dispatch of system power generation units for achieving overall least generation cost. ▪ Identification and assistance in the design of demonstrations of the application of feasible power grid system improvements (performance, stability and reliability) as well as monitoring and control systems; and, ▪ Provision of assistance and technical advice in adequately and satisfactorily addressing and responding to the relevant comments raised by GEFSec, GEF Council and STAP on issues pertaining to power grid system performance interventions that will be incorporated in the proposed project.
<p>Energy Technology Capacity Development Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Assessment of the capacity needs in the country in the area of EE technology and RE technology applications for power and non-power purposes, including impact analysis of previous EE/RE capacity building programs in Tuvalu; ▪ Design of promotional workshops to disseminate information on sustainable EE and RE technology applications in communities, and to enhance awareness and knowledge on the productive and social uses of RE electricity; ▪ Design of project activities leading to the development of EE/RE capacity building programs for key stakeholder groups in the country such as: (a) Government authorities/technical personnel; (b) Local engineering service providers; (c) Electricity sector; and, (d) Energy end-users, including those in the outer Islands; ▪ Design of project activities leading to the development of capacity development program for national and local government authorities on the planning and utilization of sustainable RE resources and EE techniques and practices in support of socio-economic development of Tuvaluan communities; ▪ Design of evaluation program for the assessing the impacts of the promotion and capacity building on RE-based system design, engineering, financing, construction, operation and maintenance; ▪ Assessment of the feasibility of establishing an information network for the promotion and dissemination of knowledge in the planning, operation, maintenance, cost-effective and reliable system performance of RE power generation systems;

	<ul style="list-style-type: none"> ▪ Design of the project activities leading to the development of a RE resource supply and consumption monitoring and reporting system for Tuvalu. ▪ Provision of assistance and technical advice in adequately and satisfactorily addressing and responding to the relevant comments raised by GEFSec, GEF Council and STAP on issues pertaining to EE and RE capacity development interventions that will be incorporated in the proposed project.
<p>CCM Project Development and Management Expert (IC)</p>	<ul style="list-style-type: none"> ▪ Lead the implementation of the design, development and preparation activities (i.e., PPG Exercise) for the FASNETT Project; ▪ Facilitation of the LFA workshop, and preparation of the LFA workshop proceedings report; ▪ Review of the project framework in the GEF-approved PIF (project outcomes and outputs, as well as success indicators and targets, means of verification and assumptions/risks); ▪ Coordination of the tasks to be implemented by individual experts that will be engaged in the design and development of the FASNETT Project; ▪ Carry out detailed analysis of cost-effectiveness of the project, and preparation of the FASNETT project budget; ▪ Consolidation of verified estimated energy savings and associated GHG emission reductions (direct by EOP, lifetime direct and indirect) from the various experts into the prescribed GEF-6 CCM Tracking Tool. ▪ Preparation of the draft and finalized versions of the Project Document and the CEO Endorsement Request (CER) Document; ▪ Coordinate and/or carry out, the responding to the GEFSec and GEF Council comments on the Project Document and CER Document; and, ▪ Preparation of the finalized versions of the Project Document, CER Document, and Tracking tool.