



UNDP Project Document

**Governments of the Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua
New Guinea, Samoa, Solomon Island, Tonga, Tuvalu and Vanuatu
United Nations Development Programme
Secretariat of the Pacific Regional Environment Programme**

Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)

The global environment and development goal of PIGGAREP is the reduction of the growth rate of GHG emissions from fossil fuel use in the Pacific Island Countries (PICs) through the removal of the barriers to the widespread and cost effective use of feasible renewable energy (RE) technologies. The specific objective of the project is the promotion of the productive use of RE to reduce GHG emission by removing the major barriers to the widespread and cost-effective use of commercially viable RE technologies (RETs). PIGGAREP consists of various activities whose outputs will contribute to the removal of the major barriers to the widespread utilization of RE technologies (RETs). The project is expected to bring about in the PICs: (1) Increased number of successful commercial RE applications; (2) Expanded market for RET applications; (3) Enhanced institutional capacity to design, implement and monitor RE projects; (4) Availability and accessibility of financing to existing and new RE projects; (5) Strengthened legal and regulatory structures in the energy and environmental sectors; and, (6) Increased awareness and knowledge on RE and RETs among key stakeholders.

Table of Contents

Section	Page
Acronyms	3
I. Elaboration on the Narrative	5
Part I: Situation Analysis	5
Part II: Strategy	9
Part III: Management Arrangements	20
Part IV: Monitoring and Evaluation Plan and Budget	23
Part V: Legal Context	33
II. Strategic Results Framework and GEF increment	35
Part 1: Incremental Cost Analysis	43
Part 2: Logical Framework Analysis	47
III. Total Budget and Work Plan	51
Part 1: TWP under GEF Financing	51
Part 2: TWP under Co Financing	54
IV. Additional Information	57
Part I: Other Agreements	57
Part II: Organigram of Project Implementation	58
Part III: Terms of Reference for key project staff and main sub-contracts	59
Part IV: Stakeholder Involvement Plan	75
Part V: Other additional information	78
Annex 1: CO2 Emissions Reduction Estimates	78
Annex 2: Responses to GEF Council Comments (France)	81
Annex 3: Responses to GEF Council Comments (USA)	92
Annex 4: Project Brief (PB)	94
Signature Page	95

Abbreviations and Acronyms

AOSIS	Alliance of Small Islands States
BPoA	Barbados Programme of Action
BAU	Business-as-Usual
BOS	Balance of system
CC	Climate Change
CDM	Clean Development Mechanism
CO2	Carbon Dioxide
COP	Conference of the Parties
CROP	Council of Regional Organizations in the Pacific
CTA	Chief Technical Advisor (PIREP)
EWG	Energy Working Group
EU	European Union
EUEI	EU Energy Initiative for Poverty Eradication and Sustainable Development
GEF	Global Environmental Facility
GHG	Greenhouse Gases
IP	Implementing Partner
IW	Inception Workshop
JPoI	Johannesburg Plan of Implementation
JREC	Johannesburg Renewable Energy Coalition
kWh	kilowatt hour
LFA	Log Frame Analysis
MDGs	Millennium Development Goals
MEAs	Multinational Environmental Agreements
M & E	Monitoring and Evaluation
MoA	Memorandum of Agreement
MoV	Means of Verification
MSc	Master of Science
MSP	Medium Size Project
MW	Mega Watt
NE	National Experts
NEX	National Execution
NGO	Non-governmental organization
NPC	National Project Coordinator
OVI	Objectively Verifiable Indicators
O&M	Operation and Maintenance
PAC	Project Advisory Committee
PB	Project Brief
PEIN	Pacific Environment Information Network (European Union/SPREP)
PESTRAN	Promotion of Environmentally Sustainable Transportation in the Pacific Islands
PM	Project Manager
PIC	Pacific Island Country
PICCAP	Pacific Island Climate Change Assistance Programme (GEF/UNDP/SPREP)
PIEP	Pacific Islands Energy Policy
PIEPSAP	Pacific Island Energy Policies and Strategic Action Planning (Danish Government/UNDP/SOPAC)
PIESAP	Pacific Islands Energy Strategic Action Plan
PIFRAC	Pacific Islands Framework for Action on Climate Change

PIGCOS	Pacific Islands Global Climate Observation System
PIGGAREP	Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project
PIR	Project Implementation Review
PIREP	Pacific Islands Renewable Energy Project (GEF/UNDP/SPREP)
PMO	Project Management Office
PNC	PIGGAREP National Coordinator
PNG	Papua New Guinea
PPA	Pacific Power Association or Power Purchase Agreement
POM	Project Operational Manual
ProDoc	Project Document
PV	Photovoltaic
RCU	Regional Coordination Unit
RESCO	Renewable Energy Service Company
RE	Renewable Energy
RMI	Republic of the Marshall Islands
RIE	Regional and International Experts
RETs	Renewable Energy Technologies
RREF	Regional Renewable Energy Fund
RTA	Regional Technical Advisor (UNDP-GEF RCU)
SC POPs	Stockholm Convention on Persistent Organic Pollutants
SEDREA	Sustainable Energy Development through Renewable Energy Applications (Palau)
SIDS	Small Island Developing States
SOPAC	South Pacific Applied Geoscience Commission
SP	Strategic Priority
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environmental Programme
STAP	Scientific and Technical Advisory Panel
TPR	Tripartite Review
TS	Task Specialist
TTR	Terminal Tripartite Review
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UN CSD	United Nations Commission on Sustainable Development
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
UNDP CO	United Nations Development Programme Country Office
UNDP RCB	United Nations Development Programme Regional Centre in Bangkok
USP	University of the South Pacific

SECTION I: ELABORATION OF THE NARRATIVE

PART I: SITUATION ANALYSIS

CONTEXT AND GLOBAL SIGNIFICANCE

1. The Pacific Island Countries (PICs) are currently heavily dependent on fossil fuels, with petroleum accounting for an estimated 90% of the commercial energy consumption. Petroleum consumption is largely responsible for the Greenhouse Gases (GHG) emission in the PICs. A regional synthesis of the PICs GHG inventories from their first National Communication under the United Nations Framework Convention on Climate Change (UNFCCC) highlighted that the GHG emission per capita in the PICs is almost 25% of the global Carbon Dioxide (CO₂) emissions per capita arising from fossil fuel combustion. Most of the GHG emissions in the PICs are from the combustion of fossil fuels for power generation and in transportation. Power generation is only from fossil fuel in most of the PICs and the transport sector utilizes 100% fossil fuel.
2. The impacts of the extreme weather events attributable to climate change are one of the greatest challenges to the sustainable development of the PICs in the 21st century. PICs are among the most vulnerable regions and it is crucial to urgently adapt to the known and potential impacts of climate change, climate variability and sea level rise. Similarly, PICs must urgently join the world community in adopting concrete measures, which will not only reduce the long-term growth in GHG emissions but also at the same time support their sustainable development effort.
3. Over the last decade, the PICs have continually urged the international community to reduce GHG emissions. They have highlighted the importance that Forum members place on domestic actions to reduce emissions. The PICs, however, remain seriously concerned that global emissions of GHG continue to grow and that their own emissions per capita, despite their size and level of development, is about 25% of the global CO₂ emission arising from fossil fuel combustion. The Pacific Island Leaders' Forum meetings have consistently advocated taking measures to address the problems of global warming and sea level rise. The Leaders also have continuously called for the adoption of concrete measures to develop and utilize renewable energy (RE) technologies as one of the effective means of addressing these problems.
4. The PICs are at varying stages of developing their energy sectors. The rate of electrification ranges from 10-100% but on average about 70% of the people in the PICs still do not have access to electricity. The share of RE in the power generation mix ranges from 0% in most PICs to more than 50% in a few. Petroleum import is equivalent to about 20% of the total exports of a few to more than 40% in most. Power utilities are at varying stages of transformation with some undergoing either corporatization, privatization or still maintaining their government-owned entities. Energy planning, policy formulation and rural RE electrification are the responsibilities of Energy Offices with varying extents of legislative authority, human capacity and financial support. On the other hand, the existence of national energy policies varies from "adopted but not enforced" to varying stages of drafts. At the regional level, the Council of Regional Organizations in the Pacific - Energy Working Group (CROP EWG) has finalized the Pacific Islands Energy Policy (PIEP). The PIEP and the associated Pacific Island Energy Strategic Action Plan (PIESAP) highlight the priority that the region places on utilising commercially

viable RE technologies (RETs) for mitigating GHG emission. Outcomes and activities of the PIGGAREP are contained in these two very important Pacific regional documents.

Barriers to RE Development in the PICs

- RE technologies have been known (e.g., solar PV, wind energy, hydro energy) in the region for more than three decades, however, there has not been a comprehensive regional effort to promote them for mitigating GHG emissions. Although a number of small-scale RE-based electrification and energy efficiency projects has been carried out in the PICs over the last two decades, overall their impacts have been minimal vis-à-vis GHG reductions. The studies carried out under the preparatory phase of PIGGAREP, i.e., the Pacific Islands Renewable Energy Project (PIREP), have documented that utilising feasible RETs for mitigating GHG emissions has been hindered/constrained by many barriers. These barriers were reconfirmed during a regional logical framework analysis (LFA) workshop for PIGGAREP that was conducted under PIREP in July 2004 and attended by the PIC representatives and key regional project stakeholders. Such an analysis not only identified and verified the various barriers/issues/concerns in the area of RE development and utilization in the PICs, but also established their interrelationship (cause-effect relationship)¹. Having done that, the activities that were identified, the achievement of which contributes to the realization of the defined outputs and outcomes of the project, are integrated. The severity of the barriers in each PIC varies due to the marked differences in the socio-economic, physical and political environment of each country and as well does the available local capacity to address the barriers. The LFA that was carried out during the project development stage established that all the barriers are important, interrelated and intertwined and must be dealt with in a comprehensive manner. The common barriers on RE development and renewable energy technologies (RET) applications among the PICs are summarized as follows:

Type	Barriers
Fiscal & Financial	Absence of sustainable capital fund for RE development
	Local investors are not confident on RE application projects
	Biased fiscal policies
Institutional	Inadequate capacity to address the challenges of climate change, including the design and implementation of RE projects
	Ineffective coordination among stakeholders
Knowledge, awareness and information	PICs lack qualified nationals in the area of RE applications
	Inadequate national public awareness campaigns
	Inadequate dissemination of information on best practices and success stories
	Lack of knowledge about the RE resource potentials in the PICs
	People in rural areas (and in some cases, urban/peri-urban areas) in the PICs lack knowledge about climate change
Legislative, regulatory and policy	Climate Change and Energy Legislations and Policies are either not in place or ineffective.
Market	Lack of private sector involvement in RE service delivery
	High costs of delivering RE services

¹ This interrelationship is reflected in what is called a Problem Tree. The defined objectives (goal, purpose, outcomes, outputs and activities) are derived from an objectives analysis (Objective Tree), which is based on the Problem Tree.

Type	Barriers
Technical	Lack of sustainable RE-based energy system installations on the ground
	Absence of guidelines on RE technical specifications suitable for the PICs

6. GHG mitigation in the PICs at governmental level involves the cooperative effort of the country's Departments of Environment, Energy Offices and National Planning offices among others. Both the Environment and Energy officials in the PICs have appreciated that the successful implementation of the PIGGAREP would involve close and productive working relationships between these key government offices, the private sector and non-governmental organisations (NGOs).
7. The PIGGAREP will be implemented within the framework of two complementary regional frameworks/policies, PIEP and the Pacific Islands Framework for Action on Climate Change (PIFRAC) that the PIC Leaders have adopted at the 2005 Forum. These, among others, can be used as the basis for adopting similar frameworks/policies at the national level. The PIFRAC identifies the key climate change priorities of the Pacific region and activities for action at the national and regional level over the next ten years. This document is intended to help target, catalyze action and strengthen partnerships at all levels to enable the Pacific region to better understand and respond to climate change and climate variability. The Framework is consistent with the timeframes of the Millennium Declaration, the Johannesburg Plan of Implementation (JPOI) and the subsequent work of the United Nations Commission on Sustainable Development (CSD). The Framework underpins the priority that the PICs place on global GHG reduction through RE.

Stakeholders

8. The barriers to RE development and application in PICs cannot be removed without a high degree of participation from all stakeholders at government, private and civil society sectors. Among others with adequate and active stakeholder participation, RE will receive stronger recognition and support. For detailed information concerning stakeholders including consultations undertaken during the project preparation phase please refer to Section IV. The major project stakeholders are as follows: a) Pacific Island Country Governments and the Country Teams; b) NGOs and Local Communities; c) private sector; d) banks and financing institutions; and e) international and regional organizations.

Baseline Analysis

9. The baseline scenario (i.e., business-as-usual) in the area of RE development, promotion and application of feasible RE technologies is characterized by growth in the energy demand and supply of the PICs that would involve ad-hoc, little or no successful commercial development of RE resources over the coming decade. Under this scenario, the growing demand for electricity and for liquid fuels would primarily be met by building new diesel fired power generation plants and by an increased import of liquid fossil fuels for electricity generation and transport sector use. Based on the PIREP Regional Overview Report, there is estimated to be about 365.3 MW available RE capacity in the region that can offset conventional energy (i.e. diesel fuel oil) used for electricity generation: Cook Islands (2.14 MW); Fiji (107.50 MW); FSM (2.86 MW); Kiribati

(0.14 MW); Nauru (0.015 MW); Niue (0.022 MW); Palau (0.53 MW); PNG (238.11 MW); RMI (0.14 MW); Samoa (11.21 MW); Solomon Islands (0.64 MW); Tokelau (0.032 MW); Tonga (1.10 MW); Tuvalu (0.115 MW); and, Vanuatu (0.92 MW).

10. Under the business-as-usual (BAU) scenario, overall the following are anticipated:

- a) GHG emissions from the use of fossil fuels will continue to grow rapidly and mostly unabated;
- b) Increasing dependence on imported energy will continue to contribute to significant current account deficits and to a high vulnerability of PICs with respect to price shocks in the world energy markets;
- c) Local air pollution due to combustion of fossil fuels will increase;
- d) Fragile coastal ecosystems will remain endangered by hazards related to transport and use of fossil fuels;
- e) GHG mitigation activities via RE will be carried out without clear sense of direction and guidance;
- f) Rural electrification efforts will be restricted to mostly grid extensions, remote and rural areas will remain without convenient and efficient modern forms of energy, and reliable electricity supply;
- g) Productive uses of RE, which could improve livelihoods and promote income generation in rural areas are not taken advantage of;
- h) No significant development of local industries with adequate capacities to manufacture RE system products and components and to supply RE related services;
- i) Private sector will continue to play a marginal role as investors and providers of RE based energy services;
- j) Funding of RE initiatives – if they take place – will be outside the established local financial systems and channeled through donor organizations without giving local financial institutions a chance to acquire lending/financing capacity for RE;
- k) Urgently needed legislation and policy reform processes to adequately support sustainable development principles will not be initiated;
- l) Insufficient scarce public resources will be allocated to support the rural poor and reduce the electricity access gap between urban and rural areas;
- m) Experiences in the region will not be effectively shared and economies of scale in project preparation (e.g., procurement of specialized services) and capacity building (e.g., training workshops) will not accrue;
- n) Coordination between ongoing and planned activities on RE will be inefficient, or non-existing;
- o) Limited capacity in understanding RE will exacerbate problems associated with the widespread use of RET in the region;
- p) Training is likely to be carried out on an ad hoc basis and not focused; and,
- q) Government commitment to the promotion of RE is not likely to improve.

11. Furthermore, if the present situation in the area of RE development and utilization in the PICs is not addressed the region will fall further behind dynamic global RE developments that have already started in other parts of the world; progress towards achieving the Millennium Development Goals (MDGs) in the region will be hampered; and, there will be no additional strong basis for PICs negotiating on positions at the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC).

12. The implication of the above scenario is a continued reliance of the PICs on petroleum fuels to meet energy needs with a strong likelihood of unsustainable energy sector development. The successful implementation of the PIGGAREP is estimated to reduce CO₂ emissions by at least 30% by 2015 as compared to that in the BAU scenario.

PART II: STRATEGY

13. The overall strategy for implementing the PIGGAREP is based on the fact that for the BAU scenario to change, politicians, senior government officials, the civil society and the general public must hear, touch, see and read about sustainable RE projects on the ground and that these projects are actually reducing the consumption of fossil fuel at the project sites. The project will therefore focus on a balanced mix of activities on the ground, particularly in demonstration sites in each PIC, and delivered through hands-on involvement of national stakeholders and experts and with the support of regional and international stakeholders and experts. The following specific strategies will be applied in the project:
 - a) Linking the greenhouse gas mitigation focus of the project with UNDP's strategic programme for each PIC (see Section IV), relevant regional and national strategic programmes of the project partners and the effort of each PIC towards achieving the Millennium Development Goals (MDGs) and the removal of gender-related issues;
 - b) Promote hands-on project management and participation by national experts at the national level and promote closer cooperation and coordination by national stakeholders, with the regional stakeholders providing backstopping services if needed;
 - c) Promote regional cooperation and intensify multi-donor and agencies cooperation;
 - d) Encourage an operational focus of the project on concrete and tangible RET demonstration projects through the supply of services and support to the designated projects;
 - e) Mobilize and develop regional and national capacities for mainstreaming of RE investments;
 - f) Systematically generate 'bankable' project pipelines in the participating countries;
 - g) Enhance knowledge management and networking nationally, regionally and internationally on RE development and utilization;
 - h) Delivery of a comprehensive package of training, technical advice and support, public awareness improvement, preparation of relevant legislations and policies, RE resources monitoring, feasibility studies and RE system hardware installations which recognizes the key role of energy efficiency in GHG mitigation;
 - i) Identification and facilitation of the deployment of the realistic number of RET-based energy system installations, which are commercially competitive with alternative sources of fossil fuel energy; and,
 - j) Facilitation of the enforcement of appropriate and innovative legal instruments to promote RETs addressing issues such as: types of technologies, standards, specifications, importation rules, setting up an enterprise for RE, incentive mechanisms, stand alone technologies verses grid connected, employment rules, RET industry rules and regulations, financing, etc.
14. The perceived high risks to the region of promoting feasible RETs, limited successful applications on the ground coupled with the high transaction costs associated with supporting RE investments within the currently undeveloped market will continue to cause local lending institutions to pursue other opportunities and agendas. Without the GEF's involvement, the BAU scenario would only lead to minor and ad-hoc progress in RE development and meaningful market-based investments on RE will remain suppressed, as the basic problems that have impeded RE investments in the past remain unsolved.

PROJECT RATIONALE AND POLICY CONFORMITY

Project Rationale

15. The fact that the PICs are small in size, situated in the Tropics, along the Pacific Rim of Fire and surrounded by the vastest ocean on Earth makes the PICs just about the region with the highest RE potential per capita. Studies carried out during the project preparatory exercise (i.e., under PIREP) indicated that the PICs could reduce the CO₂ emission from the BAU by at least 2 million tons by 2015 by utilising commercially-viable RE technologies. However this potential cannot be fully realised unless barriers identified during the preparatory phase are removed.
16. The proposed regional project is the first attempt in the PICs to comprehensively and systematically address the inter-related barriers to the widespread utilization of feasible RE technologies. It is a collective attempt to address the technical, financial, market, institutional, policy and awareness barriers at the same time since they are interrelated and intertwined. The PICs are well aware of the fact that the combined effect of such barriers is the absence of financially sustainable and economically competitive RET-based energy system projects on the ground. Earlier efforts in the region to promote RETs have only partially tried to address a few barriers on ad hoc basis and have had minimal impacts that could change the business-as-usual scenario in the field of RE in the Pacific. Since e.g. the technical barriers are related to the market barriers and the policy barriers are related to the financial, market and technical barriers, the removal of barriers through this comprehensive approach will have more effective and lasting impacts.

PROJECT GOAL, OBJECTIVES, OUTCOMES AND OUTPUTS

Project Goal

17. The global environment and development goal of the project is the reduction of the growth rate of GHG emissions from fossil fuel use in the PICs through the removal of the barriers to the widespread and cost effective use of feasible RE technologies.
18. At the end of a five-year project life it is expected that GHG emissions in PICs will be reduced by at least 371,000 tons of CO₂, and by about 2 million tons by 2015. In 2015, the potential of available and feasible RE resources in the PICs would have also been comprehensively assessed, developed and used effectively for both electricity and non-electricity applications.

Project Objectives

19. The overall objective of the project is the promotion of the productive use of RE to reduce GHG emission by removing the major barriers to the widespread and cost-effective use of commercially viable RETs.
20. The removal of the barriers will enable commercially viable RETs to be used in tourism facilities, educational, communication and health services, to provide employment to young people and to establish value added activities like handicraft making. It will also improve the local access to financing for renewable energy projects. These will be carried out through: (a) Increased number of successful commercial RE applications; (b) Expansion of the market for

RET applications; (c) Enhanced institutional capacity to design and implement RE; (d) Availability and accessibility to sufficient funding for existing and new projects; (e) Strengthened legal and regulatory structures in the energy and environmental sectors; and, (f) Improved awareness and knowledge among key stakeholders.

21. The project comprises six major components, each addressing a specific type of barrier. Below are specified sub-objectives related to the type of barrier being addressed:

Type of Barrier	Project Component Objectives
Technical	Increased number of successful commercial RE applications for productive uses and income activities in the PICs
Market	Expansion of the market for RET applications for both energy and non-energy uses
Institutional	Enhanced institutional as well as systemic and individual capacity to design and implement RE
Financial	Availability and accessibility of sufficient funding for existing and new RE projects
Policy and Regulatory	Strengthened legal and regulatory structures in the energy and environmental sectors
Information and Awareness	Improved awareness and knowledge among key stakeholders project

Alternative Scenario – Outcomes and Outputs

22. In the GEF-funded Alternative Scenario, changes are not expected unless, first and foremost, politicians, senior government officials, investors, financiers, the civil society and the general public hear, touch, see and read about financially sustainable and economically competitive RE projects on the ground and these projects are not only bringing about reduction in the consumption of fossil fuel but also demonstrating the productive uses of renewable energy through improved value added products, better services and improved income. The underlying reasons for this development scenario are based on the fact that for RE to take off in the PICs, it must have the confidence and the approval rating of the decision makers, donors, investors, the private sector and the general public first. This will largely be achieved by having more financially sustainable and economically competitive RE-based energy system installations, which people can witness. PIGGAREP is therefore designed to complement and build on other parallel RE projects that in removing barriers to widespread RE applications that are financially sustainable and economically competitive. From the findings and recommendations of the project development exercise that was carried out under PIREP, the following alternative scenario outcomes that will be initiated, facilitated and supported by the regional RE project are expected:

- a) Improved productive uses of RE particularly in the rural and remote communities for use in schools, health centers, water supply, agriculture and fishery, telecommunication, etc.
- b) Improved local expertise, experiences and skills to: (1) Monitor and analyze RE resources measurements and data; (2) Plan, design, install, monitor and maintain RE installations; (3) Formulate and review legislation, regulations and policies; and, (4) Effectively campaign, lobby for and disseminate RE success stories;
- c) Availability of legal, financial, technical advice and equipment support for RE-based energy system projects in the PICs;

- d) Enhanced understanding of the mitigation of GHG emissions through the application of RE technologies for supporting the sustainable development efforts of the PICs;
 - e) Strengthened legal, regulatory, planning and coordination structures for the mitigation of GHG through the widespread utilization of RE;
 - f) Enhanced understanding of RE potential, and knowledge about the RE resource availability in PICs;
 - g) Identified financially viable and ‘bankable’ climate change mitigation and RE projects and identified number of RETs deployment for productive purposes that are sustainable and competitive with fossil fuel based alternatives;
 - h) Implemented financially sustainable RE demonstration projects that successfully showcase the design, development, engineering, financing, implementation, operation, maintenance, monitoring and evaluation of RE-based energy system projects that can support the sustainable development of the PICs; and,
 - i) Established sustainable capital base for supporting RE-based energy system (electricity and non-electricity) projects in the region.
23. Based on historical data on diesel fuel oil (DFO) consumption in the PICs, the annual CO2 emissions in the region would increase from about 3.62 million tons in 2005 to about 7.66 million tons in 2020. New RET-based energy system installations in the PICs in the next 15 years is expected to result in an average 1.3% reduction in annual growth of CO2 emissions (e.g., 3.59 million tons in 2005 and 6.24 million tons in 2020).
24. Comparing the trends of potential CO2 emissions from DFO consumption in the PICs (business-as-usual and alternative scenarios), the potential annual CO2 emissions reduction from RET applications in the Pacific could be from about 0.04 million tons in 2005 to about 1.41 million tons in 2020.
25. The PIGGAREP is intended to initiate, facilitate and support the deployment of sustainable and economically viable and competitive RET-based energy systems. The potential CO2 emission reduction is estimated to be about 2.0 million tons.
26. Specifically the following outputs are expected at the end (unless specified otherwise) of the proposed 5-year regional RE project:
- a) Successfully established and operational RE demonstration projects showcasing productive uses of renewable energy in community infrastructures as well as the business angle of RE applications in each PIC;
 - b) At least one Renewable Energy Service Company (RESCO) is registered and fully operational in at least 10 PICs;
 - c) At least one RE project designed, implemented, operated and managed by local RE experts in each PIC;
 - d) At least 20,000 additional people in PICs served with RE;
 - e) At least 20 additional social services entities (e.g. schools, health centers, telecommunication, etc) in PICs using RE;
 - f) At least an average total of US\$5 million in income generating opportunities/activities in the region gained from RE;
 - g) All PICs have Climate Change/Environment and Energy Acts and Policies in place and enforced;
 - h) All PICs have set GHG emissions reduction and/or RE utilization targets;

- i) At least 20 additional PIC nationals with a university degree on the technical aspects of RE;
- j) At least 20 additional commercially viable RE projects in the region have been identified, studied and full feasibility studies prepared for submission to donors, financiers and investors;
- k) Comprehensive documentation of the technical, economic and environmental characteristics of 14 successful demonstration projects and accessible via internet-based information system;
- l) National energy balance of each PIC prepared based on the energy supply and consumption data that will be collected to assist in formulation of the national energy plans and policies;
- m) Updated regional synthesis of the energy sector GHG emission inventory;
- n) At least 100 MW of additional RE installed capacity, approximately equivalent to at least US\$100 million invested in new commercially viable RE system installations;
- o) A Regional RE Fund with an initial start up capital of US\$10 million is studied and considered by the PICs and donors to provide loans for RE applications; and,
- p) At least a total of 2 million tons of CO2 mitigated by 2015.

27. The project is consistent with the guidelines/requirements of Operational Programme No. 6: Promoting the adoption of renewable energy by removing barriers and reducing implementation costs. It addresses the GEF strategic priorities on climate change, primarily Strategic Priority 4 (SP-4): Productive uses of renewable energy.

Risks and Assumptions

28. A detailed overview of risk and assumptions is specified in the Project Planning Matrix (PPM), which is included in Section II. Overall risk for the project is considered moderate. The principal risks, i.e. possible barriers to successful project implementation and externalities that may reduce project effectiveness, relate to: (i) the sustainability of the support by key stakeholders in the region; (ii) lack of interest of the private sector and (iii) the price level for conventional energy, i.e. world market development for fossil fuels. Experience in the region has shown that the risk of lacking or fading government support in the field of RE, energy policy and energy sector related institutional development is real, i.e., the project has to establish effective means to monitor and to the extent possible mitigate these risks. Mitigation measures include a strong emphasis on PIC hands-on project management and participation, mobilizing private sector participation and a continuous dialogue between the project's donors, Implementing Partner, implementing agency, regional organizations and national governments.

Summary of Key Project Risks

Key Risk	Level of Risk	Commentary and Mitigating Actions
Ineffective local participation and coordination The capacity in the PICs to effectively coordinate and implement major regional projects is low. At times, the very limited available local capacity is fully absorbed on many externally funded projects thereby diverting attention from higher priority activities.	Low to Moderate	Dedicated project personnel assure efficiency of implementing project activities. The project will fund full-time National Project Coordinators (NPC) in each participating country, which governments will absorb into its service at the end of the project. Local authorities should play the lead role in the management of the implementation of their respective project activities.
Ineffective regional coordination and	Low to	Regular meetings of the Project Advisory

Key Risk	Level of Risk	Commentary and Mitigating Actions
collaboration with the private sector Regional organizations continue to carry out energy-related activities in the PICs on their own losing the potentials for synergetic work towards wider achievement of energy-related objectives	Moderate	Committee (PAC) to exchange work programmes and implementation plans. Participation of the private sector in the PIGGAREP country teams Utilize the expertise within the Energy Working Group (EWG) of the Council of Regional Organisations in the Pacific (CROP)
Failure of the Demonstration Projects A failure of the demonstration projects will essentially mean a return to the BAU scenario with the lack of investor and donor confidence to finance more hardware installations and the possible Regional Renewable Energy Fund (RREF).	Low to Moderate	The package of capacity building and enabling environment activities, centred on each demonstration project, over a period of 5 years with the regular monitoring and progress reporting will facilitate the success of these projects.
Market/Economic External Risks A drop in fossil fuel prices makes RE less attractive to RESCOs and investors.	Low	A significant fall in fossil fuel prices is highly unlikely given that at 2005 oil prices reached an all time high (in nominal prices). A drop in oil prices will not change the environmental attractiveness of the demonstration projects.
OVERALL RISK	LOW TO MODERATE	

29. The achievement of the PIGGAREP overall objective is among others based on the assumptions that there will be political stability in the PICs and there will be effective in-country support not only from the governments, but also from the communities too. Oil prices are currently on an all time high and it is assumed that it will stay this way for the foreseeable future. It is furthermore assumed that with successful projects on the ground, there will be confidence in RETs. Thus when communities, governments, investors, etc see, touch, read and hear about successful projects they will give RE their support.
30. As part of the Inception Phase the project risks and assumptions will be reviewed, and where necessary additional project risks will be identified. In addition, also as part of the Inception Phase, a detailed risk management strategy for project implementation will be prepared.

SUSTAINABILITY

Expected Global, National and Local benefits

Global and Regional Benefits

31. The successful implementation of the PIGGAREP is estimated to reduce CO₂ emissions by at least a total of 2 million tons by 2015.
32. In addition, such achievement will strengthen PICs'/Alliance of Small Islands States' (AOSIS) negotiation positions at the UNFCCC and Kyoto processes and it will also demonstrate the strong commitment of the PICs to the Johannesburg Renewable Energy Coalition (JREC) of which the AOSIS is a founding member. Further it will meet the region's commitment to the International

Action Programme on RE that was adopted of the International RE Conference held in Bonn in June 2004, the Johannesburg Plan of Implementation, the Barbados Programme of Action (BPoA) and the Mauritius Strategy, as well as supporting their effort to achieve the MDGs.

33. The experiences from the project will provide lessons and best practices for other SIDS. The project will also strengthen the collaborative effort by international and regional agencies to address the multi-dimensional nature of the challenges of climate change.
34. At the regional level, the project will not only strengthen the joint effort of the CROP to implement the Pacific Plan², the PIFRAC and the PIEP but it will also support the effort of other regional agencies through the sharing of information, data, experiences, expertise and financial resources. The project will also strengthen the delivery of a complete climate change, climate variability and sea level rise programme by the IP since this GHG mitigation project will be an addition to the IP's Pacific Futures programme's existing projects on adaptation, meteorology and Ozone Depleting Substances. The project will also assist in the effective and integrated delivery of regional environmental services for the PICs since the IP will deliver the project through its programmatic approach making use of the existing expertise, established networks and delivery mechanisms.

National Benefits

35. There are many national benefits to be gained from the productive uses of renewable energy, which will result from this project. The expected key ones include:
 - a) Increased investments and employment opportunities – The project will create an enabling environment with the necessary confidence and there will be increased investments in the RE market. Such investments will not only create more employment opportunities (through RESCOs, manufacturing, marketing, etc) but it will also contribute to improved local know how, awareness and experiences.
 - b) Improved livelihoods and increased income generation in rural areas – Productive uses of RE will bring about income generation opportunities for people in rural areas, whereby the mechanical and/or electrical energy produced from RE resources is/are utilized for income generating activities, e.g., cottage industries, metal work, agro-industrial processing, eco-tourism, etc.
 - c) Improved access to electricity and the delivery of public services – A number of PICs have less than 20% of their population with access to electricity. The project will not only provide electricity to selected project sites but it will also create the enabling environment and confidence for major electrification programmes. Access to electricity will increase with the resultant improvement in the socio-economic conditions, particularly in rural and remote areas including improved education, health, telecommunication and water supply services.

² The Pacific Plan, adopted by the PIC Leaders in 2005, is the blueprint for enhancing and stimulating economic growth, sustainable development, good governance and security for Pacific countries through regionalism. One of the indicators in the Pacific Plan is “Percentage increase of population a) with access to an electricity supply; and b) whose electricity is generated from renewable energy.”

- d) Good governance – The project will promote good governance through the adoption of legislative, regulatory and planning tools which will promote open competition and transparency, open and consultative processes among local stakeholders, equal participation of men and women and the respect for the local environment. In some PICs, the absence of an effective regulatory framework for the power sector has led to increases in the power tariff, which consumers claim to be unjustified and unfair.
- e) Self-sufficiency – The effort of this project to promote the widespread utilization of RE resources, with energy efficiency considerations in mind, through activities implemented mostly and jointly with local experts means more reliance on indigenous human and natural resources, with its associated foreign exchange savings, increased energy independence and building of local expertise.
- f) Strengthened national capacity to deal with climate change issues – The project will reactivate the established “country team” approach to dealing with climate change, put in place adopted enabling instruments like national policies, strategies and plans, provide data for better planning and designs and also improve skills and experiences through its various capacity building activities.

Country Ownership: Country Eligibility and Country Drivenness

36. From 1997-2001, the Global Environmental Facility (GEF) and the United Nations Development Programme (UNDP) country office in Samoa assisted the PICs through a South Pacific Regional Environment Programme³ (SPREP)-executed Pacific Islands Climate Change Assistance Programme (PICCAP) to build the capacity of the PICs to deal with the challenges of Climate Change including meeting their reporting requirements under the UNFCCC. A regional GHG mitigation study conducted under the framework of the PICCAP identified the energy sector as the principal source of GHG emissions in the PICs and confirmed renewable energy (RE), energy efficiency and forestry as promising and priority GHG mitigation options. The PICs agreed and requested UNDP and SPREP in 2000 to pursue a regional GHG mitigation project on RE within the framework of its Climate Change, Seal Level Rise and Variability programme. The GEF in 2002 approved a project preparatory exercise, i.e. PIREP. The implementation of the PIREP commenced in May 2003 and focused on the development of a regional approach to the removal of barriers to the widespread utilization and commercialization of feasible RETs. The comprehensive regional RE project is the PIGGAREP.
37. Eleven out of the 15 PICs that are taking part in PIREP are the participants in the PIGGAREP. All of the eleven participating PICs have ratified the UNFCCC. The ratification dates are as follows: Cook Islands (20/04/93); Fiji (25/02/93); Kiribati (06/02/95); Nauru (11/11/93); Niue (27/02/96); Papua New Guinea (16/03/93); Samoa (29/11/94); Solomon Islands (28/12/94); Tonga (01/07/98); Tuvalu (26/10/93); and, Vanuatu (25/03/93).
38. In the last decade, the Leaders of the PICs e.g. via the Forum meetings have unanimously and consistently advocated measures to address the problems of global warming and sea level rise. The Leaders also have continuously called for the adoption of concrete measures at global, regional, national and community levels to develop and utilize RE technologies as one of the effective means of addressing these problems. They have highlighted the importance that Forum

³ As of September 2004, SPREP became known as the Secretariat of the Pacific Regional Environment Programme

members place on domestic actions to reduce emissions. At their 2003 Forum meeting, the Leaders welcomed the PIREP/PIGGAREP as a regional effort to promote the widespread utilization of feasible renewable energy technologies in order to reduce GHG emissions.

39. By June 2005, all the 11 PICs in the PIGGAREP have submitted their First National Communications under the framework of the UNFCCC. These communications all highlighted that the reduction of GHG through the widespread utilization and productive uses of RE is a priority activity in each of the PICs.
40. Most of the PICs do not have adopted national climate change and energy plans and policies and these are areas that will be addressed by the project. However, all the PICs have endorsed PIFRAC and a PIEP which highlight the priority that the PICs place on RE.
41. The development of the PIGGAREP has involved extensive and numerous consultation meetings with the PICs and other project stakeholders dating back to 1998 when the PIREP was first tabled. Since then the project among others has been discussed at meetings of the Forum Officials Committee, CROP EWG, the PIREP Project Advisory Committee, the PIREP country teams, RE donor roundtable meetings, the annual conference of the Pacific Power Association, the Pacific Regional Energy Meeting (REM) and the annual SPREP meetings. The SPREP meeting, which is mostly made up of the GEF Operational Focal Points of the PICs, endorsed the PIGGAREP in its meeting in 2004. National stakeholders were regularly informed through direct communications between the Chief Technical Adviser (CTA) and the PIREP National Coordinators, meetings of the PIREP Country Teams, regional workshops and meetings and the MSP multipartite review meeting.
42. It should be noted that PIGGAREP is the only RE barrier removal initiative from the PICs in the International Action Programme adopted at the International Conference on Renewable Energy, held in Bonn in June 2004.
43. PIGGAREP has direct linkages to and collaboration with ongoing international, Asia-Pacific regional, sub-regional Pacific and national projects and programmes. These include UNDP's support to the achievement of the MDGs among others via the UNDP energy activities at national, Pacific sub-regional and Asia-Pacific regional levels. At sub-regional Pacific levels there are collaboration for example with SOPAC's work on policy development via the UNDP/Government of Denmark supported Pacific Island Energy Policies and Strategic Action Planning project (PIEPSAP), linkages with regard to the work on national energy database development, transport and resource assessments; linkages to USP's activities with regard to energy education (e.g., wind energy), and linkages to PPA's work in the region covering RE opportunities at utility level. Some of these have parallel activities that, as per agreement with the project proponents/owners, would be subsumed in the PIGGAREP.
44. It should be noted that these projects are funded separately and are among the co-financed activities of the PIGGAREP. As part of the regional project (and indicated in the PPM), their results are reported as among the outputs of PIGGAREP. Where necessary, GEF resources will be used for technical assistance in the implementation of the demonstration projects, e.g. for hardware components, taking note of the fact that GEF resources cannot be utilized for hardware procurement. The demonstration activities in PIGGAREP are not meant to demonstrate the RE technologies (RETs) but to showcase the feasible RE delivery mechanisms as well as the "business angle" of RE. As part of the barrier removal activities the demonstrations are meant to

show how to develop, design, engineer, finance, implement, commercially operate and maintain RE-based energy system applications. The matching of these hardware-based projects and PIGGAREP's technical assistance is therefore very important in demonstrating the "business angle" of RE service delivery and RET applications. Such demonstrations of commercially viable RE-based energy system projects in the region would bring about the success of the PIGGAREP interventions. Representatives from these subsumed projects are members of the PIGGAREP Project Advisory Committee (PAC) and the Country Teams.

Sustainability

45. The sustainability of the institutional components including management arrangements of the project is assured through the adoption of approaches and strategies that overall seek to utilize and strengthen institutional and coordination structures that already have been established and are operational at both the national and regional levels. This includes mechanisms dealing with issues of cross-sectoral nature like climate change, renewable energy, etc.
46. At the national level, there is the Country Team Approach. This approach, which was established during the PICCAP and continued in PIREP as well as in PIEPSAP, is based on the realization that to effectively tackle cross sectors issues like climate change there is a need to bring together many actors from different crosscutting thematic areas. It includes inviting the national government to designate an agency to host a team of sectoral representatives and national experts, which could facilitate policy and decision-making, and the implement climate change-related renewable energy projects. Institutional sustainability is also ensured by the multi stakeholder participation of leading climate change and energy agencies at both the national and regional levels. Furthermore the activities of the PIGGAREP will be mainstreamed into the work programme of the energy and environment offices in each PIC so as to enable them to continue to spearhead and sustain the activities after the project life. PICs will be encouraged to absorb the NPC into its workforce and to continue working on GHG mitigation issues. The national activities of the regional project will be anchored with national climate change and energy programmes. The project will strengthen the role of the energy offices in leading the energy programmes and GHG emission mitigation activities in each PIC as well as fostering continuous and closer productive working relationships with the environment departments and other key stakeholders.
47. The institutionalized periodic monitoring and reporting of energy supply and consumption in the PICs, as well as the continuous monitoring and evaluation of the RE project sites, even after completion of the project period, will ensure sustainability of the project with desired benefits in the long run.
48. The financing mechanisms that will be assessed, designed and implemented under the project are meant to ensure sustained financing availability and assistance for entities that are planning to implement RE-based projects, both for electricity and non-electricity applications.
49. Furthermore planned overall activities such as RE business financing capacity building, promotion of ESCO-led RE system projects, promotion of an RE services industry, and establishment of market for ESCO services will ensure sustainability of the relevant interventions that will be implemented under PIGGAREP.

50. PIGGAREP will be anchored into SPREP's Pacific Future's Programme and whose Strategic Programmes for 2004-2013 has "Mitigation Options Promoted and Response Measures Strengthened" as one of the outputs of the programme's Climate Change component. Together with existing projects relating to adaptation and understanding the science and the politics of climate change, a GHG mitigation project such as PIGGAREP will complete the cornerstones for an effective regional climate change programme. The PIGGAREP will be implemented within the framework of SPREP's programmatic approach thereby enabling the utilization of the multidisciplinary experts that exist in the organization in the areas of training and awareness raising, finance and marketing, law and policies, climate change policy, meteorology, waste management, climate change negotiations as well as in climate monitoring. The 16th SPREP meeting requested SPREP to continue to enter into partnerships that would source more financial resources for more regional and national GHG mitigation activities. These would ensure the sustainability of the interventions after project completion.
51. Concerning the sustainability of the regional RE market then the financial sustainability of the project's efforts will essentially depend on the competitiveness of RE versus conventional fossil alternatives. More specifically:
- a) While the development of the fossil fuel price benchmark is difficult if not impossible to predict over a 5-year project lifetime and beyond it is safe to assume that specific cost for RE hardware will decrease as international markets expand. It should be noted, that unit investment cost (\$/kW) for wind energy, for example, have decreased in real terms by approximately 30% over the last ten years with industry analysts predicting further decreases in the coming decade. Similar developments are expected for bio-fuels and PV;
 - b) As the project aims at pooling projects and increase the size of the currently very small RE market in PICs it is reasonable to expect decreases in on site specific investment cost through lower transaction cost and improved implementation efficiency (e.g., bundling small-scale projects, thereby achieving economies-of-scale); and
 - c) The project will address the issue of ensuring a comprehensive analysis of cost related to both conventional and RE based energy supply in the framework of its capacity and policy development components, i.e., it is expected that the perception of competitiveness of RE amongst decision makers will change as the full lifecycle cost of conventional supply chains become known.

Replicability

52. The use of a balanced mix of capacity building and enabling environment activities by the project tailored to the specific country conditions, markets and regulatory environment, and RET application demonstrations on the ground are ingredients for successful RE resource utilization and their replication. The demonstration projects are baseline activities that are subsumed under the PIGGAREP. They are among the co-financed activities of the project and are not to be financed through the financing mechanisms that will be developed. The financing schemes are meant to assist the design and implementation of replications of the demonstration projects. PIGGAREP will support these projects to showcase the "business angle" of RE-based energy projects, whereby the conceptualization, planning, designing, engineering, financing, implementation and commercial operation of such projects are demonstrated. As part of the project activities, technical assistance will be provided to RE financing applicants who are eligible for accessing RE financing, as well as assistance extended to the procurement (if needed by the demonstration host sites) of hardware for the demonstration schemes that will be

implemented under this project. The demonstration projects are also expected to influence the financial sector in the PICs (and in the region) to provide financing assistance for the replication of RE-based energy projects.

53. The demonstration projects are expected to be vehicles for shifting investment patterns from conventional technologies toward RE. The activities that will be carried out under the project will create an enabling environment that would facilitate the widespread utilization of RETs in the PICs by enhancing productive uses of RE and the increased access to local financing. With such enabling environment, replications of several specific interventions that will be carried out in the project are expected. In particular, the various demonstration activities that will be carried out will showcase feasible design and application of RET systems, design and manufacturing of RE system equipment and/or components, utilization of RE system design tools and models, enforcement of policies, and implementation of RE project financing. Replication is an integral component of the project design as the expected energy savings from the application of RETs (and the corresponding GHG emissions reduction) rely on the replication of the various PIGGAREP activities.
54. Replicability of the strategies and approaches applied in the project, and results of the demonstrations will be ensured through the effective documentation and widespread dissemination. Successful replication of market-based solutions to RE development can also be extended across sectors and transferred from household supply concepts to education, health, water and food supply and communication.

PART III: MANAGEMENT ARRANGEMENTS

Implementing Partner⁴

55. As the PIGGAREP Implementing Partner (formerly know as Executing Agency), SPREP will be the sole agent responsible for overall planning, management, coordination and administration of PIGGAREP. The PICs have endorsed SPREP's role at the SPREP annual meeting and have approved an indicative Work Programme and Budget for PIGGAREP for 2006 and 2007. PIGGAREP will be one of the cornerstones of the climate change component of SPREP's Pacific Future's Programme and will be implemented within the framework of SPREP's programmatic approach thereby enabling the utilization of the multidisciplinary experts that exist in the organization in the areas of training and awareness raising, finance and marketing, law and policies, waste management, climate change negotiations as well as in climate monitoring. SPREP will provide administrative, logistical and technical support for the Project Manager (PM) and the Administrative/Financial Officer (AFO).
56. SPREP will be accountable to UNDP Samoa for the achievement of the project objectives and for all reporting, including the submission of work plans, progress reports, audit and financial reports. SPREP will be responsible for financial control of the UNDP/GEF project implementation using the National Execution (NEX) modality of UNDP, SPREP, working with

⁴ ⁴ Definition of Implementing Partner (IP): The IP is the entity responsible and accountable for managing a project, achieving project outputs, and for the effective use of UNDP resources. A single IP is designated to lead the management of each UNDP supported project. The IP may enter into agreements with other organizations or entities to assist in successfully delivering project outputs. Possible IPs include government institutions, other eligible UN Agencies, and Inter-governmental organizations (IGOs), UNDP, and eligible NGOs. Eligible NGOs are those that are legally registered in the country where they will be operating. Proposed IPs should be identified based on an assessment of their technical, financial, managerial and administrative capacities that will be needed for the project.

the PM; will assume responsibility for entering into the necessary work arrangements with other regional organizations to maximize efficient and effective project implementation. SPREP will also assist the PM to engage services consistent with delegations provided by the Director under SPREP's Financial Regulations. SPREP will provide the PM with full support in order to maintain a close record of all expenditures planned or made under the project in full accordance with relevant UNDP procedures and guidelines, as detailed in the UNDP Results Management User Guide. In addition to SPREP and UNDP, the PM will also report to the PAC on the disbursement of funds under the project in order to ensure full transparency.

57. A project management office (PMO) will be established in SPREP as part of its Pacific Futures Programme and the PMO will be responsible for the overall project operation and financial management and reporting in accordance with the rules and regulations for UNDP NEX projects. PIGGAREP will have two (2) permanent staff, the PM and AFO. Task Specialists (TS), associated with the 6 components of the project, will assist the PM with the delivery of the project activities, and as such will be part of the PMO. The TS will work on the PIGGAREP on a need basis.
58. National, regional or international experts when needed will undertake the project activities. The PMO will coordinate with all the project partners, particularly those implementing parallel projects whose results feed in, or are integral parts, of the PIGGAREP. The PM, among others, is responsible for coordinating, providing technical advice and ensuring that project activities at the national and regional levels are efficiently and cost effectively carried out. He/she will continuously liaise with the Forum-established Ad-hoc Working Group on Climate Change, the Climate Change Roundtable Process, the CROP EWG, the National Project Coordinators (NPCs), the Environment and Energy Sector stakeholders, the civil society and the co-financing partners. The PM will also be responsible for ensuring that the project is linked to SPREP's strategic programmes and to work closely with the Pacific Futures Programme Manager to ensure the project activities are integrated into SPREP's programmatic approach and there are synergies with other SPREP activities and programmes. He/she will also be responsible to UNDP for the achievement of project objectives and for all reporting, including the submission of work plans and financial reports. The project will be executed fully in line with UNDP's NEX procedures and guidelines, as detailed in the Results Management User Guide. The AFO will be responsible to the PM and will primarily deal with the secretarial and financial matters of the project.

Additional Coordination and Implementation Mechanisms

59. It is very important that the PIGGAREP activities among others are effectively coordinated with all its co-financing activities. The country teams, the PAC and the renewable energy roundtable from the PIREP will be re-established and strengthened as part of PIGGAREP.

National Coordination and Implementation Arrangements

60. The country teams, made up of representative from government, the private sector and civil society including NGOs will ensure that the PIGGAREP activities are coordinated with all the local co-financing activities in each PIC thereby enhancing the complementarities. Each PIC will decide on the most appropriate person to chair the country team. Country Teams will appoint their own national experts, as needed, in accordance with the 6 components of the PIGGAREP. Each PIC will appoint a National Project Coordinator (NPC) who will work full time on the

project and paid by the project. The NPC among others will be responsible for the day-to-day management and implementation of all national project activities.

61. In-country national level activities will be implemented to address specific needs of each PIC, delivering on-the-ground activities including hardware projects on the ground, utilizing local experts and involving local communities. This is to ensure maximum impacts and visibility. It will also give PICs ownership of the project, maximum local participation, particularly of the private sector, NGOs/CBOs and civil servants, and importantly the local communities in rural areas that are beneficiaries of RE-based energy projects. Country teams may subcontract certain activities to regional and international experts where necessary.
62. National government professionals and other relevant national stakeholders from the private sector and civil society will, to the extent possible, manage, coordinate and implement the in-country activities. The County Teams will upon request to the PM and as per agreed to work plans be provided with external technical assistance for implementation of specific in-country activities. Relevant regional organisations, national consultants, regional consultants or international consultants can provide such needed expertise. The PICs have the prerogative to engage the services of regional organisations in the implementation of their in-country activities if they deem necessary.

Regional Coordination and Implementation Arrangements

63. At the regional level the PAC will play the role of an advisory committee and be the same forum for the annual tripartite review meetings. It will compose of a representative each from the participating PICs (the National Project Coordinators) and a representative each from all the co-financing partners, including CROP EWG members. Non co-financing and interested organizations, including CROP EWG members can participate in the meetings of the PAC at own cost. As a minimum, the PAC will meet at least once a year, allowing for the stakeholders to review the progress with the project implementation and to agree on a coordinated annual project implementation strategy and plan.
64. Each PAC member will be responsible for the coordination of project activities and activities of the organisations he/she represents to avoid duplication of effort. On request from the PM, the PAC will provide guidance on the execution of project activities.
65. For issues and activities that are common among two and more PICs or where economies of scales considerations apply they can be addressed and/or delivered as sub-regional activities after consultation with the concerned PICs.
66. Relevant regional activities will be subcontracted to, and executed by the appropriate regional organisations with the expertise and time on mutually agreed terms. Regional organisations, which have the comparative advantage vis-à-vis the relevant regional activities, will be designated as the sub-contractor for those activities. Among others one mechanism to determine such possible comparative advantages is procurement via Open International Competition or Limited International Competition, as per UNDP Results Management User Guide.

Donor Roundtable

67. The donor roundtable meeting is a possible ad-hoc meeting of donors and is a forum to keep donors aware of the RE developments, opportunities and issues in the PICs including discussions on potential financial support for future commercially viable RE projects in the region that will be influenced by the PIGGAREP interventions.

Implementing Agency

68. UNDP via the Samoa Country Office as the Implementing Agency will provide the overall guidance and approval of key project activities, including fund commitments and co-financing arrangements. The UNDP, Samoa Country Office together with the UNDP-GEF Regional Technical Advisor for Climate Change in the Asia-Pacific region will carry out the GEF oversight. Working in conjunction with the various project partners, UNDP-Samoa will be responsible for monitoring and evaluation (M&E), including organizing project reviews, approving annual implementation work plans and budget revisions, monitoring progress, identifying problems, suggesting actions to improve project performance, facilitating timely delivery of project inputs, and provide linkages to its other sub-regional, Asia-Pacific regional and global initiatives. All M&E functions will be carried out in line with standard UNDP and UNDP-GEF procedures.

Acknowledgement

69. In order to accord proper acknowledgement to GEF for providing funding, a GEF logo should appear on all relevant GEF project publications, including among others, project hardware and vehicles purchased with GEF funds. Any citation on publications regarding projects funded by GEF should also accord proper acknowledgment to GEF. The UNDP logo should be more prominent – and separated from the GEF logo if possible, as UN visibility is important for security purposes.

PART IV: MONITORING AND EVALUATION PLAN AND BUDGET

70. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and UNDP Samoa with support from UNDP/GEF. The Logical Framework Matrix in Section II provides performance and impact indicators for project implementation along with their corresponding means of verification. These will form the basis on which the project's Monitoring and Evaluation system will be built.
71. The following sections outline the principle components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The project's Monitoring and Evaluation Plan will be presented and finalized at an Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Monitoring and Reporting

Project Inception Phase

72. A Regional Inception Workshop (IW) will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP Samoa and representation from the UNDP-GEF Regional Coordination Unit (RCU) at the UNDP Regional Centre in Bangkok, as well as UNDP-GEF (HQ) as appropriate.

73. A fundamental objective of this IW will be to assist the project team to understand and take ownership of the project's goals and objectives, as well as finalize preparation of the project's first annual work plan on the basis of the PPM. This will include reviewing the PPM (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise finalize the first Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.
74. Additionally, the objective of the IW will be to: (i) introduce project staff with the UNDP-GEF team which will support the project during its implementation, namely the UNDP Samoa and responsible UNDP/GEF staff from the UNDP Regional Centre in Bangkok; (ii) detail the roles, support services and complementary responsibilities of UNDP Samoa and responsible Regional Technical Advisor (RTA) from the UNDP-GEF RCU vis-à-vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), Tripartite Review Meetings, as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget rephasings.
75. The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify for all, each party's responsibilities during the project's implementation phase.

Monitoring Responsibilities and Events

76. A detailed schedule of project reviews meetings will be developed by the PMO, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Tripartite Reviews (TPR), PAC Meetings and relevant advisory and/or coordination mechanisms at national levels and (ii) project related Monitoring and Evaluation activities.
77. Day to day monitoring of implementation progress will be the responsibility of the PM in consultation with the Task Specialists based on the project's AWP and its indicators. The Project Team will inform UNDP Samoa of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.
78. The PM and the UNDP-GEF RTA will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the IW with support from UNDP Samoa and assisted by the UNDP-GEF RCU. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at the IW. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the AWP. The local implementing agencies will also take part in the Inception Workshop in which a common vision of overall project goals will be established. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

79. Measurement of impact indicators related to global benefits will occur according to the schedules defined in the IW and tentatively outlined in the indicative Impact Measurement Table at the end of this section. The measurement, of these will be undertaken through subcontracts or retainers with relevant institutions or through specific studies that are to form part of the projects activities or periodic sampling such as with sedimentation.
80. Periodic monitoring of implementation progress will be undertaken by UNDP Samoa through quarterly meetings with the project staff, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.
81. UNDP Samoa and UNDP-GEF RCU, as appropriate, will conduct yearly field visits to appropriate sites, or more often based on an agreed upon schedule to be detailed in the project's Inception Report/AWP to assess first hand project progress. Any other member of the PAC can also accompany, as decided by the PAC. A Field Visit Report will be prepared by UNDP Samoa and circulated no less than one month after the visit to the project team, all PAC members, and UNDP-GEF.
82. Annual Monitoring will occur through the Tripartite Review (TPR). This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to a TPR at least once every year. The first such meeting will be held within the first twelve months of the start of full implementation. The Implementing Partner will prepare an Annual Project Report (APR) and submit it to UNDP Samoa and the UNDP-GEF RCU at least two weeks prior to the TPR for review and comments.
83. The APR will be used as one of the basic documents for discussions in the TPR meeting. The Implementing Partner will present the APR to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants. The Implementing Partner also informs the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary.

Terminal Tripartite Review (TTR)

84. The terminal tripartite review is held in the last month of project operations. The Implementing Partner is responsible for preparing the Terminal Report and submitting it to UNDP Samoa and UNDP-GEF RCU. It shall be prepared in draft at least two months in advance of the TTR in order to allow review, and will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under formulation or implementation.
85. The TPR has the authority to suspend disbursement if project performance benchmarks are not met. Benchmarks will be developed at the Inception Workshop, based on delivery rates, and qualitative assessments of achievements of outputs.

Project Monitoring Reporting

86. The PM in conjunction with UNDP Samoa and the UNDP-GEF team will be responsible for the preparation and submission of the following reports that form part of the monitoring process. Items (a) through (f) are mandatory and strictly related to monitoring, while (g) through (h) have a broader function and the frequency and nature is project specific to be defined throughout implementation.

(a) Inception Report (IR)

87. A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed first year/AWP divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan would include the dates of specific field visits, support missions from UNDP Samoa or the UNDP-GEF RCU or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the AWP, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame.

88. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

89. When finalized the report will be circulated to project counterparts who will be given a period of two weeks in which to respond with comments or queries. Prior to this circulation of the Inception Report, UNDP Samoa and UNDP-GEF RCU will review the document.

(b) Annual Project Report (APR)

90. The APR is a UNDP requirement and part of UNDP's Country Office central oversight, monitoring and project management. It is a self-assessment report by project management to UNDP Samoa and provides input to the country office reporting process and the ROAR, as well as forming a key input to the TPR. An APR will be prepared on an annual basis prior to the Tripartite Project Review, to reflect progress achieved in meeting the project's AWP and assess performance of the project in contributing to the intended outcomes through outputs and partnership work..

91. The format of the APR is flexible but should include the following:

- An analysis of project performance over the reporting period, including outputs produced and, where possible, information on the status of the outcome;
- The constraints experienced in the progress towards results and the reasons for these;
- The three (at most) major constraints to achievement of results;
- AWP, CAE and other expenditure reports (ERP generated);
- Lessons learned; and
- Clear recommendations for future orientation in addressing key problems in lack of progress.

(c) Project Implementation Review (PIR)

92. The PIR is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a Project Implementation Report must be completed by UNDP Samoa together with the project. The PIR can be prepared any time during the year (July-June) and ideally prior to the TPR. The PIR should then be discussed in the TPR so that the result would be a PIR that has been agreed upon by the project, the Implementing Partner, UNDP Samoa and the concerned RTA.
93. The individual PIRs are collected, reviewed and analyzed by the RTA prior to sending them to the focal area clusters at the UNDP/GEF headquarters. The focal area clusters supported by the UNDP/GEF M&E Unit analyze the PIRs by focal area, theme and region for common issues/results and lessons. The TAS and PTAs play a key role in this consolidating analysis.
94. The focal area PIRs are then discussed in the GEF Interagency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings.
95. The GEF M&E Unit provides the scope and content of the PIR. In light of the similarities of both APR and PIR, UNDP/GEF has prepared a harmonized format for reference.

(d) Quarterly Progress Reports

96. Short reports outlining main updates in project progress will be provided quarterly to UNDP Samoa and the UNDP-GEF RCU by the Implementing Partner.

(e) Periodic Thematic Reports

97. As and when called for by UNDP/UNDP-GEF, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

(f) Project Terminal Report

98. During the last three months of the project the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met, or not achieved, structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

(g) Technical Reports

99. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the possible technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

(h) Project Publications

100. Project Publications will form a key method of crystallizing and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

Independent Evaluation

101. The project will be subjected to at least two independent external evaluations as follows:-

(a) Mid-term Evaluation

102. An independent Mid-Term Evaluation will be undertaken at the end of the second year of implementation. The Mid-Term Evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP Samoa based on guidance from the UNDP-GEF RCU.

(b) Final Evaluation

103. An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final

Evaluation should also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP Samoa based on guidance from the UNDP-GEF RCU.

104. In the tables below are included an indicative monitoring and evaluation work plan and corresponding budget and two overviews of indicative impact measurements.

Type of M&E Activity	Responsible Parties	Budget US\$ <i>Excluding project team Staff time</i>	Time frame
Inception Workshop (IW)	§ Project Manager § UNDP Samoa § UNDP/GEF	US\$40,000	Within first 4 months of project start up
Inception Report	§ Project Team § UNDP Samoa § UNDP/GEF	None	a) Draft IR available before IW b) Final IR available immediately following IW
Measurement of Means of Verification for Project Purpose Indicators	§ Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	To be finalized in Inception Phase and IW. Indicative cost US\$40,000	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	§ Oversight by Project GEF Technical Advisor and PM § Measurements by regional field officers and local IAs	To be determined as part of the Annual Work Plan's preparation. Indicative cost US\$10,000	Annually prior to APR/PIR and to the definition of annual work plans
APR and PIR	§ Project Team § UNDP Samoa § UNDP-GEF	None	Annually
TPR and TPR report	§ Government Counterparts § UNDP Samoa § Project team § UNDP-GEF RCU	None	Every year, upon receipt of APR
PAC / Tripartite Review Meetings	§ Project Manager § UNDP Samoa	US\$200,000	Following Project IW and subsequently at least once a year
Periodic status reports	§ Project team	5,000	To be determined by Project team and UNDP Samoa
Technical reports	§ Project team § Hired consultants as needed	10,000	To be determined by Project Team and UNDP Samoa
Mid-term External Evaluation	§ Project team § UNDP- Samoa § UNDP-GEF RCU § External Consultants (i.e. evaluation team)	15,000	At the mid-point of project implementation.
Final External	§ Project team,	15,000	At the end of project

Type of M&E Activity	Responsible Parties	Budget US\$ <i>Excluding project team Staff time</i>	Time frame
Evaluation	§ UNDP Samoa § UNDP-GEF RCU § External Consultants (i.e. evaluation team)		implementation
Terminal Report	§ Project team § UNDP Samoa § External Consultant	None	At least one month before the end of the project
Lessons learned	§ Project team § UNDP Samoa § UNDP-GEF RCU (suggested formats for documenting best practices, etc)	5,000 (average 1,000 per year)	Yearly
Audit	§ UNDP Samoa § Project team	5,000 (average \$1,000 per year)	Yearly
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	§ UNDP Samoa § UNDP-GEF RCU (as appropriate) § Government / PAC representatives	5,000 (average one visit per year)	Yearly
TOTAL INDICATIVE COST <i>Excluding project team staff time and UNDP staff and travel expenses</i>		US\$ 300,000	

105. The indicators below have been drawn from the Log frame Matrix and are related to the measurement of global benefits achieved by the project rather than project implementation progress. They will to be fine tuned and detailed in the Inception Workshop.

Strategy	Indicator	Annual Targets					
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
I. DEVELOPMENT OBJECTIVE/GOAL							
Reduction of the growth rate of GHG emissions from fossil fuel use in the PICs through the widespread and cost effective use of RE resources and application of feasible RE technologies	Cumulative CO2 emissions reduced (ktons)	0	13.2	53.0	132.5	238.6	371.1
II. IMMEDIATE OBJECTIVES/OUTCOMES							
A. Improved knowledge about RE resources potential and increase the number of successful commercial RE	A1. No. of resource monitoring studies completed	0	2	4	6	8	10
	A2. No. of commercially sustainable RE projects	0	2	4	6	8	10

Strategy	Indicator	Annual Targets					
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
applications on the ground							
B. Expansion of the market for RET applications	B1. No. of RET company in each PIC	0	2	4	6	8	10
	B2. Total additional RE-based energy system capacity installed in PICs (MW)	0	5	15	30	40	50
	B3. Value of income generating opportunities in PICs gained from RE	0	1	2	3	4	At least US\$ 5 million
	B4. No. of additional people in PICs served with RE	0	5,000	10,000	14,000	16,000	At least 20,000
	B5. No of additional social services (schools, health centers, telecommunication, etc) in each PICs using RE	0	6	10	14	18	At least 20
C. Enhancement of institutional capacity to design and implement RE	C1. No. of RE project designed and implemented by local experts in each PIC	0	2	5	7	9	10
	C2. No. of energy offices that have established national energy coordination committees, have clear mandates, strategies and action plans	0	2	4	6	8	10
D. Improvement of the availability of funding for existing and new RE projects	D1. Total value of new investments in RE	0	20	40	60	80	At least US\$100 million
	D2. No. of commercially viable RE projects in the region identified, studied and prepared for donors, financiers and investors	0	4	8	12	16	At least 20
	D3. Completed study on a Regional RE Fund			1			
E. Strengthened legal and regulatory structures in the energy and environmental sectors	E1. No. of PICs having relevant Act/provisions (Energy and Environment) in place that supports RE development and utilization and the formulations of RE regulations and policies	0	2	4	7	9	11
	E2. No. of National energy balances prepared	0	0	4	8	12	14
	E3. Updated regional synthesis of the energy sector GHG emission inventory						1

Strategy	Indicator	Annual Targets					
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
F. Increased awareness and knowledge about RE among key stakeholders	F1. Extent of energy sector professionals, politicians, investors, senior government officials and the general public that are aware of the benefits of RE and local success stories						Majority
	F2. No. of comprehensively documented RE projects and accessible via internet based information system						10
	F3. Percentage approval rating for RE technologies and projects in PICs						75
	F4. No. of additional PIC nationals with a university degree on the technical aspects of RE	0	0	4	14	16	At least 20

Impact Measurement Table

Key Impact Indicators	Target	Means of Verification	Sampling Frequency	Location
Cumulative CO2 emissions reduced	0.37 M tons by 2010 or 2 M tons by 2015	Monitoring and evaluation report on avoided GHG emissions with respect to baseline National communications and GHG inventories	Start, middle and end of the PIGGAREP; Energy Offices to monitor and report after PIGGARREP	PICs
No. of commercially sustainable RE projects	10 by 2010	Monitoring & Evaluation based on data from the project sites Project Reports Annual Energy Sector Reports	Same as above	PICs
Total additional RE-based energy system capacity installed in PICs (MW)	At least 100 MW of additional RE installed in PICs by 2015	Registry of companies, files from responsible ministry; Power Utilities statistics; Annual Energy Sector Reports	Same as above	PICs
Value of income generating opportunities in PICs gained from RE	5 million by 2010	Chamber of Commerce Reports Household income surveys	Same as above, except Trade Department or Ministry	PICs
Total value of new investments in RE-based energy systems	100 million by 2015	Trade and Investment Reports Bank Loan reports	Same as above	PICs

Audit Clause

106. SPREP will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of SPREP, or by a commercial auditor engaged by SPREP.

LEARNING AND KNOWLEDGE SHARING

107. Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums. In addition:
 - The project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for Senior Personnel working on projects that share common characteristics. UNDP/GEF shall establish a number of networks, such as Integrated Ecosystem Management, eco-tourism, co-management, etc, that will largely function on the basis of an electronic platform.
 - 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.
108. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identify and analyzing lessons learned is an on- going process, and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorizing, documenting and reporting on lessons learned. To this end a percentage of project resources will need to be allocated for these activities.

PART V: LEGAL CONTEXT

109. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Governments of the Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Island, Tonga, Tuvalu and Vanuatu (herein represented by the Secretariat of the Pacific Regional Environment Programme) and the United Nations Development Programme (UNDP). The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.
110. The UNDP Resident Representative in Apia, Samoa is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF RCU and is assured that the other signatories to the Project Document have no objection to the proposed changes:
 - Revision of, or addition to, any of the annexes to the Project Document;

- Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and,
- Inclusion of additional annexes and attachments only as set out here in this Project Document

SECTION II: STRATEGIC RESULTS FRAMEWORK AND GEF INCREMENT

A1. Broad Development Goals

111. At their special Retreat in Auckland on 6 April 2004, Pacific Islands Leaders issued a Declaration adopting the following Vision:

Leaders believe the Pacific region can, should and will be a region of peace, harmony, security and economic prosperity, so that all of its people can lead free and worthwhile lives. We treasure the diversity of the Pacific and seek a future in which its cultures, traditions and religious beliefs are valued, honored and developed. We seek a Pacific region that is respected for the quality of its governance, the sustainable management of its resources, the full observance of democratic values, and for its defense and promotion of human rights. We seek partnerships with our neighbors and beyond to develop our knowledge, to improve our communications and to ensure a sustainable economic existence for all.

112. In this declaration, Leaders highlighted the importance of sustainable development, governance and security as priorities for the PICs. The PICs have ratified multinational environmental agreements (MEAs) like the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), The United Nations Convention to Combat Desertification (CCD) and the Stockholm Convention on Persistent Organic Pollutants (SC POPs) based on the priority that they place on environmental sustainability and appreciating that the PICs is one of the most environmentally vulnerable regions of the world.

A2. Baseline Activities

113. The PICs Leaders have continuously called for concrete efforts to reduce the emissions of GHG. To put this into practice, the widespread use of feasible RE technologies has been highlighted as a priority activity in the PICs' Initial National Communications, National Sustainable Development Strategies and National Economic Plans and in their submissions to the WSSD and the BPoA +10 among others. However, the experiences on the ground have not been very encouraging and the progress has generally been very slow. Without the PIGGAREP, the reduction of the long-term growth of GHG emissions in the PICs will remain to be business-as-usual (BAU).
114. Under this business-as-usual (BAU) scenario, the following are anticipated: (a) GHG emissions from the use of fossil fuels will continue to grow rapidly and mostly unabated; (b) Increasing dependence on imported energy will continue to contribute to significant current account deficits and to a high vulnerability of PICs with respect to price shocks in the world energy markets; (c) Local air pollution due to combustion of fossil fuels will increase; (d) Fragile coastal ecosystems will remain endangered by hazards related to transport and use of fossil fuels; (e) Greenhouse gas mitigation activities via RE developments will be carried out without clear sense of direction and guidance; (f) Rural electrification efforts will be restricted to mostly grid extensions, remote and rural areas will remain without convenient and efficient modern forms of energy, and reliable electricity supply; (g) Productive uses of RE, which could improve livelihoods and promote income generation in rural areas are not taken advantage of; (h) No significant development of local industries with adequate capacities to manufacture RE system products and components and to supply RE related services; (i) Private sector will continue to play a marginal role as investors and providers of RE based energy services; (j)

Funding of RE initiatives – if they take place – will be outside the established local financial systems and channeled through donor organizations without giving local financial institutions a chance to acquire lending/financing capacity for RE; (k) Urgently needed legislation and policy reform processes to adequately support sustainable development principles will not be initiated; (l) Insufficient scarce public resources will be allocated to support the rural poor and reduce the electricity access gap between urban and rural areas; (m) Experiences in the region will not be effectively shared and scale economies in project preparation (procurement of specialized services) and capacity building (training workshops etc) will not accrue; and, (n) Coordination between ongoing and planned activities on RE will be inefficient, or non-existing.

115. Furthermore, if the present situation in the area of RE development and utilization in the PICs is not addressed the region will fall further behind dynamic global RE developments that have already started in other parts of the world; progress towards achieving the Millennium Development Goals (MDGs) in the region will be hampered; and, there will be no additional strong basis for PICs negotiating on positions at the Conference of the Parties to the UNFCCC.
116. The implication of the above scenario is a continued reliance of the PICs on petroleum fuels to meet energy needs with a strong likelihood of unsustainable energy sector development. The successful implementation of the PIGGAREP is estimated to reduce CO₂ emissions by at least 30% by 2015 as compared to that in the BAU scenario.

A3. Global Environmental Goal

117. The global environment and development goal of the project is the reduction of the growth rate of GHG emissions from fossil fuel use in the PICs through the removal of the barriers to the widespread and cost effective use of feasible RE technologies. The overall objective of the project is the promotion of the productive use of RE to reduce GHG emission by removing the major barriers to the widespread and cost-effective use of commercially viable RETs.

A4. GEF Alternative

118. To achieve the overall project objective, PIGGAREP will comprise of 6 major components, each of which is a specific program consisting of specific activities designed to address the barriers to the widespread and cost-effective use of commercially viable RETs in the PICs and to support their sustainable development effort. The six (6) components will address in an integrated fashion the barriers to the widespread development and utilization of RE resources in the PICs. Each component of the project will consist of a number of specific activities designed to address these barriers. These activities will address the shortfall of the past and current efforts by the PIC governments and the private sector in the PICs achieving widespread use of commercially viable RE technologies, management practices, maintenance and operational practices. The six GEF funded alternative components and their activities are listed below but the corresponding indicative in-country activities can be found in Annex I of the Project Brief, which will be finalized in the IW: The activities are as follows:
 - a) Component 1: Technical Capacity Development and Technical Support - This component among others will deal with the lack of successful commercial installations on the ground, the lack of awareness as to the specific RE resources potentials in the PICs, the absence of capacity with regard to RE. It will consist of three sub-components: (1) RE Resources

Assessments; (2) Technical Support; and, (3) RE Demonstration Schemes, that would assist bringing about increased number of successful commercial RE applications in the PICs. These additional capacity building and support activities will cost US\$ 1.65 million to implement. The total cost of the baseline activities is US\$ 20 million and would involve mostly hardware installations. This component will cost a total amount of US\$ 21.65 million to implement. This reflects not only the scientific and expensive nature of the resources assessment, but also the importance of knowing whether the RE resources potentials are existent before any other effort to facilitate and confirm their techno-economic feasibilities for harnessing.

- b) Component 2: Market Development Support - This component of the project will assist addressing the barriers to the development of a market for RE products and services, both nationally and regionally. These additional capacity building and support activities will cost US\$ 0.4 million to implement. The total cost of the baseline activities is US\$ 0.743 million and would involve preliminary feasibility studies in the PICs. This component will cost a total amount of US\$ 1.143 million to implement.
- c) Component 3: RE Institutional Strengthening - This component of the project will assist addressing the institutional issues regarding the development and implementation of RE initiatives in the PICs that have persisted for at least the past 3 decades. These additional capacity building, establishment and support activities will cost US\$ 1.675 million to implement. The total cost of the baseline activities is US\$ 5.0 million and would involve parallel institutional strengthening activities. This component will cost a total amount of US\$ 6.675 million to implement and reflects the importance of removing the institutional barriers to the widespread use and commercialisation of RETs in the PICs.
- d) Component 4: RE Financing Support - This component of the project will assist addressing the financial barriers to the widespread application of RETs in the PICs, and will also involve activities that are aimed at increasing the access to financing for RE projects and community-based projects that are supported by RE. These additional capacity building, establishment and support activities will cost US\$ 0.4 million to implement. The total cost of the baseline activities is US\$ 0.54 million. This component will cost a total amount of US\$ 0.94 million to implement.
- e) Component 5: RE Policy and Regulatory Support – This component will assist addressing the policy and regulatory barriers to the widespread use of RETs in the PICs. This project component will build on existing legislations and policies of the PIC governments regarding RE development and utilization. It aims to remove the policy and regulatory barriers that have persisted since the 70s despite abundant experience and lessons learned from previous projects. This component is also to bring about strengthened legal and regulatory structures in the energy and environmental sectors of the PICs. These additional capacity building, establishment and support activities will cost US\$ 0.25 million to implement. The total cost of the baseline activities is US\$ 0.7 million. This component will cost a total amount of US\$ 0.95 million to implement.
- f) Component 6: RE Information and Awareness Enhancement - This project component will assist addressing the information barriers that hinder the widespread development and implementation of RE system (electricity and non-electricity) projects in the PICs. These will include technical information that is required in the conceptualization/design of potential RE

projects, and market information that are necessary in evaluating the economic/financial viability of RE projects (e.g., electricity prices, fuel prices, electricity demand). These additional capacity building, establishment and support activities will cost US\$ 0.85 million to implement. The total cost of the baseline activities is US\$ 1.0 million and would involve current information and awareness activities that the project will link with. This component will cost a total amount of US\$ 1.85 million to implement and reflects the key role of information and awareness enhancement in the development and sustainable utilization of RE in the PICs.

A.5. Incremental Cost Matrix and Project Indicative Budget

119. Table A-1 shows the incremental cost matrix. The baseline and alternative courses are presented together with the costs of achieving them. The indicative budget (in US\$) for each project component is as follows:

Project Component		Baseline	Incremental	Total Cost	%
No	Name				
1	Technical Capacity Building and Technical Support	20,000,000	1,650,000	21,650,000	65
2	Market Development	743,000	400,000	1,143,000	3
3	Institutional Strengthening	5,000,000	1,675,000	6,675,000	20
4	Financial Support	540,000	400,000	940,000	3
5	Policy and Regulatory Support	700,000	250,000	950,000	3
6	Information and Awareness Enhancement	1,000,000	850,000	1,850,000	6
Total		27,983,000	5,225,000	33,208,000	100

120. Considering the expected 2 million tons CO₂ emissions that will be reduced as an effect (direct and indirect) of the PIGGAREP interventions, and the US\$ 5.225 million GEF assistance, the estimated unit abatement cost of the project is about US\$ 2.5/ton CO₂.

121. The following table shows the breakdown of the co-financing for the project:

Country/Entity	Cash	In-kind	Total	Nat'l Govts	Reg'l Orgs	Donors	NGOs	Total
Nat'l Govts	24,504,000	1,966,000	26,470,000	26,470,000	-	-	-	26,470,000
Cook Is	1,650,000	150,000	1,800,000	1,800,000				1,800,000
Fiji	1,600,000	200,000	1,800,000	1,800,000				1,800,000
Kiribati SEC	4,750,000	250,000	5,000,000	5,000,000				5,000,000
Nauru	1,800,000		1,800,000	1,800,000				1,800,000
Niue	1,800,000		1,800,000	1,800,000				1,800,000
PNG	4,500,000	300,000	4,800,000	4,800,000				4,800,000
PNG ATCDI	54,000	66,000	120,000	120,000				120,000

Country/Entity	Cash	In-kind	Total	Nat'l Govts	Reg'l Orgs	Donors	NGOs	Total
PNG UPNG CE	680,000	200,000	880,000	880,000				880,000
Samoa	1,650,000	150,000	1,800,000	1,800,000				1,800,000
Solomon Is	1,550,000	250,000	1,800,000	1,800,000				1,800,000
Tonga	1,270,000		1,270,000	1,270,000				1,270,000
Tuvalu	1,600,000	200,000	1,800,000	1,800,000				1,800,000
Vanuatu	1,600,000	200,000	1,800,000	1,800,000				1,800,000
Reg'l Orgs	500,000	500,000	1,000,000	-	1,000,000	-	-	1,000,000
SPREP		500,000	500,000		500,000			500,000
SOPAC/UNDP	500,000		500,000		500,000			500,000
Donors	88,000	-	88,000	-	-	88,000	-	88,000
Taiwan	15,000		15,000			15,000		15,000
ADEME/Tuvalu	73,000		73,000			73,000		73,000
NGOs	375,000	50,000	425,000	-	-	-	425,000	425,000
Tuvalu Alofa	375,000		375,000				375,000	375,000
Greenpeace		50,000	50,000				50,000	50,000
Total	25,467,000	2,516,000	27,983,000	26,470,000	1,000,000	88,000	425,000	27,983,000

122. The following shows the distribution of the baseline costs for the full-scale project (US\$).

Contributor	Type	Components					
		1	2	3	4	5	6
Nat'l Gov'ts	Cash	18,610,000	320,000	4,734,000	240,000	50,000	550,000
	In-kind	900,000	300,000	166,000	200,000	100,000	300,000
SPREP	Cash						
	In-Kind	100,000	50,000	100,000	100,000	50,000	100,000
SOPAC/UNDP	Cash					500,000	
	In-Kind						
NGOs	Cash	375,000					
	In-Kind						50,000
Donors	Cash	15,000	73,000				
	In-Kind						
TOTAL		20,000,000	743,000	5,000,000	540,000	700,000	1,000,000

123. The following table shows the budget cost sharing between GEF and the co-financiers of the full-scale project by components/activities:

No	COMPONENTS/ACTIVITIES	GEF	Nat'l Gov't	Reg'l Orgs	NGOs	Donors	Total
A	TECHNICAL CAPACITY DEVELOPMENT AND TECHNICAL SUPPORT						
A1	RE Resources Assessment						
A1.1	Development of a RE Resource Assessment Methodology	40,000	30,000				70,000
A1.2	Conduct of RE resources survey:						

No	COMPONENTS/ACTIVITIES	GEF	Nat'l Gov't	Reg'l Orgs	NGOs	Donors	Total
A1.2a	Production of a Pacific Wind and Solar Maps / Atlas	170,000	200,000	50,000			420,000
A1.2b	Biomass resource assessment	140,000	500,000				640,000
A1.2c	Geothermal resource assessment	20,000	2,000,000				2,020,000
A1.2d	Hydro resource assessment	150,000	150,000	10,000			310,000
A1.3	Design and development of a Regional RE Resource Database	33,000		20,000			53,000
A1.4	Development of a RE Resource Monitoring and Simulation Methodology	33,000		10,000			43,000
A1.5	Conduct of capacity building program on RE resources assessment	66,000	60,000				126,000
A2	Technical Support						
A2.1	Evaluation of the viability and requirements for the development of local RE service industry	55,000			7,500		62,500
A2.2	Conduct of training course on the design, feasibility evaluation, operation and maintenance of RE systems (electricity and non-electricity)	90,000	50,000		7,500		147,500
A2.3	Assessment of other value-added applications of RE resources	50,000					50,000
A2.4	Evaluation of RE system utilization best practices (electricity and non-electricity)	40,000					40,000
A2.5	Design and Initiation of a sustainable RE system R & D program	75,000					75,000
1.2.5	RE system equipment standards setting	77,000	20,000				97,000
A.3	RE demonstration projects						
A3.1	Techno-economic feasibility analyses of potential RE-based energy systems project	84,000	20,000			100,000	204,000
A3.2	Identification and evaluation of RET application demonstration requirements	66,000	60,000				126,000
A3.3	Courses on Actions for the removal of barriers to the successful implementation of RE demo projects	88,000	100,000				188,000
A3.4	Establishment of baseline data for the RE demonstration sites	66,000	60,000				126,000
A4.1	Design of RE demonstration projects	90,000	200,000				290,000
A4.2	Implementation of RE demonstration projects	25,000	16,000,000			175,000	16,200,000
A4.3	Monitoring and evaluation of RE demonstration projects	52,000				50,000	102,000
A4.4	Evaluation and dissemination of the results of the demonstration program	80,000	60,000	10,000		50,000	200,000
A4.5	Design of sustainable follow-up program for RE development	60,000					60,000
Sub-total		1,650,000	19,510,000	100,000	15,000	375,000	21,650,000
B	MARKET DEVELOPMENT						
B1.1	Supporting of investment project develop.	60,000	50,000				110,000
B1.2	Promotion of bulk RE system	20,000	50,000				70,000

No	COMPONENTS/ACTIVITIES	GEF	Nat'l Gov't	Reg'l Orgs	NGOs	Donors	Total
	equipment /component purchasing						
B1.3	Technical assistance on livelihood support	30,000	20,000	15,000	73,000		138000
B2.1	Assessment of local capabilities for RE services	30,000	20,000	15,000			65000
B2.2	Assessment of the viability of local manufacturing of RE system equipment and/or components	30,000	30,000				60000
B2.3	Introduction of a "One-Stop-Shop" service for RE market services	30,000	30,000				60000
B3.1	Development and promotion of ESCO-led RE system projects	35,000	150,000				185000
B3.2	Design and adoption of model fiscal incentives for RE investments	70,000	70,000				140000
B4.1	Training course on RE projects and RE-based livelihood / productivity projects financing	60,000	50,000	20,000			130000
B4.2	Establishment of Market for RESCO Services	35,000	150,000				185000
Sub-total		400,000	620,000	50,000	73,000	0	1,143,000
C	INSTITUTIONAL STRENGTHENING						
C1.1	Conduct of training in Integrated Energy Planning	100,000	250,000	25,000			375,000
C2.1	Establishment of RE Policy Committees	30,000	250,000	25,000			305,000
C3.1	Strengthening of Energy Offices in PICs	1,395,000	4,000,000	50,000			5,445,000
C3.2	Conduct of a detailed study of Energy Supply and Consumption in the PICs	80,000	250,000				330,000
C3.3	Development of a RE planning model	70,000	150,000				220,000
Sub-total		1,675,000	4,900,000	100,000	0	0	6,675,000
D	FINANCING SUPPORT						
D1.1	RE business financing capacity building	50,000	70,000	30,000			150,000
D1.2	Assistance for accessing local financing	50,000	50,000				100,000
D1.3	Establishment of RE financing facility in PICs	50,000	50,000	35,000			135,000
D1.4	Design and implementation of smart RE financing schemes	50,000	55,000				105,000
D2.1	Service provision to RE financing applicants	50,000	50,000	15,000			115,000
D2.2	Evaluation of the RE financing assistance programme	50,000	55,000				105,000
D2.3	Financing Schemes review	50,000	50,000				100,000
D2.4	Sustainable follow up program design	50,000	60,000	20,000			130,000
Sub-total		400,000	440,000	100,000	0	0	940,000
E	POLICY AND REGULATORY SUPPORT						
E1.1	Formulation and implementation of national energy policy	30,000	10,000				40,000
E1.2	Conduct of RE Policy Review	10,000	10,000	55,000			75,000
E1.3	RE policy analyses	35,000	15,000	100,000			150,000

No	COMPONENTS/ACTIVITIES	GEF	Nat'l Gov't	Reg'l Orgs	NGOs	Donors	Total
E2.1	Study on RE-based livelihood and productivity projects support policy	10,000	35,000				45,000
E2.2	Evaluation of the national energy policy implementation	40,000	20,000	150,000			210,000
E3.1	RE electricity policy study	25,000	10,000	50,000			85,000
E3.2	RE electricity pricing study	25,000	10,000	120,000			155,000
E4.1	Legislation on RE system Equipment / Components Standards	25,000	20,000				45,000
E5.1	Conduct of RE promotion workshops	50,000	20,000	75,000			145,000
Sub-total		250,000	150,000	550,000	0	0	950,000
F	INFORMATION AND AWARENESS ENHANCEMENT						
F1.1	Establishment of a RE information centre	60,000	60,000	10,000			130,000
F1.2	Establishment and Implementation of an integrated RE information exchange service	50,000	50,000	5,000			105,000
F1.3	RE advocacy and Promotion	200,000	200,000	25,000		20,000	445,000
F1.4	Information campaigns on RE technology applications	250,000	220,000	20,000		20,000	510,000
F1.5	RE Website development	20,000	55,000	5,000		10,000	90,000
F2.1	Regional RE awards program	50,000	45,000	5,000			100,000
F3.1	Design and conduct of a RE technology education program	60,000	70,000	15,000			145,000
F3.2	Design and implementation of RE training program	160,000	150,000	15,000			325,000
Sub-total		850,000	850,000	100,000	0	50,000	1,850,000
TOTAL		5,225,000	26,470,000	1,000,000	88,000	425,000	33,208,000

PART 1: Incremental Cost Matrix

Component	Baseline	Alternative	Increment
Component 1: Technical Capacity Development and Technical Support	Business as Usual PICs will continue to do RE resources assessment on an ad-hoc basis utilising methodologies that are not tailored for PICs. RE hardware installations are made without full consideration of the need for RE market expansion, competitiveness against fossil fuel, raising the productivity from RE utilisation, replication, sustainability, GHG emissions, etc.	Proposed Situation RE resources potentials at feasible projects sites and GHG emission level are accurately identified. New and rehabilitated installations of RE-based energy projects for power and productive uses on the ground.	Additional Features More understanding of the RE resources potentials and GHG emission level in PICs. Additional number of RE-based energy system installations (for power and productive use) on the ground.
	Domestic Benefits No solid foundation from which feasibility and investment studies can be based upon. No real reduction in GHG emissions.	Domestic Benefits More interests to further explore economic and technical feasibility of identified RE project sites (power and productive uses). Reduction in GHG emissions.	Domestic Benefits Additional understanding and interests to further explore economic and technical feasibility of identified sites. Additional reduction in GHG emissions and provision of cost-effective and sustainable sources of electricity.
	Global Benefits Lack of interests and investments on RE projects.	Global Benefits Cohesive and coordinated national and regional effort in reduction of the long-term growth in GHG emissions resulting from the combustion of fossil fuels.	Global Benefits Net increase in reduction of GHG emissions
Cost (US\$)	20,000,000	21,650,000	1,650,000
Component 2: RE Market Development	Business as Usual Development of RE continues to be driven by donor-funded programmes. Competitiveness of RETs against fossil fuel (or vice versa) continues to be based on guesses. Only a few private sector investors are involved in RE.	Proposed Situation A pipeline of ‘bankable’ projects addressing the business and sustainable angles of RE service delivery are readily available for financiers, donors and investors.	Additional Features Number of additional ‘bankable’ projects.

Component	Baseline	Alternative	Increment
	Domestic Benefits None.	Domestic Benefits Negotiations and financial and investment deals are struck for the financing of GHG reduction / RE projects.	Domestic Benefits New investment and financing agreements for new GHG reduction / RE projects.
	Global Benefits None.	Global Benefits A strong regional profile on RE-based power generation & productive uses of RE.	Global Benefits Reduced GHG emissions.
Cost (US\$)	743,000	1,143,000	400,000
Component 3: Institutional Strengthening	Business as Usual The promotion of RE continues but this is largely carried out on an ad-hoc basis based on ineffective plans and policies, outdated mandates and with unqualified and inexperienced staff.	Proposed Situation Improved local capacity, expertise and experiences in the PICs to (i) monitor, analyse and interpret their RE potentials; (ii) to plan, coordinate, manage, maintain and monitor RE projects; (iii) to carry out public awareness campaigns and (iv) to disseminate best practices. There will be more financially sustainable RE-based energy projects on the ground.	Additional Features New RE-based energy projects (power and productive uses) are designed, implemented and maintained by local experts. There is one additional local graduate from each PIC on GHG mitigation / RE studies.
	Domestic Benefits Limited in-country training opportunities, which are geared towards country-specific needs. RE projects suffer from the absence of legal, institutional, economic and financial advice.	Domestic Benefits Sufficient numbers of local training opportunities are delivered based on local needs and available target audiences. More advice given to projects on the ground.	Domestic Benefits More civil servants, private sector and rural community people are given hands-on training based on local circumstances, language and projects. Additional advice given to projects on the ground.
	Global Benefits Benefits from further assistance to reduce GHG emissions are not sustainable. Early failures of RE projects.	Global Benefits Benefits from further assistance to reduce GHG emissions are sustainable. More successful RE-based energy (power and productive uses) projects on the ground.	Global Benefits GHG emissions reduction. Additional commercially viable RE-based energy projects (power and productive uses) on the ground.
Cost (US\$)	5,000,000	6,675,000	1,675,000

Component	Baseline	Alternative	Increment
Component 4: Financing Support	Business as Usual The financing institutions will continue not to give innovative financing schemes to RE due to their lack of understanding of REs. Financing of RE projects will continue to be from 'general funds' rather than a special fund for RE development only.	Proposed Situation A source of capital for financing RE-based energy system (power and productive uses) projects.	Additional Features An operational regional sustainable capital fund for financing RE-based energy system (power and productive uses) projects.
	Domestic Benefits GHG mitigation projects are not considered as priority RE projects for financing.	Domestic Benefits Feasible RE-based energy projects are financed. Savings in imported fossil fuels	Domestic Benefits New RE-based energy system projects are financed. Savings in imported fossil fuels
	Global Benefits No additional RE-based energy projects on the ground, hence, no GHG emissions reduction.	Global Benefits A strong regional profile on RE-based power generation & productive uses of RE. Reduction in GHG emissions	Global Benefits Reduced GHG emissions
Cost (US\$)	540,000	940,000	400,000
Component 5: Policy and Regulatory Support	Business as Usual Absence of the necessary legislative tools, policies, and RE development and GHG mitigation targets in some PICs. The policies, which have been adopted in some PICs, will continue to be ineffective.	Proposed Situation Legislative tools, policies, RE development and GHG mitigation targets are in place	Additional Features New legislations, policies and targets on RE development & utilization are adopted.
	Domestic Benefits RE development and application efforts continue with no sense of direction.	Domestic Benefits RE effort are carried out based on clear legislative and adopted policy directions and targets.	Domestic Benefits Additional cohesiveness of local effort to have successful GHG reduction from RE projects.
	Global Benefits No GHG emissions reduction.	Global Benefits Increased opportunities for private sector investments on RE-based energy systems (power and productive uses)	Global Benefits GHG Emissions reduction· International RE business opportunities
Cost (US\$)	700,000	950,000	250,000

Component	Baseline	Alternative	Increment
Component 6: Information and Awareness Enhancement	Business as Usual PIC s will continue to be unaware of best practices and success stories thus making it extremely difficult to raise the profile, the confidence and the approval rating of RE in the political spheres, in the donors and investors communities and to the public at large.	Proposed Situation PIC s are aware of best practices and success stories thus raising the profile, the confidence and the approval rating of RE in the political spheres, in the donors and investors communities and to the public at large.	Additional Features Additional awareness, confidence and approval rating of RE.
	Domestic Benefits Best practices and success stories are either ignored or ineffectively covered.	Domestic Benefits Effective coverage and dissemination of best practices and success stories	Domestic Benefits Enhanced information dissemination and understanding
	Global Benefits Confidence and approval rating of RE-based energy system projects remain low. No GHG emissions reduction.	Global Benefits Accelerated increase in reduction of GHG emissions; Improved local and regional competency on RET applications.	Global Benefits Net increase in GHG emissions reduction
Cost (US\$)	1,000,000	1,850,000	850,000
TOTAL COST (US\$)	27,983,000	33,208,000	5,225,000

PART II: LOGICAL FRAMEWORK ANALYSIS

124. The project planning matrix (PPM) presented below was developed during the MSP Results Workshop held in Apia, Samoa on 5-9 July 2004. It reflects a consensus achieved among representatives from the 15 countries that have participated in the PIREP of the expected activities and outcomes/outputs of the planned comprehensive regional RE project, which is the PIGGAREP.

Strategy	Objectively Verifiable Indicators (OVI)	Means of Verification (MoV)	Critical Assumptions and Risks
I. DEVELOPMENT OBJECTIVE/GOAL			
Reduction of the growth rate of GHG emissions from fossil fuel use in the PICs through the widespread and cost effective use of RE resources and application of feasible RE technologies	GHG emissions in PICs reduced by at least 2 million tons by 2015. The potentials of available and feasible RE resources in the PICs are assessed, developed and used effectively for both electricity and non-electricity applications	Monitoring and evaluation report on avoided GHG emissions with respect to baseline Project follow-up report, statistical reports and official publications	Support from the PIC Governments throughout project life Political stability in the region Effective and efficient country teams and the backstopping support and cooperation of regional and international experts.
II. IMMEDIATE OBJECTIVES/OUTCOMES			
A. Improved knowledge about RE resources potential and increase the number of successful commercial RE applications on the ground	A1. At least 10 resource monitoring studies completed at 10 sites by 2010 A2. At least 10 RE projects commercially sustainable in 10 PICs by 2010	A1. Resources monitoring reports A2. Monitoring & Evaluation based on data from the project sites	Support from the projects sites, the landowners and the meteorology offices
B. Expansion of the market for RET applications	B1. At least one RET company in each PIC by 2010 B2. At least 100 MW of additional RE installed in PICs by 2015	B1. Registry of companies, files from responsible ministry B2. Power Utilities statistics	Feasible RE-based energy projects will be identified. Productive use projects are identified and are commercially viable.
C. Enhancement of institutional capacity to design and implement RE	C1. At least one RE project designed and implemented by local experts in each PIC by 2010 C2. At least ten energy offices have established national energy coordination committees, have clear mandates, strategies and action plans	C1. Annual Reports of the Energy Offices	Energy gets a higher profile in the PIC governments
D. Improvement of the availability of funding for existing and new RE projects	D1. At least US\$100 million of new investments in RE by 2015	D1. Bank records, project files at responsible ministry or agency national surveys	Successful projects on the ground are convincing to banks, investors and the private sector
E. Strengthened legal and regulatory structures in the	E1. All PICs have a relevant Act / provisions (Energy and Environment) in place by 2010 that	E1. Government gazettes E2. Legal records and parliamentary	PICs governments are supportive of the new Act to promote RE

Strategy	Objectively Verifiable Indicators (OVI)	Means of Verification (MoV)	Critical Assumptions and Risks
energy and environmental sectors	supports RE development and utilization and the formulations of RE regulations and policies	records	
F. Increased awareness and knowledge about RE among key stakeholders	F1. Majority of energy sector professionals, politicians, investors, senior government officials and the general public are aware of the benefits of RE and local success stories by 2010. F2. Technical, economic, social and environmental characteristic of 10 RE projects comprehensively documented and accessible via internet based information system by 2010 F3. At least 75 % approval rating for RE technologies and projects in PICs by 2010	F1. National surveys within project M&E F2. Number of hits recorded at the sites F3. Independent survey in the framework of the project Monitoring & Evaluation	F1. Effective outreach methods are employed. F2. Access to the internet continues to increase in the PICs F3. There are more convincing success stories on the ground
III. OUTPUTS			
A1. Better understanding of RE resources potential A2. Quality of delivery of RE services improved A3. RE projects made more sustainable A4. Design of RE systems improved A5. Socially and environmentally sound application of RET established	A1. At least 10 resource monitoring studies completed at 10 sites by 2010 A2. Collection efficiency (>90%) for each of the identified demonstration project by 2008 A3. At least 8 existing RE projects are assessed and technical assistance provided A4. At least 2 training courses on RE system designs conducted annually A5. Technical standards for RE systems components and their installations are adopted by 8 PICs in 2009.	A1. Resources monitoring reports A2. Monitoring and evaluation reports A3. Assessment reports and project records A4. Reports of the training courses A5. Legal and Parliamentary records	A1. Landowners support A2. Improved service delivery is matched with improved fee payment A3. Technical assistance provided is effective A4. Trained staff are retained A5. Governments are supportive of the standards
B1. Increased demand for RETs stimulated B2. Private sector participation in RET supply and operation mobilized B3. Improved access of RET in rural areas B4. Technical capacity and expertise for O & M made available in rural areas	B1. 20 new 'bankable RE projects' / 100 MW new projects identified and funded by 2015 B2. 5 new manufacturers of RE systems and 3 'one-stop-shops' established in the PICs by 2008. B3. 5 new RESCOs and 5 rural RE suppliers established in the PICs by 2008 B4. 5 new RESCOs established in the PICs by 2008 and at least 300 rural residents receiving basic O & M training	B1. Feasibility study reports B2. Register of Companies and Businesses and the Annual Reports of the energy offices. B3. Register of Companies and Businesses B4. Register of Companies and Businesses and Training Reports	B1. No significant decrease in fossil fuel prices B2. Governments provide incentives for the private sector B3. Governments provide incentives to the private sector B4. Governments provide incentives to the private sector and training is in the local language.
C1. Good governance and better management	C1. All new RE projects are components of an adopted national energy / climate change	C1. Adopted national energy and/or climate change mitigation plans	C1. National energy offices are effective and proactive

Strategy	Objectively Verifiable Indicators (OVI)	Means of Verification (MoV)	Critical Assumptions and Risks
<p>accountability established at national level</p> <p>C2. Private sector involvement facilitated</p> <p>C3. Appropriate staff levels and sufficient resources for effective RE programs established</p>	<p>mitigation plan by 2010</p> <p>C2. National coordinating mechanisms, including the private sector, established in all PICs by 2008</p> <p>C3. All Energy Offices are staffed with at least 3 graduates, have clear mandates, have reliable databases for planning and policy works and have adopted energy plans by 2010.</p>	<p>C2. Minutes of the meeting of the coordination committees.</p> <p>C3. Annual Reports of the Energy Offices.</p>	<p>C2. There are continuous interest by the private sector</p> <p>C3. Government support.</p>
<p>D1. Improved access to financing for small rehabilitation and failing projects</p> <p>D2. Improved access to and availability of financing for new RE projects</p>	<p>D1. At least US\$5 million is invested on rehabilitating existing projects by 2010.</p> <p>D2. Feasibility of a regional/national RE fund is studied and capital fund of US\$10 million is available for new RE projects by 2010</p>	<p>D1. Bank and energy office records</p> <p>D2. Bank and energy office records</p>	<p>D1. Investors have confidence on RE</p> <p>D2. Investors have confidence on RE</p>
<p>E1. National Energy / Climate Change policies and guidelines are assessed, (re)formulated and adopted</p> <p>E2. Appropriate incentives to encourage RE-based livelihood and productivity projects are in place</p> <p>E3. Real economic costs of energy sources, electricity and other forms of energy are known</p> <p>E4. Legislation of RE system equipment/component standards developed and implemented</p> <p>E5. Effective coordination of RE and other national sustainable development effort</p>	<p>E1. At least 8 PICs adopt RE/CC policies and guidelines by 2008</p> <p>E2. Specific policies and incentives for RE-based livelihood and productivity projects are in place in 8 PICs by 2008</p> <p>E3. Outcome of energy pricing studies available to all PICs for planning and policy formulations by 2008</p> <p>E4. Technical standards for RE systems components and their installations are adopted by 8 PICs in 2009</p> <p>E5. RE features prominently in national plans and strategies as well as in submissions to regional and international for a</p>	<p>E1. Cabinet decisions</p> <p>E2. Cabinet decisions</p> <p>E3. Energy Pricing study reports</p> <p>E4. Legal and Parliamentary Records</p> <p>E5. Government plans and reports</p>	<p>E1. Cabinet approves RE/CC policies and guidelines</p> <p>E2. Cabinet approves incentives and policies</p> <p>E3. Cooperation of energy suppliers / service providers</p> <p>E4. Effective consultation between public and private sector agencies</p> <p>E5. Effective local coordination</p>
<p>F1. Awareness of best practices of RE projects created amongst key</p>	<p>F1. Each PIC has a regular RE public awareness program and a RE website, by 2007</p> <p>F2. Each PIC has an annual RE award program</p>	<p>F1. Project monitoring and evaluation reports</p> <p>F2. Energy Office reports</p>	<p>F1. No government restrictions on the free flow of information</p> <p>F2. There is active local</p>

Strategy	Objectively Verifiable Indicators (OVI)	Means of Verification (MoV)	Critical Assumptions and Risks
stakeholders F2. Effective promotion and recognition of innovative and successful RE initiatives F3. RE training programs designed and implemented	operational by 2007 F3. Training programs designed and 2 national training workshops conducted annually in each PICs with a total roll of 2000 trainees by 2010	F3. Training reports	participation by all stakeholders F3. Training contents are practical and easily understood

SECTION III: Total Budget and Work Plan

DETAILED BREAKDOWN OF GEF AND CO-FINANCING BUDGET AND WORK PLAN

Part 1: Total Project Workplan and Budget under GEF Financing

Award ID	BU WSM10 00044633
Award Title	PIMS 3462 CC FSP: : Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)
Project ID	00052573
Project Title	PIMS 3462 CC FSP: : Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)
Executing Agency	Secretariat of the Pacific Regional Environmental Programme

Project Outcome / Atlas Activity	Responsible Party	Source of Funds	ERP/Atlas Budget Code	ERP/Atlas Budget Description	Planned Budget					Total
					Amount (USD)	Amount (USD)	Amount (USD)	Amount (USD)	Amount (USD)	
					2006	2007	2008	2009	2010	
Outcome 1: Learning, Evaluation and Adaptive Management Increased	SPREP	GEF	72100	Service Contract - Learning	40,000	40,000	40,000	40,000	40,000	200,000
			71200	International Consultants	95,000	95,000	95,000	95,000	95,000	475,000
			71300	Local Consultants	4,000	4,000	4,000	4,000	4,000	20,000
			71400	Contractual Services - Ind	4,000	4,000	4,000	4,000	4,000	20,000
			71600	Travel	30,000	20,000	20,000	20,000	20,000	110,000
			72100	Contractual Services - Co.	4,000	4,000	4,000	4,000	4,000	20,000
			72200	Equipment and Furniture	30,000	0	0	0	0	30,000
			72400	Communication & Audio Visual Equipments	10,000	4,000	4,000	4,000	0	22,000
			72500	Supplies	10,000	10,000	10,000	10,000	10,000	50,000
			72800	Info Tech Equipment	10,000	5,000	0	0	0	15,000
74200	Audio Visual & Print Prod	15,000	14,000	19,000	25,000	10,000	83,000			

			74200	Audio Visual & Print Prod		20,000	30,000	40,000	50,000	140,000	
				Sub-total						1,340,000	
Outcome 5: Improvement in the availability of funding for existing and new projects	SPREP	GEF	72100	Service Contract - Learning			5,000	5,000	5,000	15,000	
			71200	International Consultants		20,000	40,000	50,000	50,000	160,000	
			71300	Local Consultants	10,000	20,000	25,000	25,000	20,000	100,000	
			71600	Travel	3,000	4,000	10,000	10,000	10,000	37,000	
			72100	Contractual Services- Co.		3,000	3,000	2,000		8,000	
				Sub-total							320,000
Outcome 6: Strengthened legal and regulatory structures in the energy and environment sectors	SPREP	GEF	72100	Service Contract - Learning		15,000	5,000	5,000	5,000	30,000	
			71200	International Consultants		45,000	25,000	8,000		78,000	
			71300	Local Consultants		35,000	10,000	5,000		50,000	
			71600	Travel	5,000	15,000	5,000	2,000		27,000	
			72100	Contractual Services- Co.		10,000	3,000	2,000		15,000	
				Sub-total							200,000
Outcome 7: Increased knowledge and awareness about RE among stakeholders	SPREP	GEF	72100	Service Contract - Learning		15,000	20,000	20,000	30,000	85,000	
			71200	International Consultants		10,000				10,000	
			71300	Local Consultants	15,000	15,000	15,000	15,000	10,000	70,000	
			71600	Travel	2,000	2,000	2,000	2,000	2,000	10,000	
			72100	Contractual Services- Co.	5,000	5,000	5,000	5,000	5,000	25,000	
			72200	Equipment and Furniture	20,000	25,000	25,000	25,000	25,000	120,000	
			72400	Communication & Audio Visual Equipments	5,000	30,000	15,000	15,000	15,000	80,000	
			72500	Supplies	10,000	20,000	20,000	20,000	20,000	90,000	
			72800	Info Tech Equipment	10,000	20,000	15,000	15,000	15,000	75,000	
			74200	Audio Visual & Print Prod	20,000	40,000	20,000	15,000	20,000	115,000	
				Sub-total							680,000

GRAND TOTAL

5,225,000

Part 2: Total Project Workplan and Budget under Other Co-financing sources

Award ID	BU WSM 10 - 00044633
Award Title	Pims 3462 CC FSP: : Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)
Project ID	00052573
Project Title	Pims 3462 CC FSP: : Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)
Executing Agency	Secretariat of the Pacific Regional Environmental Programme

Project Outcome / Atlas Activity	Responsible Party	Source of Funds	ERP/Atlas	ERP/Atlas	Planned Budget in 1000s					Total
					Amount (USD)	Amount (USD)	Amount (USD)	Amount (USD)	Amount (USD)	
					Year 1	Year 2	Year 3	Year 4	Year 5	
Outcome 1: Learning, Evaluation and Adaptive Management Increased	SPREP	SPREP	71300	Local Consultants	80,000	80,000	80,000	80,000	80,000	400,000
			71600	Travel	20,000	20,000	20,000	20,000	20,000	100,000
				Sub-total						
Outcome 2: Improved knowledge about RE resources potential and increase the number of successful commercial applications on the ground	National Governments and Others	National Governments and Others	72100	Service Contract - Learning	25,000	25,000	25,000			75,000
			71200	International Consultants	71,000	1,475,000	1,692,000	1,082,000		4,320,000
			71300	Local Consultants	60,000	325,000	325,000	165,000	10,000	885,000
			71600	Travel	15,000	120,000	120,000	30,000		285,000
			72100	Contractual Services-Co.		15,000	45,000	10,000		70,000
			72200	Equipment and Furniture		4,050,000	4,050,000	6,000,000		14,100,000
			72500	Supplies	15,000	10,000	10,000		40,000	75,000
			72800	Info Tech Equipment		20,000				20,000
			74200	Audio Visual & Print Prod					70,000	70,000
				Sub-total						
Outcome 3: Expansion of the market for RET applications	National Governments and Others	National Governments and Others	71200	International Consultants		150,000	140,000			290,000
			71300	Local Consultants	10,000	120,000	140,000			270,000
			71600	Travel		30,000	33,000			63,000
			72100	Contractual Services-Co.	5,000	10,000	55,000			70,000

				Sub-total						693,000
Outcome 4: Enhancement of the institutional capacity to design and implement RE	National Governments	National Governments	72100	Service Contract - Learning		45,000	50,000	45,000		140,000
			71200	International Consultants		100,000	25,000	5,000		130,000
			71300	Local Consultants	25,000	90,000	90,000	115,000	25,000	345,000
			71400	Contractual Services - Ind.	150,000	150,000	150,000	150,000	150,000	750,000
			71600	Travel	15,000	50,000	35,000	40,000	15,000	155,000
			72100	Contractual Services-Co.	15,000	15,000	15,000	20,000	15,000	80,000
			72200	Equipment and Furniture	200,000	200,000	200,000	200,000	200,000	1,000,000
			72400	Communication & Audio Visual Equipments	80,000	80,000	80,000	80,000	80,000	400,000
			72500	Supplies	120,000	120,000	120,000	120,000	120,000	600,000
			72800	Info Tech Equipment	210,000	210,000	210,000	210,000	210,000	1,050,000
			74200	Audio Visual & Print Prod	50,000	50,000	50,000	50,000	50,000	250,000
				Sub-total						
Outcome 5: Improvement in the availability of funding for existing and new projects	National Governments and Others	National Governments and Others	72100	Service Contract - Learning		15,000	15,000	15,000		45,000
			71200	International Consultants		30,000	50,000	60,000	55,000	195,000
			71300	Local Consultants	10,000	40,000	40,000	30,000	40,000	160,000
			71600	Travel		6,000	9,000	10,000	5,000	30,000
			72100	Contractual Services-Co.		3,000	3,000	4,000		10,000
				Sub-total						
Outcome 6: Strengthened legal and regulatory structures in the energy and environment sectors	National Governments and SOPAC	National Governments and SOPAC	72100	Service Contract - Learning		11,000	7,000	7,000		25,000
			71200	International Consultants		222,000	175,000	25,000		422,000
			71300	Local Consultants		75,000	75,000			150,000
			71600	Travel		30,000	15,000	6,000		51,000
			72100	Contractual Services-Co.		2,000				2,000
				Sub-total						
Outcome 7: Increased knowledge and	National Governments	National Governments	72100	Service Contract - Learning	26,000	36,000	41,000	41,000	26,000	170,000

awareness about RE among stakeholders	and Others	and Others	71200	International Consultants		20,000				20,000
			71300	Local Consultants	26,000	20,000	20,000	20,000	20,000	106,000
			72100	Contractual Services-Co.		3,000	3,000	2,000		8,000
			72200	Equipment and Furniture	44,000	74,000	54,000	54,000	54,000	280,000
			72400	Communication & Audio Visual Equipments	6,000	44,000	14,000	14,000	14,000	92,000
			72500	Supplies	6,000	29,000	14,000	14,000	14,000	77,000
			72800	Info Tech Equipment	3,000	21,000	11,000	11,000	11,000	57,000
			74200	Audio Visual & Print Prod	5,000	31,000	18,000	18,000	18,000	90,000
				Sub-total						
GRAND TOTAL									27,983,000	

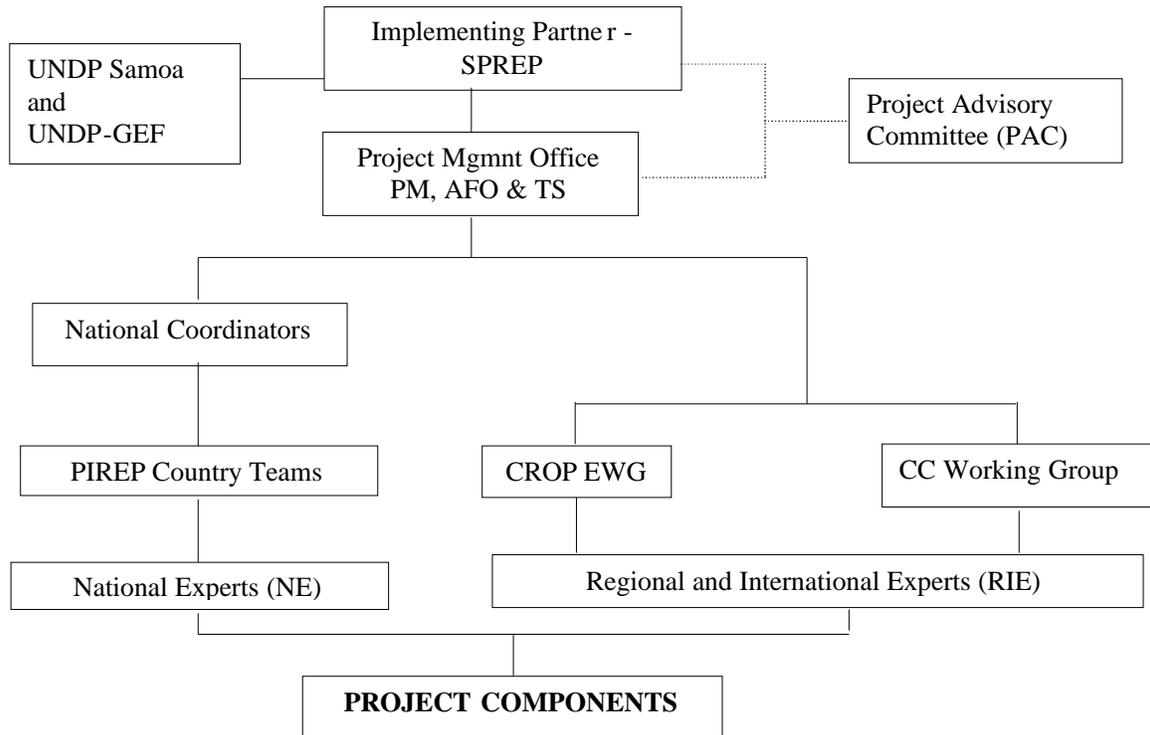
Total co-financing in the ProDoc is more than in the approved Project Brief due to increased contributions from National Governments, Donors and NGOs.

SECTION IV: ADDITIONAL INFORMATION

PART I: Other agreements

Please find individual Letter of Commitments from Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, Greenpeace, Alofa Tuvalu, SOPAC and the University of Technology in PNG.

PART II: Organizational Chart of the Project



PART III: Terms of References for Key Project Staff and Main Sub-contracts

TERMS OF REFERENCE

PROJECT MANAGER (PM)

The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) is aimed at reducing the growth rate of GHG emissions from fossil fuel use in the Pacific Island Countries (PICs) through the removal of the barriers to the widespread and cost effective use of feasible renewable energy technologies (RETs). It consists of various interventions whose outputs will contribute to the removal of the major barriers to the widespread utilization of commercially viable RETs. The project is expected to bring about in the PICs: (1) Increased number of successful commercial RE applications; (2) Expanded market for RET applications for power generation and productive uses; (3) Enhanced institutional capacity to design, implement and monitor RE projects; (4) Availability and accessibility of financing to existing and new RE projects; (5) Strengthened legal and regulatory structures in the energy and environmental sectors; and, (6) Increased awareness and knowledge on RE and RETs among key stakeholders. PIREP is a 5-year project financed by the Global Environmental Facility (GEF), with the United Nations Development Programme (UNDP) as the implementing agency, and executed by the Secretariat of the Pacific Regional Environment Programme (SPREP).

Background

The Pacific Island Countries (PICs) are currently heavily dependent on fossil fuels, with petroleum accounting for an estimated 90% of the commercial energy consumption. Petroleum consumption is largely responsible for the Greenhouse Gases (GHG) emission in the PICs. A regional synthesis of the PICs GHG inventories from their first National Communication under the United Nations Framework Convention on Climate Change (UNFCCC) highlighted that the GHG emission per capita in the PICs is almost 25% of the global Carbon Dioxide (CO₂) emissions per capita arising from fossil fuel combustion. Most of the GHG emissions in the PICs are from the combustion of fossil fuels for power generation and in transportation. Power generation is only from fossil fuel in some PICs and the transport sector runs 100% on fossil fuel.

RETs have been known in the region for more than three decades; however, there has not been a comprehensive regional effort to promote them for mitigating GHG emission. Although a number of small-scale rural renewable electrification and energy efficiency projects have been carried out in the PICs over the last two decades, their impacts in terms of reducing the growth rate of GHG emissions have been minimal.

The fact that the PICs are small in size, situated in the Tropics, along the Pacific Rim of Fire and surrounded by the vastest ocean on Earth makes the PICs just about the region with the highest RE potential per capita. Studies carried out during the project preparatory stage indicated that the PICs could reduce the CO₂ emissions by at least 2 million tons by 2015 by utilising commercially viable RE technologies. However this potential cannot be fully realised unless barriers identified during the preparatory phase are removed.

The PIGGAREP is the first attempt in the PICs to comprehensively address the inter-related barriers to the widespread utilisation of commercially viable RETs. It is a collective attempt to address the technical, financial, market, institutional, policy and awareness barriers at the same time since they

are interrelated and intertwined. The PIGGAREP will therefore involve a high degree of coordination with related activities of national, regional and international stakeholders.

Duties & Responsibilities

The PM will be responsible and reporting to the SPREP Director or his/her designated representative through the Manager of the Pacific Futures Programme. He/She will liaise with the National Project Coordinators, PIGGAREP Country Teams, Task Specialists and the Project Advisory Committee (PAC) as well as UNDP-Apia, in coordinating the implementation of the annual work plan for the project. The work plan will provide guidance on the day-to-day implementation of the project activities and on the integration of parallel co-financing initiatives. He/She will be responsible for the project execution, which will be fully in line with UNDP national execution procedures, as described in the NEX Manual, and for the achievement of project development objectives. He/She will also be responsible for providing to UNDP all required reports, including the submission of work plans and financial reports. The SPREP on the advice of the PM shall recruit as appropriate experts to undertake activities at regional and national levels in cooperation with the participating PICs and the PAC. The PM will work with Task Specialists and an Administrative and Financial Officer (AFO) who will assist with the delivery of project activities. The PM shall be responsible for all substantive, managerial and financial reports from the project. In the context of SPREP, the PM will work exclusively with the PIGGAREP.

The PM will consult and coordinate closely with the Resident Representative of the UNDP country office in Samoa or his/her designated representative on developments and progress on the project.

In particular the PM will:

- § Serve as the Head of the Project Management Office (PMO) housed in SPREP;
- § Assume overall responsibility for the day-to-day management and implementation of all project activities and ensure the realization of project objectives in accordance with the ProDoc and UNDP's guidelines for National Execution (NEX).
- § Assume overall responsibility for all the reporting obligations of the project to UNDP, including inception phase report, annual work plans and budgets, quarterly progress and financial reports, APR/PIR reports, multi-partite review meeting papers and annual project audit reports, and all other reporting requirements as per standard UNDP/GEF procedures.
- § Ensure effective coordination of all PIGGAREP activities, both incremental and baseline (particularly co-financed) activities.
- § Coordinate and monitor the implementation of the activities described in the work plan.
- § Assume overall responsibility for all project consultation meetings including meetings with the National Coordinators, Task Specialists, donor roundtable meetings, multi-partite review meetings, an Inception Phase workshop and annual meetings of the PAC.
- § Coordinate in-country studies and activities with the PIGGAREP National Coordinators.
- § Coordinate regional and sub-regional studies and activities with the Task Specialists and the PIGGAREP National Coordinators.
- § Coordinate and manage all procurement requirements for GEF-funded services and supplies (e.g., contracts and consultancies in the project, including reviewing consultancy reports).
- § Provide guidance to contractors and consultants engaged by the project.
- § Facilitate liaison and networking between and among the 11 PIGGAREP Country Teams, regional organisations, key stakeholders and other individuals involved in project implementation.

- § Foster and establish strong links with all project partners, particularly those who are implementing and/or funding co-financed activities and other related programmes and projects in the PICs, in particular the proposed UNDP-GEF MSPs in Palau (SEDREA), RMI (ADMIRE) and, SOPAC (PESTRAN).
- § Ensure regular and timely receipt of progress reports on the various parallel funded activities of the project
- § Assume overall responsibility for the widespread dissemination of PIGGAREP best practices and experiences as well as highlighting GEF's and UNDP's roles in the project.
- § Ensure the PIGGAREP is consistent with the Pacific Islands Framework for Action on Climate Change and the Pacific Islands Energy Policy.
- § Act as Secretary to the Project Advisory Committee.

Deliverables

The PM is responsible for the submission of the following deliverables, among others: a) Project Inception Report; b) Project Progress and Financial reports, c) APR/IPR reports, d) meeting and training workshop reports, e) resource assessment reports, f) feasibility study reports, g) performance reports on the hardware demonstration projects; (h) mid-term evaluation report; (i) final evaluation report; and, (j) reports on the implementation of all project activities (incremental and baseline).

Duration

The duration of the project is over a 60 months period; however, the PM will be recruited on a three-year contract in the first instance, as is the normal practice among CROP agencies and to be renewed for the remainder of the project based upon mutual agreement.

Qualifications & Experience

The PM shall have the following basic required qualifications and expertise:

- § Advanced university degree (at least M.Sc. or equivalent) in engineering, energy, environmental management or other field relevant to the project;
- § Extensive knowledge and experience with the climate change and energy issues of the PICs;
- § Proven track record of project management experience with GEF- and UNDP-funded projects or similar regional/multi-country projects in small island developing countries;
- § Demonstrated very good and adequate capacity for project leadership and management;
- § Ability to manage the work of consultants/sub-contractors
- § Proven ability to work as part of an interdisciplinary and/or multi-cultural team
- § Ability to meet project deadlines; and an ability to work live and work within Pacific island communities.
- § Practical experience with GEF funded renewable energy projects/programmes; and,
- § Excellent working knowledge of English

TERMS OF REFERENCE

ADMINISTRATIVE / FINANCIAL OFFICER (AFO)

Background

The Pacific Island Countries (PICs) are currently heavily dependent on fossil fuels, with petroleum accounting for an estimated 90% of the commercial energy consumption. Petroleum consumption is largely responsible for the Greenhouse Gases (GHG) emission in the PICs. A regional synthesis of the PICs GHG inventories from their first National Communication under the United Nations Framework Convention on Climate Change (UNFCCC) highlighted that the GHG emission per capita in the PICs is almost 25% of the global Carbon Dioxide (CO₂) emissions per capita arising from fossil fuel combustion. Most of the GHG emissions in the PICs are from the combustion of fossil fuels for power generation and in transportation. Power generation is only from fossil fuel in some PICs and the transport sector runs 100% on fossil fuel.

RETs have been known in the region for more than three decades; however, there has not been a comprehensive regional effort to promote them for mitigating GHG emission. Although a number of small-scale rural renewable electrification and energy efficiency projects have been carried out in the PICs over the last two decades, their impacts in terms of reducing the growth rate of GHG emissions have been minimal.

The fact that the PICs are small in size, situated in the Tropics, along the Pacific Rim of Fire and surrounded by the vastest ocean on Earth makes the PICs just about the region with the highest RE potential per capita. Studies carried out during the project preparatory stage indicated that the PICs could reduce the CO₂ emissions by at least 2 million tons by 2015 by utilising commercially viable RE technologies. However this potential cannot be fully realised unless barriers identified during the preparatory phase are removed.

The PIGGAREP is the first attempt in the PICs to comprehensively address the inter-related barriers to the widespread utilisation of commercially viable RETs. It is a collective attempt to address the technical, financial, market, institutional, policy and awareness barriers at the same time since they are interrelated and intertwined. The PIGGAREP will therefore involve a high degree of coordination with related activities of national, regional and international stakeholders.

Duties & Responsibilities

The AFO, working under the direct supervision of the PM, will be responsible for all the administrative, secretarial and financial matters of the PIGGAREP. The AFO will be responsible for the project's record keeping systems, meetings and travel arrangements and the processing and reporting of all project incomes and expenditures. The AFO will work closely with the PM, UNDP and the PIGGAREP National Coordinators.

In particular the AFO will:

- § Conduct the secretarial activities of the project including correspondence, filing and drafting minutes of meetings.
- § Assist the PM as the Secretary to the Project Advisory Committee.

- § Responsible for arranging the travel and accommodation logistics for the annual Project Advisory Committee meetings and all other project-related meetings and associated travels.
- § Work together with the SPREP Project Accountant on the requests for the advance of projects funds from UNDP to SPREP and any required payments from SPREP to project-implementing partners.
- § Work together with the PIGGAREP National Coordinators and project-implementing partners on the reporting of how funds advanced were spent and ensure timely financial reporting to the UNDP.
- § Assist the PM in ensuring regular and timely receipt of progress reports on the various parallel funded activities of the project
- § Liaise closely with the PIGGAREP National Coordinators on their work programmes and budgets and assist to make funds available on time.
- § Assist with the annual audit of the project.
- § Provide technical assistance to PICs on how to effectively and efficiently meet their PIGGAREP financial reporting requirements.
- § Assist in the organisation and facilitation of M&E activities of the project.

Deliverables

The AFO will assist the PM in the facilitation, preparation, and submission of all the project deliverables.

Duration

The duration of the project is over a 60 months period; however, the AFO will be recruited on a three-year contract in the first instance, as is the normal practice among CROP agencies and to be renewed for the remainder of the project based upon mutual agreement.

Qualifications

The AFO shall have the following basic required qualifications and expertise:

- § University degree in accounting or business management and some working experience in office management or secretarial responsibilities.
- § Previous experience in a management team for GEF and UN-funded projects or similar regional/multi-country projects in small island developing countries;
- § Excellent working knowledge of English;
- § Proven ability to work as part of an interdisciplinary and/or multi-cultural team
- § Ability to meet project deadlines
- § Ability to live, travel and work within Pacific island communities
- § Some knowledge and experience with the climate change and energy issues of the Pacific Island Countries is an advantage.

TERMS OF REFERENCE

PIGGAREP NATIONAL COORDINATOR (PNC)

Background

The Pacific Island Countries (PICs) are currently heavily dependent on fossil fuels, with petroleum accounting for an estimated 90% of the commercial energy consumption. Petroleum consumption is largely responsible for the Greenhouse Gases (GHG) emission in the PICs. A regional synthesis of the PICs GHG inventories from their first National Communication under the United Nations Framework Convention on Climate Change (UNFCCC) highlighted that the GHG emission per capita in the PICs is almost 25% of the global Carbon Dioxide (CO₂) emissions per capita arising from fossil fuel combustion. Most of the GHG emissions in the PICs are from the combustion of fossil fuels for power generation and in transportation. Power generation is only from fossil fuel in some PICs and the transport sector runs 100% on fossil fuel.

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Duties and Responsibilities

The PNC will be contracted by the PIC government and hosted in a designated agency as agreed to by SPREP and the PIC government. This position will be fully funded by the PIGGAREP. Under the direction of the designated government agency and in consultation with the PIGGAREP Country Team and the PM, the PNC shall carry out the following tasks that would be assigned to him/her:

- § Serve as the technical focal point for the national level activities of the PIGGAREP within the designated government agency;
- § Responsible for the day-to-day management and implementation of all national project activities;
- § Responsible for the formulation and preparation of annual and quarterly work plans and budgets;
- § Ensure the achievement of project objectives in accordance with the ProDoc and the country-specific annual and quarterly work plans;

- § Assume overall responsibility for all the reporting obligations of the project to the designated host government agency, the Country Team and PM/SPREP, including annual work plans and budgets, quarterly progress and financial reports.
- § Ensure an effective coordination of all PIGGAREP activities with all national project partners, particularly those who are implementing and/or funding co-financed activities in the country.
- § Coordinate and monitor the national activities described in the work plans.
- § Responsible for all project consultation meetings including a national Inception Phase meeting and meetings of the country team.
- § Serve as the national representative to the annual meetings of the PIGGAREP PAC.
- § Manage all necessary nationally-managed contracts and consultancies in the project, including reviewing consultancy reports.
- § Ensure regular and timely receipt of progress reports on the various parallel funded activities of the project at the national level
- § Coordinate in-country studies and activities.
- § Provide guidance to contractors and consultants.
- § Facilitate liaison and networking between and among the country team.
- § Foster and establish strong links with all national co-financing activities.
- § Assume overall responsibility for the widespread dissemination of PIGGAREP best practices and experiences as well as highlighting GEF's and UNDP's roles in the project.
- § Ensure that the national level PIGGAREP activities are consistent with national policies and strategies.

Deliverables

The PNC is responsible for the submission of the following deliverables: a) Project Progress and where required, financial reports, b) national meeting and training workshop reports, c) reports on all nationally-managed project studies and consultancies; and, (d) progress reports on the various parallel funded activities of the project at the national level.

Qualifications & Experience

The PNC shall have the following basic required qualifications and expertise:

- § An university degree or equivalent in energy, environment or a related field;
- § At least 5 years of project management/coordination experience;
- § Proven track record of project management/coordination experience with GEF- and UNDP-funded projects or similar national projects;
- § Ability to coordinate the work of consultants/sub-contractors
- § Proven ability to work as part of an interdisciplinary team
- § Ability to meet project deadlines
- § Practical experience with renewable energy projects/programmes;
- § Excellent interpersonal skills; and,
- § Excellent working knowledge of English.

TERMS OF REFERENCE

PIGGAREP COUNTRY TEAMS

Background

The Pacific Island Countries (PICs) are currently heavily dependent on fossil fuels, with petroleum accounting for an estimated 90% of the commercial energy consumption. Petroleum consumption is largely responsible for the Greenhouse Gases (GHG) emission in the PICs. A regional synthesis of the PICs GHG inventories from their first National Communication under the United Nations Framework Convention on Climate Change (UNFCCC) highlighted that the GHG emission per capita in the PICs is almost 25% of the global Carbon Dioxide (CO₂) emissions per capita arising from fossil fuel combustion. Most of the GHG emissions in the PICs are from the combustion of fossil fuels for power generation and in transportation. Power generation is only from fossil fuel in some PICs and the transport sector runs 100% on fossil fuel.

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The country team approach established during the PICCAP and continued in PIREP as well as in PIEPSAP, is based on the realisation that to effectively tackle climate change issues there is a need to bring together many actors from different crosscutting thematic areas. It involves inviting the national government to designate an agency to host a team of sectoral representatives and national experts, which could facilitate policy and decision-making, and the implementation of climate change-related projects and issues. During the project development stage (under PIREP), PICs were required to form PIREP Country Teams with, as a minimum, a senior officer from the PIC's Energy Unit/Office, the Climate Change Coordinator and a senior environment officer. Some PICs wanted to stay with their Climate Change country teams, which already have adequate energy sector representatives. Others opted to form a PIREP Team as a working group and reporting to a National Climate Change Team. The PIGGAREP country team is a continuation of the PIREP coordination mechanism with modifications to reflect the magnitude and complexity of the PIGGAREP. During the project, the country team will be trained, supported financially and technically and made responsible for coordinating, implementing and managing in-country activities.

Purpose

The Country teams will be responsible for the management, coordination and implementation of the PIGGAREP in-country activities.

Duties & Responsibilities

- § Decide the exact size and composition of the PIGGAREP Country Team.
- § Prepare a preliminary meeting schedule based on the implementation plan/schedule of activities specified in the UNDP Project Document (ProDoc).
- § Prepare, during the inception phase, a national status paper for each of the proposed in-country activities in PIGGAREP and thereby determine exactly which, if any, of the proposed activities that does not need to be implemented in the country (since they already have been undertaken).
- § Based on the status paper, and in consultation with the PM/SPREP, determine exactly which of the in-country activities that will be implemented by national professionals and other relevant national stakeholders from the private sector and civil society in the country.
- § Determine the exact work of responsibility between the identified national stakeholders.
- § Forward, during the inception period, Memorandum of Agreements (MoA) containing comprehensive and confirmed implementation arrangements for the in-country activities to the PM/SPREP and UNDP-Apia.
- § Be responsible for the PIGGAREP in-country activities that are to be implemented by national stakeholders (from government, private sector and civil society).
- § Implementation of specific national activities as agreed in the work plans.
- § Through the PM/SPREP, request external expertise/technical assistance for those specific in-country activities that are deemed not possible to implement by national stakeholders represented in the country team (e.g. due to lack of capacity, knowledge, availability, etc), if needed, and indicate what kind of expertise is preferred (regional organisations, national consultants, regional consultants and international consultants – in that order of priority).
- § Cooperate and coordinate with external experts (regional organisations, national consultants, regional consultants and/or international consultants) and provide them with necessary input and assistance.
- § Review draft reports by consultants engaged by the Country Team.
- § Submit quarterly progress reports to the PM/SPREP.
- § Inform, and justify to, the PM/SPREP about any possible delays during the project.
- § Inform ministries and other agencies of government (professionals and politicians), NGOs and the private sector about the PIGGAREP project and its outcomes.

Members

The PIGGAREP Country Teams as a minimum will consist of:

- § A senior officer from the country's Energy Unit/Office
- § A representative from the power utility and/or private power generator
- § A senior environment / climate change officer
- § A representative of the business community / chamber of commerce

The PIGGAREP National Coordinator will provide the secretariat to the Country Team and will chair the first meeting of the Country Team. The first meeting of the team will select the permanent chairperson.

Meeting Frequency

The PIREP Country Teams will meet at least bi-monthly, and when the need arises.

TERMS OF REFERENCE

PROJECT ADVISORY COMMITTEE (PAC)

Background

The Pacific Island Countries (PICs) are currently heavily dependent on fossil fuels, with petroleum accounting for an estimated 90% of the commercial energy consumption. Petroleum consumption is largely responsible for the Greenhouse Gases (GHG) emission in the PICs. A regional synthesis of the PICs GHG inventories from their first National Communication under the United Nations Framework Convention on Climate Change (UNFCCC) highlighted that the GHG emission per capita in the PICs is almost 25% of the global Carbon Dioxide (CO₂) emissions per capita arising from fossil fuel combustion. Most of the GHG emissions in the PICs are from the combustion of fossil fuels for power generation and in transportation. Power generation is only from fossil fuel in some PICs and the transport sector runs 100% on fossil fuel.

RETs have been known in the region for more than three decades; however, there has not been a comprehensive regional effort to promote them for mitigating GHG emission. Although a number of small-scale rural renewable electrification and energy efficiency projects have been carried out in the PICs over the last two decades, their impacts in terms of reducing the growth rate of GHG emissions have been minimal.

The fact that the PICs are small in size, situated in the Tropics, along the Pacific Rim of Fire and surrounded by the vastest ocean on Earth makes the PICs just about the region with the highest RE potential per capita. Studies carried out during the project preparatory stage indicated that the PICs could reduce the CO₂ emissions by at least 2 million tons by 2015 by utilising commercially viable RE technologies. However this potential cannot be fully realised unless barriers identified during the preparatory phase are removed.

The PIGGAREP is the first attempt in the PICs to comprehensively address the inter-related barriers to the widespread utilisation of commercially viable RETs. It is a collective attempt to address the technical, financial, market, institutional, policy and awareness barriers at the same time since they are interrelated and intertwined. The PIGGAREP will therefore involve a high degree of coordination with related activities of national, regional and international stakeholders.

This is a working group coordinating mechanism where regional intergovernmental organisations and other related regional and international agencies in the Pacific come together to ensure complementarities of their efforts, particularly in cross-cutting subjects like climate change, energy, oceans, etc. There is an Energy Working Group (EWG) and a Climate Change Working Group with just about the same memberships. All members of the EWG are represented in the PIREP Project Advisory Committee (PAC). The PAC will be strengthened to include co-financing partners, to meet more regularly and to participate in the implementation of the relevant national and regional project activities. As a minimum, the PAC will meet at least once a year preferably in May/June, allowing for the stakeholders to agree on a coordinated annual project implementation plan before endorsement at the Annual Meetings of the collaborating implementing agencies.

Purpose

The Project Advisory Committee (PAC) will monitor the conduct of the project and provide guidance and direction to the project team at the strategic level. It will be established with the following composition and will meet at least once a year and as and when the need arises.

The PAC will select its chair from the PIC representatives on a revolving basis. The Project Manager will serve as the Secretary to the Committee, and the Administrative and Financial Officer will assist him/her. The secretariat services will be provided by the Implementing Partner (SPREP). The committee members will include representatives of UNDP-Apia, UNDP-GEF, SPREP, the PIGGAREP National coordinators, representative of CROP agencies, collaborating organizations/institutions as well as co-financing partners.

Duties & Responsibilities

The PAC shall be responsible for the following functions:

- Providing policy guidance to the Implementing Partner in the implementation of the project;
- Facilitating the coordination and implementation of project activities across institutions both at the regional and national levels;
- Reviewing the project activities, and their adherence to the work plan set forth in the project document and approve any modifications/revisions as may be necessary;
- Reviewing and approving the annual work plan and budget;
- Approving major project deliverables;
- Making decisions on the issues brought to its notice by UNDP and other collaborating institutions, and advise regarding efficient and timely execution of the project;
- Reviewing issues raised and agreeing to action plans for their resolutions;
- Appointing sub-committees, if necessary, to carry out specific tasks;
- Initiating remedial action to remove impediments in the progress of the project activities that were not earlier envisaged;
- Monitoring the continued applicability of project benefits;
- Approving requests for changes (e.g. scope changes, schedule alterations, personnel);
- Ensure that the PIGGAREP project activities are fully in line with existing policies and climate change negotiation position of the region; and,
- On request of the PM/SPREP, provide guidance on the execution of national level activities under the PIGGAREP framework.

Members

The following will be the members of the PAC:

- The national PIGGAREP coordinator of each participating PIC
- UNDP Samoa country office and UNDP-GEF
- SPREP
- Representatives of collaborating organisations and co-financing partners
- CROP agencies

The PAC will select its chair from the PIC representatives on a revolving basis. The Project Manager will serve as the Secretary to the Committee, and the Administrative and Financial Officer will assist him/her. The secretariat services will be provided by the Implementing Partner (SPREP).

Meeting Frequency

The PAC will meet annually during the project period. Where appropriate this will be done back-to-back with relevant regional meetings. The first time will be at a Regional Project Inception Phase workshop at the beginning of the project. The PAC will use e-mail distribution lists, phone, conference calls, fax, etc. for communication in-between the meetings.

TERMS OF REFERENCE

Project Inception

Introduction

The Inception Phase of the PIGGAREP provides an opportunity for the PMO to become acquainted with the Project – its agreed strategy, expected outputs and outcomes, the stakeholders, the risks etc. It is also an opportunity for the stakeholders and partners to input on the work plan and to confirm implementation arrangements both at the regional and national levels. It provides an opportunity to finalize any outstanding implementation details and present them to UNDP and SPREP for clearance. The Inception Phase also brings new momentum to the project after the relatively quiet period during the project approval process.

Inception Deliverables

The expected output of the Inception Phase is an Inception Report. The Report should address the following issues:

1. Review, agree on, and finalize project institutional arrangements, including to:
 - Finalize level of representation and individual membership of the PAC and PIGGAREP Country Teams receive confirmation of willingness to participate.
 - Develop rules of procedure for the PAC
 - Clarify relationship between the PAC and the Multi-Partite Review
 - Revise existing ToRs in the Project Document if necessary
2. Review, agree on, and finalize the role and responsibility of various participants for achieving the project outcomes.
 - Identify links and coordination between participants and activities
 - Link each participant to the work plan and delivery of project outcomes
 - Strengthen links to project stakeholders
3. Review, agree on, and finalize the project management arrangements (organizational chart) of the project, including reporting lines. This should include:
 - Location of the National Coordinators (i.e., designated host government agency)
 - Relationship of key project stakeholders (including name, title and contact details of all government counterparts)
4. Review, agree on, and finalize the M & E framework for the implementation of the project, including:
 - Annual work plan/budget processes covering regional and in-country activities, linked to the overall rolling work plans/budget. This will include the setting of yearly targets/milestones that are understood and agreed/endorsed by all stakeholders
 - Ongoing work plan/budget of monitoring and evaluation plans

- Links to project outcome indicators (impact indicators), progress indicators and the Logical Framework
 - Practical, activity-level links to the PIEP and associated strategic plan
 - Practical, activity-level links to national energy plans, where available
 - Monitoring of progress of parallel activities of co-financing institutions, including the delivery of their committed co-financing
 - Evaluation of the achievement of the target milestones/benchmarks (as per Logical Framework), which will be used as bases for the succeeding phase of the PIGGAREP.
5. Coordinate all co-financing sources with the project work plan. This should include arrangements of government and private co-financing, and ways of monitoring, evaluation, and reporting for the co-financing.
 6. With assistance from UNDP (including UNDP-Fiji, UNDP-PNG, and UNDP-GEF RCU, review the capacity of the NCs and Country Teams in providing and/or obtaining project execution services and day-to-day project management. Provide training on required UNDP reporting and project management requirements, as well as general GEF expectations.
 7. Prepare a Project Operations Manual (POM) as supplement to the UNDP Results Management User Guide. Share with all participants and provide necessary training on the POM.
 8. Prepare, deliberate and agree with the participating countries on the operational criteria for assistance, including allocation of funds to individual countries as part of the project.
 9. Review, and where necessary identify additional Project Risks (possible barriers to successful project implementation and identified externalities that may reduce project effectiveness). Prepare a detailed risk management strategy for project implementation.
 10. Prepare an overall work plan for the first year of implementation. Prepare a project budget revision if necessary.

Inception Process

The PM is expected to meet with all stakeholders during the Inception Phase. This will be a mix of individual appointments and also including the Regional Inception Meeting to deliberate and agree to the modifications suggested by the PMO as reflected in the final draft inception report. Subsequent suggested modifications will have to be reflected in the Project Document agreed to by SPREP and UNDP.

In the spirit of cooperation underpinning this project, all parties shall be invited to participate in and contribute to the Inception Phase.

The Inception Phase shall include formal and informal training for the participants by SPREP and UNDP. This will cover an induction into the organization, its procedures and arrangements, as well as a sharing of project-specific knowledge from existing SPREP and UNDP initiatives. The PMO will also receive training from UNDP. This will include an overview of UNDP rules and procedures from UNDP-Samoa, introduction to the office, as well as a briefing on GEF matters from the UNDP-GEF Regional Technical Advisor.

The PM leads the Inception Phase and shall refer to all previous project comments, including those of the STAP Roster Expert, GEF Secretariat, UNDP-GEF, and GEF Council members. SPREP and UNDP will provide copies of all relevant correspondence.

The Inception Phase is expected to take approximately 16 weeks. However flexibility exists to take account of the local situation and seasonal conditions. Monthly updates of the progress shall be provided to the UNDP-Samoa Resident Representative, through meetings at the UNDP-Samoa office. More regular and informal contact should be maintained with responsible UNDP Program Officers.

The preliminary draft Inception Report will be shared with UNDP-Samoa and UNDP-GEF as soon as available and before a final draft inception report is to be prepared. This final draft version is to be circulated to all stakeholders for consideration during the regional inception meeting.

The agreed final draft Inception Report will be sent to stakeholders no later than 2 weeks in advance of the Regional Inception Meeting.

Part IV. Stakeholder Involvement Plan

Widespread stakeholder consultations have been carried out during the preparatory phase of the project (i.e. PIREP). During the inception of the preparatory phase, a regional consultative and planning meeting was held with the project stakeholders to agree on its implementation plan and budget.

In order to ensure broad stakeholder involvement at national level consultations were held during the country missions of the consultants responsible for the drafting of the 15 national RE assessment and regional synthesis reports. During these missions, consultations were held with national representatives from implicated government agencies, public utilities, private sector organizations, regional organisations and the civil society. The consultations also included national SWOT workshops for consensus building.

Regional stakeholders were regularly informed on the progress of the preparatory phase through meetings of the Forum Officials Committee, CROP, the PAC, CROP EWG and the Donors' Renewable Energy Roundtable. National stakeholders were regularly informed through direct communications between the Chief Technical Adviser (CTA) and the PIREP National Coordinators, meetings of the PIREP Country Teams, regional workshops and meetings and the MSP multipartite review meeting.

In the preparation of the project, national and regional stakeholders participated in a logical framework analysis workshop, which came up with the project-planning matrix.

The meetings of the Forum Leaders and Heads of CROP agencies were informed of the development of the project. The annual conference of the Pacific Power Association (PPA) was consulted on the design of the project. The 15th SPREP Meeting, composed of mostly GEF Focal Points in the PICs approved the extension of the preparatory phase to the PIGGAREP and SPREP's continuing project Implementing Partner responsibilities.

The barriers to RE development and application in the PICs cannot be removed without a high degree of participation from all stakeholders listed above. Among others with stakeholder participation, RE will receive wide recognition and support. The major project stakeholders and their overall roles are described below:

- a) Pacific Island Country Governments and the Country Teams – The PIC governments and the country teams will take a direct lead role in the management; coordination and implementation of all project activities in their respective countries and will provide logistical support to the project. Staff from the national energy department/ministry in the government will be seconded to the project, along with material support such as office space, use of equipment and transportation. The PIC government shall also play a key role in implementation of the training and public awareness components of the project.
- b) NGO and Local Community – A key NGO or local, community-based organization will be identified to assist primarily in the design and development of public awareness and productive-use components of the project. The NGO or local group will provide input in assessing the awareness level and attitude towards electrification and RE in particular to determine the type(s) of public awareness campaign to be developed. They will also assist in identifying the types of

productive-use projects to undertake and the appropriate group or organization to undertake the project.

- c) Private Sector – The private sector will be involved in the project as consultants and suppliers and installers of RE system hardware installations.
- d) Banks and Financing Institutions - Banks and financial institutions will provide loans to local RE production, supply, contracting businesses and RESCOs. They are also expected to play a major role in the management of the RREF, subject to the outcome of the feasibility studies and the relevant consultation meetings.
- e) International and Regional Organizations - The PICs are fully aware of their limited resources and expertise and have therefore established regional organizations such as, Pacific Islands Forum Secretariat, PPA, SOPAC, SPC, SPREP and the USP to facilitate regionalism, in terms of common approaches, cost effectiveness, and complementarity of efforts. These organizations will be involved through SPREP to provide backstopping services to the PICs in the execution of the PIGGAREP activities.

Summary List of Stakeholders and Key Roles in the PIGGAREP

Stakeholder	Key Role in the PIGGAREP
UNDP SAMOA COUNTRY OFFICE	<ul style="list-style-type: none"> • Provide GEF Implementing Agency oversight on the project implementation (e.g. financial and substantial oversight, monitoring, evaluation, administrative backstopping, coordination with other UNDP initiatives, etc)
SPREP	<ul style="list-style-type: none"> • Implementing Partner as per standard UNDP/GEF rules and procedures under the National Execution (NEX) modality (e.g. responsible for the planning and overall management of project activities, reporting, accounting, monitoring and evaluation, supervision of contractors, management and audit of UNDP resources, etc) Linkage with co-financing activities • Linking of the project to other climate change related activities in the PICs (e.g., Second National Communications, the Climate Change Framework, UNFCCC, Kyoto Protocol, Climate Change Legislations and Policies, Climate Resource Monitoring through the PICGOS; Information dissemination through the <i>Pacific Environment Information Network (PEIN)</i>⁵ and the Pacific SIDSNet website) • Manage all project consultancies and contracts
PIGGAREP Country Teams	<ul style="list-style-type: none"> • Implementation of in-country training and awareness activities • Coordination of the implementation of activities delivered by consultants and external agencies • Report on co-financing activities to SPREP • Linkages to other relevant national initiatives
SOPAC	<ul style="list-style-type: none"> • Energy Legislation and Policies activities • Training and Technical Advice and Support • Resources Assessment • Information dissemination through the <i>Pacific Energy Newsletter</i>

⁵ PEIN is the 2004 winner of the prestigious Stockholm Challenge Award, which is an international competition that each year looks for new models for the information society of tomorrow. The Pacific Islands Environment Network (PEIN) provides access to PICs to 20,000 volumes of on-line environmental-related information, across 14 Pacific island countries.

Stakeholder	Key Role in the PIGGAREP
USP	<ul style="list-style-type: none"> • Training Activities
Greenpeace	<ul style="list-style-type: none"> • 100% RE islands study in Niue. • Information dissemination, awareness raising, working with key governments and lobbying for Pacific interests at international meetings.
World Wildlife Fund	<ul style="list-style-type: none"> • Information dissemination through the <i>South Pacific Currents</i>
Private Sector/Consultants	<ul style="list-style-type: none"> • Conduct some of the resource monitoring activities and feasibility studies • Installations of the hardware projects
Banks and Financing Institutions	<ul style="list-style-type: none"> • Represented in the PAC • Financial support to RE development activities • Possible management partners of the RREF
Pacific Power Association	<ul style="list-style-type: none"> • Information dissemination through the Pacific Power Magazine • Interface between the PIGGAREP and the power utilities

Part V: Other Additional Information

Annex 1: CO2 Emissions Reduction Estimates

The total CO2 emissions reduction attributed to the PIGGAREP is comprised of direct CO2 emissions, direct post-project CO2 emissions, and indirect CO2 emissions.

Direct CO2 Emissions Reductions

The PIGGAREP will include the implementation of demonstration activities involving the installation of new RE-based energy system capacity in the PICs of 50 MW. The following are the important assumptions used in the estimation of the CO2 emissions reduction from the PIGGAREP:

- CO2 emission factor: The RE-based energy systems that will be installed will directly displace diesel fuel oil (DFO) used in diesel power generation. In this regard, the CO2 emission factor is 0.909 ton/MWh.
- Forecast baseline CO2 emission per year is based on a projected DFO growth rate of about 3.7% per year from 2005 to 2020. The projected annual CO2 emissions for the same period are based on a reduced DFO consumption, whose average growth rate is at 2.7% per year.
- Demonstration activities in the PIGGAREP will involve the installation of 50 MW capacity of RE-based energy systems, with an overall average operating characteristics:
- Operating hours = 18 per day; 360 days/year
- Average availability factor = 0.45

An estimated cumulative total of about 371,090 tons CO₂ can be avoided from the 50 MW demonstration projects that will be implemented under PIGGAREP. Based on the estimated cumulative installed capacity each year during the project life, the annual CO2 emissions reduction is as follows:

Table 1: Cumulative CO2 Emissions Reduction during PIGGAREP Implementation Period

Year	Installed Capacity, MW (cumulative)	Annual CO2 Emissions Reduction, tons
2006	5	13253
2007	15	39,760
2008	30	79,519
2009	40	106,026
2010	50	132,532

Direct Post-Project CO2 Reductions

PIGGAREP will bring about the enabling environments that are expected to induce investments on new RE technology replications that will bring the total installed capacity of new RE-based energy systems in the PICs to about 100 MW by end year 2015.

By end 2015, the total CO2 emissions reduction from the total installed capacity of 100 MW (2006-2015) is about 1,060,258 tons. The additional cumulative installed capacity of 50 MW after the

PIGGAREP accounts for about 397,597 tons CO₂ avoided during the period 2011-2015. The rest (i.e., 662,661 tons) is from the 50 MW that will be installed during the PIGGAREP implementation period. Considering only the installed additional RE-based energy system capacity of 100 MW, the Direct Post-Project CO₂ Emissions Reduction is 1,060,258 tons.

Table 2: Cumulative CO₂ Emissions after PIGGAREP

Year	Installed Capacity, MW (cumulative)	Annual CO ₂ Emissions Reduction, tons
2011	60	159,039
2012	70	185,545
2013	80	212,052
2014	90	238,558
2015	100	265,064

Indirect CO₂ Reductions

PIGGAREP will create the enabling environment that will facilitate the widespread utilization of RETs in the PICs. The primary targets of the project are the rural areas that are in need of energy services both for meeting household energy needs as well as for community-based income generation and livelihood support activities. Capacity development activities that will be conducted under the project are expected to influence the relevant stakeholder entities in the promotion, support, design and installation, financing, operation and maintenance of commercially viable and sustainable RE-based energy system projects.

The project will also involve interventions that will bring about the necessary institutional, regulatory and financial policies and mechanisms that would enhance the promotion of the applicable and feasible RE technology application, and encourage the target groups in taking on the technology.

Based on trend analysis of historical data of DFO consumption (power and other non-transport applications), the projected DFO consumption during the next 10 years after PIGGAREP (2011-2020) will bring about a cumulative CO₂ emission of about 61,698.3 ktons. The operation of a realistic technical potential for new RE-based energy systems in the region will bring about a reduced CO₂ emission level of 53,190.7 ktons. This translates to a cumulative CO₂ reduction (2011-2020) of about 8,507.6 ktons. The following table shows the CO₂ emissions from 2 cases, business-as-usual (DFO-based power generation) and alternative (RE-based energy systems).

Table 3: CO₂ Emissions (ktons) (Business-as-Usual & Alternative)

Year	Business-as-Usual	Alternative	Cumulative CO ₂ Emissions Reduction
2011	4852.8	4,479.6	373.2
2012	5,107.4	4,648.1	832.4
2013	5376.3	4,822.9	1,385.8
2014	5659.4	5,004.3	2,040.9
2015	5,956.9	5,192.5	2,805.3
2016	6,68.6	5387.8	3,686.1
2017	6,594.6	5,590.5	4,690.2

Year	Business-as-Usual	Alternative	Cumulative CO2
			Emissions Reduction
2018	6,934.8	5,800.7	5,824.3
2019	7,89.4	6,018.9	7,094.7
2020	7,58.2	6,245.3	8,507.6

The GEF influence in achieving this additional CO2 emission reduction during the influence period, which in this case is 10 years after PIGGAREP (i.e., 2011-2020), is considered quite high, relative to that during the project period (i.e., 2005-2010). In that regard, most of the indirect CO2 reduction can be attributed partly to the interventions that will be carried out during the PIGGAREP such as the establishments and enforcement of RE policies and financing mechanisms, RE market enhancement, and the successful demonstration programs. In this case, the GEF Causality Factor (CF) can be taken as Level 3 (“substantial but modest”), i.e., 60%. In this regard, 60% of the estimated additional 8,507.6 ktons of CO2 emissions reduction can be considered as the PIGGAREP’s Indirect CO2 reduction.

$$\text{Indirect CO}_2 = 8,507.6 * 0.6 = 5,104.5 \text{ ktons (CF = 0.6)}$$

Total CO₂ Reduction

Particulars	Quantity, tons	Remarks
Direct CO ₂	371,090	From 50 MW demonstration projects during PIGGAREP
Direct Post-Project CO ₂	1,060,258	From replication projects of about 50 MW capacity (during 5 years after PIGGAREP)
Indirect CO ₂	5,104,500	GEF Causality Factor = 0.6

$$\text{Total CO}_2 \text{ Reduction} = \text{Direct CO}_2 + \text{Direct post-project CO}_2 + [\text{Indirect CO}_2 * \text{GEF Causality Factor}]$$

$$\text{Total CO}_2 \text{ Reduction} = 371.1 + 1,060.3 + 5,104.5 = 6,535.9 \text{ ktons}$$

By 2015, PIGGAREP would have influenced some of the PICs, and in this regard the GEF Causality Factor can be taken as Level 2 (“modest and substantial”), i.e., 0.40. The indirect CO2 emissions (based on cumulative amount by 2015) would be about 1,122.1 ktons. Total CO2 emissions reduction would be 2,553.5 ktons. However, considering some of the inaccuracies in the historical data, and to be conservative, PIGGAREP has targeted a rounded figure of 2,000 ktons as CO2 emissions reduction by 2015.

Annex 2

Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)

Responses to GEF Council Comments (France)

Comments	Responses	References
Nevertheless, despite a 2 years preparation within the framework of the PIREP project, the PIGGAREP project is not convincing for the following reasons.		
<p>1. The project has a very wide dispersion of its activities, sometimes poorly related with project objective; it could have focused its activities on a few RE niches (for example, solar photovoltaic, solar thermal, wind energy and small hydro) which have already been demonstrated in other RE projects as economic and socially acceptable. The issue is now to go beyond demonstration stage in most of these islands by mobilizing economic actors which are potentially in position to disseminate these RE technologies at a significant scale (hotel and housing promoters, power utilities, telecommunications companies, administrations in charge of building schools and hospitals, etc.). The GEF project should identify what are the barriers, which could be effectively overcome through capacity, building, new financing schemes, quality control, etc. The challenge is to understand why the RE market was not developed by the private sector and which initiatives would really make the participation of the private sector financially</p>	<p>The proposed PIGGAREP activities are based on a logical framework analysis (LFA). Such an analysis not only identified and verified the various barriers/issues/concerns in the area of RE development and utilization in the PICs, but also established their interrelationship (cause-effect relationship)⁶. Having done that, the activities that were identified, the achievement of which contributes to the realization of the defined outputs and outcomes of the project, are integrated. In that regard, what the project proponents came up is a project that is made up of integrated activities. One has to appreciate how the LFA is done to understand the fact that the aim is to come up with an objectives-oriented project design.</p>	<p>Project Brief (PB): Para 12.</p> <p>Project Document (ProDoc): Para 5</p>
	<p>The project proponents believe that the proposed RE niches (i.e., RE resources) are addressed in the PIGGAREP, specifically in PICs where these RE resources are abundant and are feasible (technically and economically) to develop and utilize.</p>	<p>PB: Annex I & Para 12.</p>
	<p>The demonstration activities in PIGGAREP are not meant to demonstrate the RE technologies (RETs) but to showcase the feasible RE delivery mechanisms as well as the “business angle” of RE. As part of the barrier removal activities the demonstrations are meant to show how to develop, design, engineer, finance, implement, commercially operate and maintain RE-based energy system applications.</p>	<p>PB: Paras 6, 12 & 58.B.3.</p> <p>ProDoC: Para 44</p>
	<p>During the preparatory stage of PIGGAREP (i.e., under PIREP) the actual barriers to the widespread development and utilization of RE resources and</p>	<p>PB: Annex I; Para 59.</p>

⁶ This interrelationship is reflected in what is called a Problem Tree. The defined objectives (goal, purpose, outcomes, outputs and activities) are derived from an objectives analysis (Objective Tree), which is based on the Problem Tree.

Comments	Responses	References
<p>attractive in the medium and long term. In the project document, there is a lack of concrete data to give credibility to the initiative by identifying concrete RE investment opportunities with a first estimate of their economic viability and preliminary action plans to achieve significant RE dissemination programs despite a long field preparation during phase I.</p>	<p>application of RETs in each PIC were identified and evaluated. Whatever interventions (e.g., capacity building) have been proposed to address such barriers in each PIC (as tabulated in Annex I – Project Brief) are what the project proponents and stakeholders consider as the most relevant and cost-effective. The National RE Assessment Report of each PIC explains this. The market barriers such as those that relate to the development of private sector initiatives were evaluated under PIREP and the proposed activities in Component 2 of PIGGAREP, which are meant to address the barriers (and their underlying causes), were based on the findings and recommendations of such evaluation.</p> <p>It should be noted that with a limited budget for a project preparatory exercise, it is beyond the scope of PIREP to come up with the estimate of the economic viability of potential RE-based energy projects in each PIC. Except for the demonstration projects, which are already evaluated for their techno-economic feasibility, studies related to that are proposed under the PIGGAREP as part of the technical and market barriers removal activities.</p> <p>The proposed activities (national and regional) will be revisited and finalized during the inception phase of the project. In that way, the concerns raised by the GEF Council Member will be adequately considered and addressed (if appropriate) at the beginning of the project.</p>	<p>PB: Para 59.A.</p> <p>ProDoc: Para 73 & Section IV, Part III, TOR for the Inception Phase</p>
<p>2. From our experience, the project underestimates the organizational difficulties attached to the geographical dispersion of the Island states and their extreme heterogeneousness; the spreading of GEF resources over a large number of locations is likely to achieve limited objectives. It may have been more relevant to sort out or focus first the GEF efforts on a few countries and sectors, to</p>	<p>With regard to organization difficulties, the project proponents, being based in the region, are aware of the organizational difficulties being referred to. Hence, significant efforts were given to define a mutually agreeable implementation arrangement among the concerned institutions and organizations in the region. Furthermore, it should also be noted that there have been other regional projects in the Pacific that were successfully implemented by UNDP and/or SPREP, with much smaller budgets than that of PIGGAREP. Also note that the recently endorsed Pacific Plan by the Pacific Leaders agreed and encouraged regional coordination and cooperation.</p>	<p>PB: Para 80</p> <p>ProDoc: Para 34, 36 & 38</p>

Comments	Responses	References
<p>solve the issues attached to the dissemination of RE by building convincing market references addressing all aspects into an integrated approach. The proven approaches could then be extended to other states after adaptation.</p>	<p>Concerning the issue of geographical dispersion, the proven country team approach will be applied to address the effective coordination of the implementation of the national activities. On another note, geographical dispersion is not a valid reason for excluding certain island countries or islands in a regional initiative like PIGGAREP. Actually, this structural characteristic emphasize the special needs of small island developing states that, among others, will be addressed by interventions like PIGGAREP.</p> <p>With regards to the spreading of GEF resources, there are 2 key points that should be noted. Firstly, GEF funds will only be used for incremental activities, and other activities (baseline activities) are funded from other sources (co-financing). Secondly, GEF projects are required to address barriers in comprehensive and integrated manner.</p> <p>With regards to issue of RE market development approaches, it should be noted in Annex I (Project Brief) that the market development activities in each PIC are different. Considering the present RE market size, demand and characteristics in each PIC, the market development activities varies from just doing further feasibility studies to a range of activities that would help promote a RE market. This in essence, is in line with what is being suggested to focus market development-related interventions in selected PICs, which later on can be replicated in other PICs.</p>	<p>PB: Annex I</p> <p>ProDoc: Para 46 & 60</p> <p>ProDoc: Para 44 & 52</p>
<p>3. The project plans to associate a large number of national and regional actors as it has already been done during the preparatory exercise. It could have been more pragmatic to associate it with a few professional sectors such as the association of power utilities to address jointly the specific difficulties of inserting RE in small insular electrical grids (technical issues, economic aspects, financing schemes,</p>	<p>Considering the need to come up with an integrated and comprehensive intervention to address barriers to commercially viable RETs in the region, a stakeholder analysis was carried out as part of the project development/design. The outcome of this exercise clearly showed the need to deal with different stakeholders at multiple levels (e.g., regional, national and community). Please note that aside from the PIREP Country Teams, CROP organizations, NGOs (local and international), private sector entities such as hotels, local manufacturers, consultants, banks and financing institutions, the Pacific Power Association (an association of power utilities) is among the project</p>	<p>PB: Table – Para 79; Table – Para 63.G</p> <p>ProDoc: Para 43 and Section IV Part IV</p>

Comments	Responses	References
<p>electricity tariffs, optimal mix for grid extension and decentralized electricity, ...) or the hotel associations, this sector being also a large energy consumer (heating, cooling, lighting and transport) with large business opportunities for solar water heaters and cogeneration units.</p>	<p>stakeholders. The PPA is also a member of the Project Advisory Committee (PAC) of PIGGAREP. Specifically with regards to the PPA, this association is viewed as an effective interface between the project and the power utilities, and is expected to provide technical assistance, where and when necessary, on issues similar to the ones being proposed. The power utilities are also involved in the training courses that will be implemented under PIGGAREP.</p>	<p>PB: Para 59.A</p>
<p>4. The 100 MW of RE projects to be implemented by 2015 are also poorly justified; to cope with these concerns, more defined programs should have been elaborated during phase I; the project takes little care of the « energy efficiency » component, in spite of its importance and economic character in classical energy installations (diesel power plants, distribution and utilization of electricity) as well in RE projects. It neglects consequently an important potential of CO2 emission reductions at low cost;</p>	<p>PIGGAREP, as a 5-year barrier removal project will be setting the enabling environment (in terms of favorable market establishment, appropriate institutional and regulatory regimes, technical and financial capacities) for the development and implementation of RE-based energy system projects. The 100 MW RE projects is a projection of what can be realized if such enabling environment are set in place during the PIGGAREP implementation and/or by the time it is completed.</p> <p>Why it is not considered justified is not clear to the project proponents. PIREP is <i>de facto</i> the project preparatory exercise that prepared the PIGGAREP. <u>It is not Phase 1 of PIGGAREP.</u> The components that make up the PIGGAREP are specific programs that were designed under PIREP, and these programs address the barriers that the PIGGAREP will remove.</p> <p>Energy efficiency is built in the promotion of applicable and feasible RETs. Whenever RET is recommended, the system designer has to take also into consideration the energy efficiency aspects of the application. It would be defeating the purpose of rationale use of energy if RE resource applications are carried out in a wasteful manner. As a simple example, the utilization of solid biomass (e.g., firewood) as a RE resource for cooking can be made efficient and effective with the use of energy efficient cook stoves compared to other traditional wood-burning stoves. Biomass-fired power generation plants can be designed to achieve optimal heat rates thereby preventing excessive use of biomass fuel per kWh of electricity produced. Solar PV manufacturers are also striving to improve the efficiency of their products. At the same time,</p>	<p>PB: Paras 44.n & 65.b; Annexes B & H</p> <p>PB: Para 4.</p> <p>PB: Paras 58.C.6 & C.7</p> <p>ProDoc: Para 13(h), 35(e) and 36</p>

Comments	Responses	References
	<p>sizing of PV systems should take into account the optimal demand (considering energy efficiency aspects) for end-uses. In that regard, PIGGAREP is also taking into consideration EE aspects.</p> <p>Moreover, energy efficiency is covered in a separate GEF Operational Programme (OP-5), and therefore cannot be directly supported under this OP-6 project. A separate OP-5 project can be proposed that would deal with the potential energy savings and corresponding CO2 emissions reduction by improving heat rates of diesel power generator sets, and optimizing the way these are operated.</p>	
<p>5. The 2 million tons CO2 cumulated reduction is not justified in a credible way, the reductions also do not seem additional as these are mostly based on RE projects already financed by donors. The project gives little information on the economic impact of its strategy regarding employment creation and new productive activities;</p>	<p>Regarding the issue of estimated amount of CO2 emission reduction, the stated figures were calculated using the GEF-prescribed estimation methodology. It includes direct, direct post-project, and indirect CO2 emissions reduction. While the calculated total CO2 emission reductions is about 2.55 million (including after PIGGAREP), the target emission reduction of the project is conservatively placed at 2 million tons by 2015.</p> <p>On the “additionality” (incremental) issue, the demonstrations, while funded from other sources, are also assisted by the project. Note that these demonstrations are originally technology application projects. As part of PIGGAREP design, these projects were modified by incorporating features that makes these projects showcase cost-effective RE delivery mechanisms as well as demonstrate how to design, engineer, finance, implement, commercially operate and maintain RE-based energy system projects.</p> <p>Regarding the productive uses of RE, note that some of the demonstration projects are designed to apply certain RE delivery mechanisms, which are considered more sustainable, and/or supportive of productive uses. PIGGAREP’s approach for sustainable RET utilization in the PICs is the promotion of the design, development, financing and implementation of RE-based energy initiatives that support rural industries such as handicraft production, agricultural crops (e.g., sugar, tapioca/cassava, breadfruit) processing, animal husbandry, dairy products production and fishery</p>	<p>PB: Annex H; Paras 43, 47 & 52</p> <p>ProDoc: 105, second table</p> <p>PB: Para 6; Paras 40 a & g; 44.a</p> <p>ProDoc: Para 44 & 52</p> <p>PB: Paras 50; 44.e & f; Paras 58 C.2, C.6 & C.7</p> <p>ProDoc: Para 35(b)</p>

Comments	Responses	References
	<p>products preservation. RET will also be used for water supply (pumping and treatment) as well as in irrigation systems.</p> <p>While these are in mind, the project preparatory activities in PIREP did not include micro level/site-specific assessments of the actual economics of the productive uses that can be supported by RE. The national RE assessment reports have highlighted the potential macro level potentials for income generation and livelihood support benefits that can be derived from energy services made available through the application of commercially viable RETs. PIREP relied on these generic information, as well as from other general socio-economic development information available to come up with the overall strategy on productive uses of RE for the promotion of RE and RETs in the PICs, and in coming up with the outcome indicators related to productive uses of RE. Hence, PIGGAREP will do micro level/site-specific validation and confirmation of data, as part of the technical and market barrier removal activities, to provide basis for recommending potential commercial productive use applications of RE in the PICs. More comprehensive information on productive uses are necessary in attracting business and investments on RET applications. This include feasibility studies on projects on RE service delivery for income generation, livelihood support, water supply, health services, education, women and youth welfare.</p>	
<p>6. The cofinancing of the project seems rather artificial, the ongoing RE projects of other donors being accounted as an input to project budget. The « fresh » financial resources provided to the project being too small to implement properly its ambitious activity program spread over 11 states. The participation of the beneficiary countries, almost “standardized”, whatever the size of the country appears not really secured despite standard letters of intention.</p>	<p>Since the concerned RE projects are subsumed into the PIGGAREP as demonstration projects, they are considered part and parcel of the PIGGAREP. The budgets for the relevant activities of these demonstration projects are thus considered part of the PIGGAREP budget. The « fresh » financial resources (which is construed here as that from the GEF) are meant, as has been explained earlier, to remove the barriers to the widespread development and utilization of RE in the PICs, and not to simply top up the budget of these demonstration projects.</p> <p>The PICs have their own ongoing and planned initiatives in the area of RE, to which their respective governments have allocated some budgets for this. The PIC government contributions</p>	<p>PB: Para 28</p> <p>ProDoc: Para 43, Section IV Part I</p> <p>PB: Para 28</p>

Comments	Responses	References
	<p>are basically their budgeted activities in the area of RE development and utilization. Such activities are also among the baseline activities of the PIGGAREP. Hence, the budget allocations for these baseline activities are also included in the PIGGAREP budget. The RE programs of the PICs vary in scope and magnitude, and budget allocations. In the spirit of solidarity in this common field of endeavor, the participating PICs agreed to provide equal share of financial contributions to the PIGGAREP. Hence, the reason for a standardized contribution. Some PICs could have provided significantly larger amount of co-finance.</p>	<p>ProDoc: Section IV Part I</p>
<p>7. Despite some preliminary coordination meetings, the PIGGAREP project is likely to interfere with RE regional or bilateral programs ongoing or under preparation, such as: Pacific Islands Renewable Energy Project (PIREP) – GEF, Renewable Energy and Efficiency Program – ADB/Denmark, Capacity Building for development of adaptation measures in Pacific Islands countries (CBDAMPIC) – Canada, Institutional capacity building on RE Training Project - UN ESCAP, Energy Facility for ACP countries (250 M €) including 10 Pacific Islands countries - European Union, Support to the energy sector in five Pacific Islands, European Union , Regional energy program for poverty reduction project – UNDP, including several bilateral RE projects mainly carried out by the Asian Development Bank and the European Commission in the following countries: Cook Islands, Fiji, Kiribati, Samoa, Papua New Guinea. How the PIGGAREP project is</p>	<p>The coordination meetings that were held during the project preparatory stages were all meant to determine and understand what the other ongoing and planned regional/international/bilateral projects are all about, in order to determine what are the other value added things that PIGGAREP could possibly do (particularly addressing constraints and limitations), and potential synergies with them. Such meetings were meant to avoid potential duplication of efforts and possible interferences or conflicts with these other initiatives in the region. Whatever information gathered and learned from these consultations were utilized in coming up with mutually beneficial and synergetic activities that would build on some of these initiatives, and/or complement them. Definitely PIGGAREP will not interfere with PIREP since the latter would have already been completed when PIGGAREP starts, mainly because PIREP is the one that prepared the PIGGAREP.</p> <p>As stated in the Project Brief, some of these initiatives have parallel activities that, as per agreement with the project proponents/owners, would be subsumed in the PIGGAREP. These projects will be carried out, as is by its owner or its implementation team, with some assistance from the PIGGAREP. However, PIGGAREP will not take over the management and budget of these parallel projects. The project owners (or implementation team) will manage these projects and will report to the PIGGAREP their accomplishments since their outputs are considered as part of PIGGAREP’s</p>	<p>PB: Paras 75, 76 & 79</p> <p>ProDoc: Section IV Part I</p> <p>PB: Paras 6, 28, 58.C.2, & 91</p> <p>ProDoc: Section IV Part I</p>

Comments	Responses	References
operationally linked with these different programs?	<p>deliverables.</p> <p>One should note that, despite the seemingly many interventions in Pacific region in the area of sustainable energy (as can be gleaned from the many acronyms mentioned in the comment), the total resources are not sufficient to address the needs/gaps at the regional and national levels.</p>	
The project is potentially interesting, but its ability to achieve proposed objectives has to be demonstrated based on the above (<i>following</i>) recommendations.		
1. focus the efforts on a limited number of RE niches in a limited number of countries in a first phase,	As stated in the earlier responses, the project proponents believe that the proposed RE niches (sic) are addressed in the PIGGAREP, specifically in PICs where these RE resources are abundant and are feasible (technically and economically) to develop and utilize these resources. Each RE niche (which actually the Council Member refers to the RE resource, e.g., solar energy) have different technical requirements and barriers to surmount but the utilization of all of these RE resources involve hurdling basically common information, market, regulatory, financing and institutional barriers which have to be addressed in an integrated manner, as they are interrelated. Nevertheless, the suggested RE resources are anyway the same as those that will be covered under the PIGGAREP.	<p>PB: Paras 6 & 12, Annex I</p> <p>ProDoc: Para 5 & 16</p>
2. focus the activities on most critical barriers in line with most urgent needs and available resources,	The national RE assessments identified and prioritized the barriers in each PIC. Obviously these barriers to RE development and utilization are those that impacts on the exploitation of available RE resources in each PIC. The priority (i.e., critical) barriers in each PIC are the ones that will be addressed in each PIC under PIGGAREP. In addition, please refer to earlier response (above) on this same comment.	<p>PB: Pas 29-35; Annex I</p> <p>ProDoc: Para 5 & 16</p>
3. involve, right from the beginning, private and public developers through cofinancing with proven motivations to use RE on a significant scale (power utilities, hotel and housing developers, public administrations investing in hospital, schools, universities, etc, food industries, etc); support only RE technologies which have a business potential	The project proponents did their level best to involve the relevant stakeholders in the design of the PIGGAREP, including the private sector. While certain entities in the private sector in the PICs have shown interest in exploiting the benefits from the utilization of RE resources, in general, and in the aims and objectives of the PIGGAREP, in particular, most of them are still in a “wait-and-see” mode. They wanted to see RE-based energy projects operating in a sustainable manner and profitably on the ground. This is the main reason for the inclusion of demonstration projects in the PIGGAREP, which	<p>PB: Paras 31.a, 33.c & 33.b</p> <p>ProDoc: Para 5, 8, 61 & Section IV Part IV</p>

Comments	Responses	References
and local actors ready to develop them,	<p>are meant to showcase the effective delivery mechanisms and the business aspects of RE technology applications. Presently, except for those that agree to have their RE projects subsumed into the PIGGAREP, while they are aware of the benefits, most of the private sector entities in the PICs are not willing to invest in RET applications due to the absence of financially sustainable and economically competitive RE-based energy system installations in these countries.</p> <p>PIGGAREP is designed to influence, among others the private sector, to support and implement RE-based energy projects. The financing support that is expected from them is expected to come later as leveraged funds. For example, monetary resources for lending in RE funds or RE financing schemes that will be developed under PIGGAREP will come from financing institutions and banks in the PICs (and in the region) that will be influenced by interventions that will be carried out under PIGGAREP. Initial discussions with local and regional banking/financing institutions (e.g., ANZ Bank and national development banks) indicate interest of these institutions to financially support the establishment of RE financing schemes in the PICs. However, these anticipated leveraged funds from the financing institutions and banks are not included in the financial plan of the PIGGAREP.</p>	Executive Summary: Co-Financing
4. address RE promotion as well as energy conservation in each subproject to ensure economic consistency and maximum CO2 impact,	<p>As stated previously, energy efficiency is built in the promotion of applicable and feasible RETs. Whenever RET is recommended, the system designer has to take also into consideration the energy efficiency aspects of the application. It would be defeating the purpose of rationale use of energy if RE resource applications are carried out in a wasteful manner. In that regard, PIGGAREP is also taking into consideration EE aspects.</p> <p>If the PICs see the need, a separate OP-5 project can be proposed that would deal with the potential energy savings and corresponding CO2 emissions reduction by improving heat rates of diesel power generator sets, and optimizing the way these are operated.</p>	<p>PB: Paras 58.C.6 & C.7</p> <p>ProDoc: Para 13(h) & 35 (e)</p> <p>ProDoc: Para 38</p>
5. focus in priority in sectors and islands where the CO2	PIGGAREP is a regional endeavor, a collective effort of the PICs (big and small) to tackle the issue	PB: Paras 4, 5, 38, 48

Comments	Responses	References
reduction potential is significant (islands with significant economic growth),	<p>of sustaining economic development through the utilization of available RE resources, and at the same time contribute at the regional level to the mitigation of global warming. All the PICs participating in the PIGGAREP would like to work on the removal of what they have individually identified as barriers to the widespread development and utilization of RE. This is also in line with the call of the PICs Leaders for more utilization of RE in the region to cut down on GHG emissions. Furthermore, the PICs consider working together towards these objectives (as a group) as an effective strategy for them to strengthen their negotiation positions in the UNFCCC, and other multilateral environmental agreements and sustainable development processes. As mentioned earlier, the Pacific Plan calls for further regional cooperation and integration in this kind of endeavors.</p> <p>By prioritizing the barriers that they have identified individually, and addressing them on their own, and in certain cases, collectively as a region, the PICs would be able to ensure that priority sectors are addressed, thereby realizing significant impacts, not only in economic development as well as contributing to CO2 emissions reduction.</p>	<p>& 81</p> <p>ProDoc: Para 16, 34 & 38</p> <p>ProDoc: Para 61</p>
6. and 7. clarify cofinancing and links with others achieved or ongoing programs	<p>The demonstration projects are baseline activities that are (with the agreement of their owners) subsumed under the PIGGAREP. These are among the co-financed activities of the project. As part of the PIGGAREP, these will be supported to showcase the “business angle” of RE-based energy projects, whereby the designing, engineering, financing, implementation and commercial operation of such projects are demonstrated.</p> <p>As part of the PIGGAREP, the demonstration projects will be provided technical assistance for example in the procurement (if needed by demo host sites) of required hardware for the demonstration. The successful demonstration projects are expected to influence the banking/financial sector in the PICs (and in the region) to provide financing assistance for RE-based energy projects.</p>	<p>PB: Paras 58.B.3, 54.C.1, 2, 3 & 7</p> <p>ProDoc: Para 43, 52 & 61</p>
The project has, in our opinion, been well analyzed by the STAP officer (Dr Drexler),	It should be noted that the project proponents have directly discussed with the STAP Reviewer the latter’s technical comments on the PIGGAREP.	

Comments	Responses	References
<p>which has highlighted a number of weaknesses and shortcomings in the present project document. Answers of the promoters to most of its remarks do not seem actually convincing.</p>	<p>They clarified to him certain issues and background information that should have been taken into consideration before he gave his comments. The responses provided to the STAP Review were made after carrying out such discussions and after providing further clarifications to him. He has acknowledged these and thereafter advised that the project proponents make the necessary revisions in the Project Brief. Such revisions are those indicated in the references provided in the Responses to the STAP Review Comments.</p>	

Annex 3

Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project

Responses to US GEF Council Member Comments (USA)

Comment	Response	Reference
The programme addresses fundamental issues to reduce fossil fuel emissions by starting with basic activities such as capacity building, market development, institutional strengthening, regulatory and financial support. The indicators in the log frame are good. Unfortunately, the Logframe is very brief. It would benefit by having more detailed indicators based on other project outputs.	Agree that the project planning matrix (log frame) in the executive Summary is brief. However, in Annex B of the Project Brief the detailed log frame can be found, which also shows the indicators at the project output level. The log frame in the Project Brief was developed during the MSP Results Workshop held in Apia, Samoa on 5-9 July 2004. It reflects a consensus achieved among representatives from the 15 countries that have participated in the PIREP of the expected activities and outcomes/outputs of the planned comprehensive regional RE project, which is the PIGGAREP	PB: Annex B
Also, the STAP reviewer raises a very interesting point about prioritizing the challenges to introducing renewables in the region. The project document dismisses the concerns as unrealistic because each country has its own set of barriers. As a result, the project document often talks in generalities. This should be clarified prior to CEO endorsement.	<p>It should be noted that the participating Pacific Island Countries (PICs) have marked differences in terms of national circumstances, renewable energy (RE) resources endowment, strengths of the local economy, attractiveness to private sector participation, local expertise and institutional structures to manage and plan the energy sector (see Annex J of Project Brief). A “one-fit-all” solution or strategy, and to have one common prioritization of barriers and RETs for all these countries would not be practical. The priority for resource assessment in a mountainous country would be different from that of a coral atoll. The needs of a country with many small outer islands would be different from those without. The ways of doing things in former US territories are different from the former British colonies.</p> <p>The barriers that were identified in each PIC are those that will be addressed in their individual national activities under the PIGGAREP, and to some extent in some of the regional activities. Note that during the national RE assessment activity that was carried in each PIC, the barriers were identified, verified and evaluated.</p>	<p>PB: Para 4, 5, 38, 48, & 81</p> <p>ProDoc: Para 16, 34 & 38</p> <p>PB: Annex I & Para 59</p> <p>ProDoc: Para 5</p>

Comment	Response	Reference
	<p>Thereafter, activities were identified in each country to address the barriers beginning with those (i.e., priority) that are significantly hindering the widespread development and utilization of the available and feasible RE resources. This is how the barriers, i.e., challenges, were prioritized at the national level. Prioritizing the barriers at the regional level, as the STAP Reviewer suggested, is not very practical because each PIC has its own set of priority barriers. This was explained to the STAP Reviewer in a teleconference with the PIGGAREP Team before coming up with the summary of the responses to the STAP Review comments.</p> <p>It should also be noted that the barriers to RE that were identified in each PIC will be addressed at the national level (and supplemented by regional interventions, where applicable) in an integrated manner. This is in recognition of the fact that the barriers are all interrelated. If the technical barriers are removed but not the financial barriers, then things will still remain as business as usual.</p>	<p>PB: Para 46 ProDoc: Para 16</p>

Annex 4

PIGGAREP Project Brief

Attached Separately

Signature Page

Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Island, Tonga, Tuvalu and Vanuatu

UNDAF Outcome(s)/Indicator(s):	Outcome(s)/Output(s)	Indicator(s)
Expected Outcome(s)/Indicator (s):	Reduction of the growth rate of GHG emissions from fossil fuel use in the Pacific Island Countries MYFF goal: Energy and environment for sustainable development MYFF service line: 3.3 Access to sustainable energy services	At the end of the 5 years project GHG emissions from fossil fuel use will be reduced by at least 370,000 tons of CO2 and by 2 million tons by 2015
Expected Output(s)/Annual Targets:	Renewable energy integrated into national development agenda	

Implementing partner: Secretariat of the Pacific Regional Environment Programme (SPREP)
 Other Partners: Government of Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Island, Tonga, Tuvalu and Vanuatu, CROP agencies, UN agencies, private sector and civil society entities

Programme Period: 2006 - 2010
 Programme Component: Managing Energy and environment for sustainable development
 Project Title: Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)
 Project ID: PIMS 3462: Proposal ID: BU:WSM10 00044633; Project ID: 00052573
 Project Duration: 5 years

Total budget:	US\$33,208,000
Allocated resources:	
• PIC governments	US\$26,470,000
• Other:	
GEF	US\$5,225,000
SPREP	US\$500,000
SOPAC/UNDP	US\$500,000
Donors & NGOs	US\$513,000

Government of Samoa

Signature	Date	Title
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SPREP

Signature	Date	Title
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UNDP Samoa

Signature	Date	Title
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