PACIFIC ISLANDS GREENHOUSE GAS ABATEMENT THROUGH RENEWABLE ENERGY PROJECT (PIGGAREP)

FINAL REPORT

MID TERM EVALUATION

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1. EXECUTIVE SUMMARY

The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) is a Global Environmental Facility (GEF) US$5.25 million grant funded five year project in eleven Pacific Island Countries (PICs)[1] under GEF Strategic Priority SP-4: Productive Uses of Renewable Energy. National on-the-ground PIGGAREP activities in the applicable 11 PICs began on 1 January 2008.

In its two full years of project implementation to date, PIGGAREP is clearly efficiently using its GEF funds to support a suite of relevant and effectively co-coordinated tangible "soft" (feasibility studies, resource assessments, training, etc) RE support activities that are useful contributions to donor provided "hard" RE equipment and hardware provision in PICs. These PIGGAREP supported activities are highly likely to lead to more successful and sustainable applicable projects with high development impacts and help mitigate the all too common donor funded "commission, hand over, and then forget" specific RE project approach in PICs that leads to so many donor RE projects not being sustainable post-project end.

The preparatory phase for PIGGAREP was the US$760,000 GEF funded Pacific Islands Renewable Energy Project (PIREP). PIREP produced: very useful national energy assessment reports for each of its 15 participating PICs; three excellent summary reports covering the potential role of demonstration projects, renewable energy (RE) financing systems, and RE support programmes; and a particularly useful and insightful regional synthesis of the 15 national assessment reports. The PIREP individual country project synthesis reports extensively canvassed the existing renewable energy situations in the relevant PICs. The PIREP reports concluded that an integrated range of RE support activities aimed at both the private sector and the public sector , including, but not limited to, suitable strategically chosen demonstration projects was needed to remove the identified barriers to the greater use of RE (and not just the productive uses of RE). The PIREP reports identified the capacity development needs for removing the identified barriers.

However, although the PIREP was supposed to be the design phase for PIGGAREP, in the actual PIGGAREP design the primary means to support the greater uptake of RE had become the use of hardware projects (both those existing at the time of the PIGGAREP design and new donor driven projects that would arise during PIGGAREP's implementation phase) as the basis for the demonstration of commercially sustainable RE projects.

In addition, in the stated PIGAGREP design, the main driver of promoting RE in PICs had become the private sector - all PIGGAREP RE projects were supposed to be "commercial". There is a good argument, as articulated by the PIGGAREP PMO during the review, that the awareness about successful RE projects and the confidence on RE, particularly on small scale

[1] Comprising Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

stand alone systems, are not that great. In this PMO argument, the private sector cannot come in just yet, hence, one needs to demonstrate first (with donor funded projects) that RE/PURE can work sustainably before the private sector comes in to make the investment. In the meantime, one involves the private sector in the installation and maintenance of these existing and new demo projects. This is a good and logical argument, but it is not one that is clearly articulated in the PIGGAREP design. If this is the rationale now being used in PIGGAREP, then it should be discussed with GEF (as the project funder) and if GEF agrees then it could usefully formally stated in updated PIGGAREP documentation as an evolution of the implementation of PIGGAREP and a way through some of the logical inconsistencies in its stated design.

Finally, in the PIGGAREP design, the stated purpose of supporting RE had become to foster productive uses of renewable energy (PURE). This may be related to PURE being an applicable GEF funding category. However, this focus on PURE applications was not the focus of the PIREP preparatory phase analysis, hence the focus on PURE appears to be a late addition to the project design to align with the available donor (GEF) funding category.

The ongoing reliance over many years on donor funding for energy projects in PICs has led to an ongoing lack of knowledge amongst RE advocates, politicians, decision makers, donors and their advisors, and the public in PICs, of the true cost of energy supply (whether fossil fuel based and/or RE) in urban, rural and remote island PIC settings. This is a key barrier to the commercial provision of RE in PICs that is a key stated purpose of PIGGAREP. Although there have been previous donor funded previous tariff studies, the results are generally not public and it does not appear that a consistent full-cost inclusive methodology has been applied either in PICs. This can be contrasted with other areas such as the eastern Caribbean island nations where in many of the countries electricity tariffs are at the full commercial cost of supply. This is an area where it is recommended that PIGGAREP provides a strong future focus.

The demonstration projects to be supported by PIGGAREP had also changed from (in its PIREP design phase) being specifically designed to showcase particular strategically chosen RE applications, to (in the PIGGAREP design) using existing and new demonstrations funded by other donors with the other donor contributions claimed as PIGGAREP co-funding. This is not completely surprising, as the generally limited PIC private sector involvement in electricity provision (especially in remote outer islands) means that the necessary GEF co-funding has to logically primarily come from donor and government funded projects. Particular issues with this approach is that the “commercial” side of such demonstrations would not have been an integral part of their designs, and the most that such projects could realistically aim for is that their O&M and capital replacement cost would be covered by user payments - with their initial capital costs generally being provided at no cost by grants from donors. These PIGGAREP RE “demonstration” projects therefore are fundamentally driven by donor processes, the true cost of energy supply is still not being consistently reported or even widely known, and the real commercial and post-project sustainability lessons are still not being learned from the many previous (often unsuccessful) RE demonstrations and projects undertaken to date in PICs.

The key issues identified for PIGGAREP in this review of its design and its operations to date, in particular are:

- its ongoing low level of expenditure (only around 25% of its budget has so far been spent in 50% of its planned 5-year life) and

- its lack of a real and/or consistent strategic barrier removal focus on its stated PURE applications, and/or on the stated enhanced real "commercial" provision of energy.

These are fundamental project design and project implementation issues. These fundamental issues cannot be solved by the PIGGAREP project management office (PMO) working harder and/or continuing to add resources at the PMO and in PICs and continuing to implement PIGGAREP better using exactly the same approach that has been used in the last two and half years.

It is therefore recommended that PIGGAREP operations in the remainder of its operations:

A. Implement a Strategic Barrier Removal Approach – to date the PIGGAREP PMO has had a particular focus on project expenditure, project outputs and co-funding achieved - which are all highly relevant operational issues that are necessary but not sufficient for PIGGAREP's ultimate success. However a complementary but completely different focus is now required to implement the pro-active strategic barrier removal approach that was the original rationale for PIGGAREP - as detailed in the PIREP analysis that constituted the design phase of PIGGAREP and as detailed in the wider PIGGAREP design itself. It is therefore recommended that PIGGAREP recruits suitable new and additional human resources for this new pro-active barrier removal focus. This would most effectively be achieved by recruitment of a suitably qualified, experienced and strategic barrier removal oriented international CTA (Chief Technical Advisor) to lead the remaining implementation of PIGGAREP and to more effectively utilise the specific project management skill set that exists in the current PIGGAREP PMO.

B. Start Documenting and Building on "Warts and All" Lessons Learned From Demonstrations - this comprehensive "warts and all" documentation of RE projects would maximise learning and avoid the repetition of past failed projects.

C. Move Towards Budgets That Reflect Alignment with PIGGAREP Objectives – this would entail a continuing and more explicit move away from a "fair" budget allocation window basis per PIC to a competitive funding basis where the funding of individual projects would need a strong justification of how the proposed project will contribute towards removing barriers to sustainable and "commercial" PURE applications - both in the individual PIC and across all PICs.

D. Strengthen PIC National Human Resources - PIGGAREP has already funded additional human resources in individual PIC energy offices, and this should be urgently extended, and should include power utilities as appropriate - to address the limited PIC capacity which is currently clearly limiting PIGGAREP's progress.

E. Focus on Barrier Removal and Replications as Primary PIGGAREP Success Indicator – to redress the current selection of projects for PIGGAREP soft funding support which seems to be heavily influenced by the co-funding that such projects will bring to PIGGAREP over the strategic barrier removal for "commercial" PURE attributes. Co-funding achieved is an important factor, but the ultimate rationale for a GEF grant funded SP-4 project such as PIGGAREP will be its success in achieving the sustainable removal of barriers to the uptake of PURE in the PICs. The overarching quantification of PIGGAREP's ultimate impact will be a combination of their GHG impact, the post-project sustainability of their PURE activities, the extent to which the private sector becomes involved on a commercial basis, and the replications that occur as a result of PIGGAREP activities.

2. INTRODUCTION

The Pacific Island Countries (PICs) are interested in increasing their use of renewable energy including for the following reasons: mitigation and adaption to climate change; the high, variable and unpredictable cost of imported oil products and LPG and its impact and energy security risks to their economies; and the potential for supplying additional social and productive energy use applications to add to their human and economic development, including improving access to electricity for the 70% of the PIC population who currently lack such access..

The PICs are generally very vulnerable to the cost of fossil fuel imports, in particular for those PICs reliant on limited and uncertain value exports (e.g. copra), with electricity generation that relies largely or totally on fossil fuel (diesel) power generation, and with transport needs totally reliant on imported diesel and petrol and to some extent jet fuel as well. Paying for imported fossil fuels is a major drain on local economies that are generally already under strain trying to meet urgent social, development and environmental needs. Fossil fuels are a major cost that PICs have no control over, and the uncontrollability volatility of oil based fossil fuel prices is a real threat to PIC social and economic development. UNDP have developed an Asia-Pacific Oil Price Vulnerability (OPVI)[2], which quantify such vulnerability. Of the 13 countries that are most vulnerable to soaring oil prices, four are PICs. The OPVI ranks Fiji, Samoa, Solomon Islands and Vanuatu as most vulnerable countries (in ascending order of vulnerability). Out of 24 Asia-Pacific countries included in the OPVI, Vanuatu is ranked as the second most vulnerable country.

[2] See http://regionalcentrebangkok.undp.or.th/documents/reports/UNDPReportonVulnerabilitytoRisingOilPrices.pdf

In terms of climate change, some PICs comprising low lying atolls are at risk of many of their islands becoming uninhabitable, and in the case of Tuvalu, Kiribati, Tokelau and Marshall Islands that the countries themselves disappear from climate change driven sea level rise. There is also an expectation of stronger and more frequent cyclones and extreme rain events into the future. Hence the PICs are amongst the most active countries supporting effective deep global GHG emission reductions. One means for PICs to show their tangible support for global GHG mitigation is to manage their own GHG emissions. In some cases, donor and/or carbon market support is available for projects that reduce GHG emissions.

Some of the PICs have very promising RE resources that can be utilised with a mix (depending on the PIC and available local RE resources) of existing mature technologies, including hydro power, PV for house and small grid applications, solar thermal for hot water heating, coconut oil to replace diesel for transport and power generation applications, and geothermal and wind power (if usable local resources exist) for power generation. All these technologies have been successfully deployed in PICs to date, primarily through a range of donor projects over the last nearly 30 years. There is some (variable) provision of RE equipment and services by the private sector in the larger PICs, and a general desire for a greater private sector role in RE, but this requires a greater commercial provision of energy services by existing public sector energy services providers so that the private sector can then more realistically compete on a more level-playing-field basis.

There is also a great potential to foster increased productive uses using renewable energy (PURE) for income generation and employment, including in particular in rural areas. However, this will generally not happen spontaneously from increased electricity supplies, or electrification of rural areas that do not currently have grid electricity supplies. To get viable and sustainable PURE applications underway generally takes a major and multi-faceted development initiatives in providing business development, entrepreneurship, finance, accounting, marketing, and so forth training and ongoing support alongside the provision of RE.

So there is a great interest in increasing the use of renewable energy (RE), with most PICs now having RE policies and targets in place, although the practical impact of such policies and targets is often modest in practice as the policies and targets are either ignored, there is not the local capacity to follow up to the policies and targets, or donors do not fund the necessary actions, and the policies and targets don't get translated to actual programs or installations on the ground. . In practice, the primary tangible support and implementation means for the various PICs RE policies and targets is the wide range of donor funding and capacity building support available. However, the RE donor support available generally focuses on specific project based planning, analysis and the supply of RE equipment – and not on "soft" components of training, awareness, resource studies, tariff studies to a consistent and "commercial" basis, and so forth.

The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) is a Global Environmental Facility (GEF) US$5.25 million grant funded five year project funded under GEF Strategic Priority 4 (SP-4) to remove the barriers in the 11 applicable

PICs[3] to reducing GHG emissions through the commercial provision of RE for productive uses (please see section 3.1 for the exact definition of what PIGAGREP includes.

The preparatory phase for PIGGAREP was the US$760,000 SPREP/UNDP/GEF medium scale project (MSP[4]) called Pacific Islands Renewable Energy Project (PIREP)[5] that was undertaken from May 2003 to mid-2006. Under PIREP a very extensive research, review and consultation process was undertaken in each of its 15 Pacific Island Countries (PICs) supported by national and international consultants. PIREP produced very useful national energy assessment reports for each of its 15 participating PICs. PIREP also produced three excellent summary reports covering the potential role of demonstration projects, renewable energy (RE) financing systems, and RE technical support programmes. In addition, PIREP also produced a particularly useful and insightful regional synthesis of the 15 national assessment reports.

A Full Scale Project (FSP) PIGGAREP project brief was then completed and submitted to GEF for review in March 2005. PIGGAREP then spent from April 2005 to the end of 2007 in GEF, UNDP, and SPREP processes covering various appraisals, review, approval and start up activities. Some of the specific steps were as follows: (i) the project went through a GEF STAP (Scientific and Technical Advisory Panel) review where a STAP international consultant provided many very useful comments and suggestions in relation to the objectives, proposed outputs and project logic; (ii) the project brief was then updated in response to the STAP review comments; (iii) the PIGGAREP project brief was submitted to the Global Environment Facility (GEF) Council Meeting on 3-8 June 2005 for consideration; (iv) the project brief was transformed into a UNDP Project Document (ProDoc) format by SPREP and UNDP; (v) GEF and UNDP internal approval and budget processes were then undertaken, and the co-financing contributions from other project partners were confirmed; and (vi) the project was approved by the GEF CEO on 6th September 2006.

With GEF funding approval obtained, PIGGAREP then formally commenced, a Project Manager (PM) was recruited, and the PM started work on the project in July 2007. A very modest (in relation to the budget, number and complexity of proposed PIGGAREP activities spread across 11 PICs, and the ambitious barrier removal strategic nature of PIGGAREP PURE and private sector sustainable provision of RE activities) regional Project Management Office (PMO) was established at SPREP in Apia, Samoa.

The main task of the PMO was to facilitate national level activities coordinated by country teams in each of the eleven PICs involved in PIGGAREP. The PMO had a core staff comprising a full time Project Manager (PM), a Project Accountant / Financial Officer who is co-shared with

[3] Comprising Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

[4] Note that having a MSP for a project preparatory phase is usually only undertaken for very large budget GEF projects or for regional project such as PIGAGREP facing greater complexity and more seated barriers

[5] Covering Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Marshal Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu

SPREP's Finance division and a Project Assistant /Secretary who is co-shared with the other projects in SPREP's Pacific Futures' Programme. The project's Regional Inception Workshop was held in November 2007, where a work plan for specific country-driven activities to be undertaken in calendar 2008 with a budget of US$1.12 million was considered, and endorsed. The endorsed work plan contained country-specific activities for each PIC, with a combined total of 93 separate planned activities.

National on-the-ground activities in the PIGGAREP PICs began on 1 January 2008.

As PIGGAREP is a GEF Full Sized Project (FSP) with a five year scheduled duration, it is therefore subject to a mid term review (this review) which has covered the period of PIGGAREP operations to 31December 2009 (2 ½ years of nominal operations and 2 years of full operations).

For this Mid Term Evaluation, from 23-27 November 2009 evaluation interviews with the PIGGAREP national team representatives and some other key stakeholders were run in parallel with the 2009 IUCN and PIGGAREP back-to-back Multipartite Review (MPR) meetings held in Nadi, Fiji. The evaluation interviews and observing the PIGGAREP MPR meeting in action were extremely useful to understand the practical pressures of other priority energy development projects (such as trying to rectify highly unreliable electricity supplies) and the limited human resources available to the national offices from the PICs responsible for PIGGAREP operations. Inclusion in some PIGGAREP email exchanges since the multipartite meetings have usefully highlighted an issue that was evident at the multipartite meeting interviews - of high underlying national PIGGAREP national energy office counterpart personnel turnover and the multiple calls on their time from the many projects that they are responsible for. The Mid Term Evaluation timescale and scope precluded site visits to the many specific projects where PIGGAREP is providing "soft" project assistance, so it was not possible to check in person the tangible value of this PIGGAREP support to PIGGAREP's objectives and modalities, although this was found to not preclude the necessary evaluation of PIGGARREP activities to date. A survey approach of PIGGAREP supported projects was considered, but it was felt that this was not a good use of limited evaluation time and resources, especially at this early stage of project implementation when most outputs are still underway and the regional "lessons learned" consolidation activities were not yet underway. The Mid Term Evaluation focused on reviewing the myriad project documents available from various sources, and closely reviewing the project's development history to review the project (as approved) against its background context analysis, and to review the alignment of its activities with the overarching stated project goal and objectives. The Mid Term Evaluation then looked closely at the Project Activity Summaries (PAS) that were made available and also reviewed available tariff studies for their scope, methodology used and consistency of their approaches to establish the baseline energy costs of the (primarily fossil fuel based) electricity systems in PICs.

This mid term evaluation report has benefited from the many helpful comments received from the project stakeholders at the evaluation interviews, but the analysis, conclusions reached and any remaining errors or omissions remain the responsibility of the author alone.

3. THE PROJECT AND ITS DEVELOPMENT CONTEXT

3.1 Promotion of Productive Uses of Renewable Energy

The logical starting point for the analysis of PIGGAREP and its development purpose is to review its stated funding purpose by GEF which is "SP-4: Productive Uses of Renewable Energy" and the long form in its signed PIGGAREP ProDoc (Project Document) which states that "The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) is a joint initiative by 11 Pacific Island Countries (PICs), the Secretariat of the Pacific Regional Environment Programme (SPREP), the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF). The global environment and development goal of PIGGAREP is the reduction of the growth rate of greenhouse gas (GHG) emission from fossil fuel use in the PICs through the removal of the barriers to the widespread and cost effective use of feasible renewable energy technologies. The specific objective of the project is the promotion of the productive use of renewable energy[6] to reduce GHG emission by removing the major barriers to the widespread and cost-effective use of commercially viable renewable energy technologies. PIGGAREP consists of various activities whose outputs will contribute to the removal of the major barriers to the widespread utilization of renewable energy technologies. The project is expected to bring about in the PICs: i) increased number of successful commercial renewable energy applications; ii) expanded market for renewable energy applications; iii) enhanced institutional capacity to design, implement and monitor renewable energy projects; iv) availability and accessibility of financing to existing and new renewable energy projects; v) strengthened legal and regulatory structures in the energy and environmental sectors; and, vi) increased awareness and knowledge on renewable energy and renewable energy technologies among key stakeholders"[7].

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[6] There seems to be no formal, clearly articulated or concise single paragraph definition of what does and does no constitute PURE. However, an official workshop co-hosted by GEF gives as close as one can find to an official GEF definition of what PURE includes, and what it does not include. The workshop discussion makes it very clear that PURE applications cannot be assumed to arise spontaneously from electrification, see http://www.martinot.info/GEF-FAO_productive_uses_workshop_summary.pdf. There are counter arguments, although not of an official GEF nature, for an expanded definition of PURE, e.g. that lighting provision for rural homes indirectly leads to productive uses via enhanced education and health effects - see Cabraal, Barnes and Agarwal at http://www.itpi.co.in/Resources/Renewable_Energy/Productive%20use%20of%20renewable%20energy%201005.pdf . However, this Cabraal et al argument is not supported by recent UNDP analysis in PICs that did not find such productive uses spontaneously arising in practice from past electrification efforts in PICs, see http://www.google.co.nz/search?q=%E2%80%A2%09Energy+and+Poverty+in+the+PICs+-+Challenges+and+Way+Forward+%E2%80%93+REM+Meeting+Session+5.0+%E2%80%93+Tonga+%E2%80%93+Thomas+Lynge+Jensen+-+April+2009+&rls=com.microsoft:en-us&ie=UTF-8&oe=UTF-8&startIndex=&startPage=1&rlz=&redir_esc=&ei=Pt8OTKDzD46CNubg7M8M. Hence for this evaluation the 2002 FAO-GEF workshop definition of PURE will be used, i.e. that PURE applications cannot be assumed to spontaneously arise from electrification and that PURE is primarily applications should have a predominantly income generation focus.

[7] Quoted as per the 31 July 2006 PIGGAREP Project Document that received GEF CEO endorsement and

The first key project and development context issue that arises from this definition is that the term "productive use of renewable energy" (PURE) was formulated in 2002 in a GEF co-sponsored workshop. Yet fostering PURE as distinct from fostering wider RE did not figure strongly in the summary outputs of PIREP produced in 2005, nor in the statement of the objectives of PIGGAREP in its April 2005 Project Brief, nor did it figure strongly in the rationale for PIGGAREP in the discussion of the purposes of the proposed GEF funding for PIGGAREP in the body of its ProDoc. Fostering PURE, as the key purpose of PIGGAREP, was first mentioned in the summary front end of the ProDoc. Thus it is highly likely that the rationale for PIGGAREP being to promote PURE was a late addition to the wider original RE barrier removal stated rationale of PIGGAREP as reflected in the body of the ProDoc. Such a late addition of PURE would then explain why there is no apparent explicit linkage between the PIGGAREP activities detail in the brief and PURE.

In terms of what the promotion of PURE through barrier removal activities does and does not cover, reviewing the applicable literature the PURE concept applied in GEF SP-4 projects (such as PIGGAREP) has no official definition. However, in practice the GEF SP-4 PURE concept primarily applies to income generating uses of RE, alongside community public services (health, communications, education, water supply etc). Therefore, PIGGAREP should be primarily focusing on productive uses of renewable energy (PURE) applications in its activities in applicable PICs, and noting that PURE can be just as applicable to thermal uses such as crop drying (say) as it can be to electrification. It also needs to be stressed that useful PURE applications are widely recognised to not necessarily arise spontaneously from improved energy supply (including, but not limited to, electrification).[8]

Thus, one would logically expect that PIGGAREP would contain explicit elements or focus in its supported activities to foster the productive uses of RE (e.g. financing, micro and small business training and supporting micro and SME credit for rural enterprises).

3.2 Links to PIREP Analyses/Conclusions

The PIREP individual country project synthesis reports very extensively and usefully canvassed the existing RE energy situations in PICs. PIREP produced three synthesis reports of ways that RE could be assisted in PICs. The country reports and synthesis reports clearly demonstrated that an integrated range of RE support activities (specifically strategically chosen demonstrations, technical support and financing mechanisms) would most effective in promoting the greater uptake of RE in PICs. However, in the PIGGAREP design (which was one of the key outputs of PIREP) the key means to support the greater uptake of RE had become the demonstration of sustainable RE systems through existing and new (primarily donor driven) demonstration

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was duly signed by the various project partners

[8] Energy and Poverty in the Pacific Island Countries – Challenges and the Way Forward, REP-PoR, UNDP Regional Centre in Bangkok , 2007

projects, and the purpose of supporting RE became to foster PURE applications. Yet the majority of the PIREP country and synthesis reports (and even large parts of the PIGGAREP ProDoc) did not explicitly support nor explicitly deny the use of demonstration projects as the primary means of RE barrier removal or the promotion of PURE as the primary rationale for supporting RE in PICs. Thus the choice of supporting demonstration projects as the primary means to showcase PURE applications in PICs seems to be a late and not fully integrated addition to the underlying PIGGAREP design. The demonstration projects to be supported by PIGGAREP had also changed from PIREP as those specifically designed to showcase particular RE applications, to providing "soft" support to existing and new RE projects funded by other donors (noting that this change would then enable PIGGAREP to claim the existing demonstration projects' donor funding as PIGGAREP co-funding and their GHG emission reductions as being the result of PIGGAREP support).

In addition, the promotion of productive uses of renewable energy (PURE) did not figure prominently as the primary reason to support the greater uptake of RE in PICs in these PIREP reports. Given that GEF Strategic Priority 4 was for PURE applications, PIGGAREP being focused towards PURE is understandable. The point that is being made here is that this was clearly a late addition to the PIGGAREP design and that the body of the PIGGAREP design does not reflect such a PURE focus. Thus, even the successful implementation of the PIGGAREP defined interventions will not directly lead to PURE applications in PICs, as they were not designed to do this.

3.3 Design Adjustments to STAP Reviewer Comments

As well as the unclear links from the PIREP situation analyses to the then proposed PIGGAREP design, the STAP reviewer of the PIGGAREP Project Brief drew attention to the fact[9] that the PIGGAREP design had (and it still has) very ambitious barrier removal and greenhouse gas reduction objectives (370,000 tons of CO2 emissions from PICs reduced by the end of the project and about 2 million tons by the end of 2015 or a 30% reduction in projected emissions). The PIGGAREP mid term evaluation reviewer has carefully studied the STAP reviewer's comments and agrees with the STAP reviewer that the PIGGAREP design had extremely ambitious (arguably unrealistic) objectives. These extremely ambitious (unrealistic) objectives may have been deemed necessary by the project proponents at the time to obtain GEF funding or may have been agreed to by parts of GEF so that they could have a Pacific project in their GEF project portfolio – the key point here is that PIGGAREP was never realistically going to directly reduce GHG emissions by 370,000 tons of CO2 emissions from PICs by the end of the project, or 2 million tons by 5 years after the project end, or a 30% reduction in projected overall PIC emissions.

[9] And also observed by the mid-term reviewer

In addition, reviewing the post-STAP PIGGAREP project design, it is clear that the project design was not fully adjusted to a more realistic level of ambition given the key STAP reviewer issues raised, in particular for: -

- The limited scale of incremental funding (US$5.225 million) that was being provided by GEF compared to the GHG emission reductions being envisaged,

- The scale and depth of the barriers that were identified in PIREP (the GEF funded PIGGAREP preparatory phase project covering all fifteen PICs) that were expected to be found for the effective promotion of renewable energy deployment in the eleven highly variable PIGGAREP PICs ranging from very small and highly dispersed countries (e.g. Kiribati) to highly concentrated (e.g. Nauru), often comprising primarily subsistence rural communities with low income levels (e.g. the Melanesian group of PNG, Solomon Islands and Vanuatu), and generally comprising many constituent individual islands and separate communities in each PIC;

- A project that has a focus on only funding barrier removal "soft" components (an explicit GEF requirement) in relation to the much larger scale of funding that is being provided as grants and soft loans by a wide range of donors. It should be noted that these donors have very distinct (from PIGGAREP) project formulation processes and objectives (e.g. commonly their objective is to use RE to provide rural electrification to primarily meet social uses) rather than to meet PIGGAREP's late addition of a PURE objective.

3.4 Purposes of Proposed Demonstrations

The primary proposed means for PIGGAREP to achieve its objectives was stated to be the use of existing or pipeline RE demonstration projects (with their hardware costs covered by other donors).

A fundamental issue then arises that these demonstrations would already have been developed (or would be in the process of being developed) for very different objectives to those of PIGGAREP.

In particular, most of these demonstrations would by definition not be designed to be fully "commercial" or to address PURE objectives, as many would have had their hardware provided at no cost by grants from donors and would be aimed at meeting social electrification needs. The most that such projects would aim for is that their O&M costs would be covered by user payments, but not their initial or replacement capital costs. So it is unclear how a demonstration project that was only designed to cover its ongoing O&M cost of social electricity provision at best would somehow demonstrate the "commercial" viability of PURE applications in PICs.

A further key issue is that, as detailed in the PIREP reports, most of the existing RE demonstrations in PICs would have been known to the PIGGAREP project designers to be unsuccessful commercially, with: unsustainably low tariffs requiring ongoing subsidies from PIC governments or leading to unreliable and/or intermittent power supply; high non-technical losses (theft and non-payment of electricity bills); lack of sustainable O&M funds retention and/or accountability (funds being diverted for other private or public uses; and so forth. In addition, many of the existing RE demonstration projects had fundamental engineering design deficiencies, a lack of sufficient community mobilisation (especially important for PURE applications in remote communities), limited renewable energy resource availability (e.g. wind projects in PICs), excessive project complexity for remote PIC communities (e.g. RE-hybrid projects), and so forth. Due to GEF funding restrictions PIGGAREP necessarily lacks the necessary hardware cost funding means to fix the deficient hardware components of the demonstrations and would have to rely on donors and governments to provide these hardware components - which then would undercut the fundamental private sector commercial provision of RE rationale of PIGGAREP. Yet the PIGGAREP design still aimed to use these demonstrations to prove the success of the private sector "commercial" supply of RE for productive uses, even although the demonstrations were designed for different non-commercial objectives including to meet social energy uses. Turning a non-commercial and social electricity supply project into a commercial model project delivering PURE applications would require a total project redesign and is not something that can just be realistically achieved with some PIGGAREP support of soft training components or a tariff study.

3.5 Level of Leverage/Co-Funding Sought

The PIGGAREP project had a very high level of anticipated leverage/co-funding (US$27.983 million) of other (primarily donor funded) activities that were planned to be counted as PIGGAREP barrier removal activities. However, PIGGAREP's focus was on private sector "commercial" PURE objectives, and the activities in question were generally designed by their donors for other non-commercial social objectives. Although adequate co-funding is a requirement of GEF projects such as PIGGAREP, a co-funding level of 1:1 is the minimum benchmark and PIGGAREP's 4:1 GEF/other co-funding ratio is in fact the average level sought across all GEF projects[10], in particular for developing countries with large private energy sector players that can provide high levels of co-funding. Given the highly disparate nature of the PICs, their limited private sector involvement in the energy sector, and the lack of past focus or experience in successfully promoting PURE in PICs, a 4:1 ratio of co-funding in PIGGAREP would have to be considered to be very high**,** if not fundamentally unrealistic[11].

[10] http://www.gefcountrysupport.org/docs/503.ppt#269,2,What is GEF Co-financing?

[11] The average GEF co-funding achieved under GEF-4 to 31 Dec 2007 (the 4th replenishment of GEF ending in mid 2010 was actually only 1.65:1 - see http://www.gefcountrysupport.org/docs/503.ppt#269,2,What is GEF Co-financing?

Further, in the case of PIGGAREP there is a high risk of double-counting - with allied projects funded by other donors being claimed as co-financing regardless of the true co-funding linkages - if unrealistically high co-funding levels are being sought in PICs.

3.6 GHG Reduction Target of PIGGAREP

The PIGGAREP design had a very ambitious 2 million tons of CO_2e GHG reductions by 2015 target, which is equivalent to a 30% reduction of baseline BAU GHG emissions across all the eleven PICs included in PIGGAREP. The 2 million tons of CO_2e GHG reductions by 2015 target is a total figure from three effects, direct CO_{2e} reductions of 371,100 tons, direct post-project CO_{2e} of 1,060,300 tons and the remainder being indirect CO_{2e} reductions. The direct reductions are to come from the addition of 50MW of new RE capacity installed by the demonstration activities supported under PIGGAREP and in place by the end of the PIGGAREP project, the direct post-project reductions are to come from 100MW of new RE capacity installed directly influenced by PIGGAREP activities by 5 years after the end of PIGGAREP, and the indirect CO_{2e} reductions are to come from the wider influence of PIGGAREP removing some of the multiple barriers to RE in PICs. There is a risk of double counting across donors from the 50MW of direct RE demonstration project emission reductions sought as the demonstrations would have gone ahead anyway in the absence of PIGGAREP, given that the demonstration project hardware components are funded by other donors, so more realistically PIGGAREP should only be claiming the impact of greater project effectiveness or a greater likelihood that the demonstration project would be sustainable post other donor involvement.

However, it is generally more useful in overall evaluation terms to link and record the links from specific PIGGAREP demonstration support activities and wider barrier removal interventions to their anticipated impacts (including but not limited to replications achieved or influenced and their impact on barrier removal results) rather than to spend excessive effort on trying prove the precise causality between specific PIGGAREP activities and hard (measurable) GHG reductions. GEF itself explicitly recognizes that its (GEF) GHG role is less directly related to achieving specific and measurable GHG reductions than is the case for other GHG reduction funding approaches such as CDM[12].

3.7 Project Design and Addressing Known Key Barriers

The barriers to the commercial and sustainable private sector ("commercial") investment in RE and how RE provision does not automatically lead to PURE applications in the PICs is well known, and was canvassed in PIREP as part of their wider analysis of RE developed for its multiplicity of purposes, as well as in other projects such as PREFACE. The barriers to the commercial provision of RE and its successful fostering or PURE applications include: -

[12] http://www.gefweb.org/Operational_Policies/Operational_Strategy/documents/CC_DRAFT-GEFCO2Manual.doc

- Pervasive donor grant or soft funding provision in PICs of both conventional fossil fuel and RE energy supply equipment costs - and the fact that many electricity tariffs barely cover O&M costs, let alone include a realistic tariff element to cover major overhauls or eventual equipment replacement (so continued donor dependency is in effect guaranteed);

- An understandable reluctance for PICs to turn away donors offering to provide new equipment (although this has occurred) or to offend past and future donors by being too explicit about the predictable underlying engineering deficiencies of many of the existing RE project designs in PICs - and the critical need to avoid such basic errors in future RE installations;

- A lack of knowledge amongst RE advocates, politicians, decision makers, donors and their advisors, and the public in PICs, of the true cost of energy supply (whether fossil fuel based and/or RE) in urban, rural and remote island PIC settings. Hence there is a pervasive and widely stated belief that RE applications in PICs will enable already unrealistically low electricity tariffs to be even further reduced - when in fact "commercial" and/or private sector provided RE will generally cost more than the current unrealistically low tariff and unsustainable (without continuing free new and replacement capital equipment provision by donors) baseline fossil fuel supply. But if tariffs can only be reduced if the RE equipment is provided at no cost by donors, then how will "commercial" RE provision be demonstrated by such no-cost to end users donor equipment provided RE demonstrations/applications that are being utilised as the primary means by PIGAGREP to remove barriers to the commercial provision of RE?;

- An often poor track record of RE installations' post project-end sustainability, due to unproven technology often being used, systems integration issues often being not properly addressed, post project human resources for sustainable ongoing O&M generally not being adequately addressed, and lessons learned not being comprehensively and openly documented and widely disseminated so that such often basic engineering or project ownership mistakes can be avoided in the future;

- That the provision of electricity in un-electrified remote areas generally does no lead to productive (that is, income generating) uses without a whole complementary range of business development and marketing skills and the provision of suitable financing. In the PIGAGREP design the productive sues of RE is implicitly assumed to just happen spontaneously.

So a key issue for this PIGGAREP mid term evaluation is whether PIGGAREP is on track to both: effectively deal in a systematic barrier removal fashion with the known barriers to the commercial provision of PURE in PICs and learn; and to document and disseminate the lessons

in the context of "commercial" provision of PURE from the many past RE projects in PICs and the RE projects where PIGGAREP is supporting their "soft" elements.

4. FINDINGS AND CONCLUSIONS

4.1 Sources of Evidence

These findings and conclusions are based on a review of PIGGAREP's existing and proposed activities, from close observation of the issues discussed and from the interviews conducted with PIGGAREP participants and stakeholders at the 23 – 27 November 2009 annual PIGGARREP multipartite review (MPR) meeting in Nadi in Fiji, and from a review of the extensive PIGGAREP and pre-PIGGAREP documentation both made available to the review and also available from public sources (see Annex C and this report's references). In particular, the PIREP summary documents provided very useful and relevant RE situation analyses for the applicable PICs, and made many very pertinent analyses and conclusions of the deep seated nature of the barriers facing RE project ongoing sustainability, the limited baseline role of the private sector in RE provision in PICs, the known dominant role of donors and subsidies leading electricity tariffs generally not reflecting full commercial supply costs, the generally serious design, technical, operational and local capacity causes of failure of most past RE demonstration projects[13], and so forth. Similar analyses are found in PREFACE, PIEPSAP, UNDP, ADB and other existing documentation of the baseline energy situation in PICs.

In addition, the PIGGAREP STAP review had provided many very useful comments to the PIGGAREP design before it was finalised. From the project designers' rejection of many of the STAP review comments, the limited degree to which the final PIGGAREP project brief was updated and the short period during which it was updated, and interviewing PIGGAREP national teams, the mid term evaluation reviewer has concluded that many of the STAP review comments both had considerable merit, and yet were not fully reflected in the subsequent updated Project Brief and approved Project Document. This lack of real consideration of the STAP reviewers comments is also detailed in the extensive, wide ranging and specific comments of the GEF Council Comments (by France and the USA) as detailed in Annex 2 of the PIGGAREP approved ProDoc (as publicly available on the GEF website). It is also notable that the GEF Council Comments also did not appear to have led to any significant changes in the final project design, or to have noticeably influenced the implementation of PIGGAREP to date.

[13] See paragraph 4, p1, Renewable Energy Support Programme for the Pacific Islands, PIREP, by Herb Wade, ISBN: 982-04-0305-7, published by SPREP, 2005

4.2 Deployment of Inputs (Expenditure) To Date

In PIGGAREP's start up phase covering from the beginning of July to the end of December 2007, only US$116,495 was spent.

In PIGGAREP's first full year of operation (calendar 2008), a very ambitious list of 93 separate national projects was proposed with a GEF funded country activity budget of US$893,254. If PMO budgets are included, the overall PIGGAREP 2008 budget totaled US$1,119,700. In the event, only US$533,121 was actually expended in the 2008 calendar year, including PMO and PIC project costs – for an overall expenditure rate of 48% of the budget in calendar 2008. At this level of expenditure, PMO costs accounted for around 40% of expenditure. This relatively high level PMO costs rather than project expenditure seems to be more a reflection of the low activity based expenditure in this start up phase than excessive PMO based costs.

In PIGGAREP's second full year of operation (calendar 2009), $680,974 had been actually spent by PIGGAREP according to the PIGGAREP four quarterly reports for calendar 2009. This represents a calendar 2009 expenditure rate of 52% compared to the 2009 budget of $1,313,500. To the end of the 3rd Quarter of 2009 the shortfall in project expenditure had been concentrated in a few PICs, notably Fiji, Niue, and PNG, along with reduced expenditure levels compared to those proposed for Kiribati and Tonga.

So PIGGAREP actual expenditure in its 2007 start up phase, and its first two full years of operation to 31 December 2009, has only been $1,330,590. This compares with a PIGGAREP 5 year budget of $5,225,000. Therefore, even although expenditure in calendar 2009 was up 28% on 2008 expenditure levels, it seems highly unlikely that PIGGAREP would fully expend its budget in five years of project operations by continuing to operate the way it has been to date.

This ongoing shortfall in expenditure compared to budgets in PIGAGREP's start up and early operations phase is clearly a result of ongoing unrealistic work plans for the individual PICs compared with local and PMO capacities, as well as overall inadequate PIC human resources and crowding out by other PIC commitments. Some useful first steps have been undertaken to correct these issues, primarily PIGGAREP providing some funding of PIC human resources to work on PIGGAREP activities, and the recruitment of a short term wind engineer at the PMO. However, more needs to be done in this human capacity addition regard if PIGGAREP activity levels are to realistically rise to the necessary levels to reflect the large PIGGAREP under-spend and the general lack of progress on overarching barrier removal activities to date.

4.3 Early Outputs and Achievements

PIGGAREP is clearly implementing a suite of relevant tangible "soft" (feasibility studies, resource assessments, training, etc) RE support activities that are useful contributions to donor provided "hard" RE equipment and hardware provision in PICs. These PIGGAREP supported

activities are highly likely to lead to more successful and sustainable applicable otherwise donor equipment focused RE projects in the PIGGAREP PICs as compared with a realistic BAU baseline scenario.

PIGGAREP funded "soft" activities to date appear to be effectively co-coordinated with other funding sources' planning and the other funding sources' provision of "hard" RE project oriented funding. PIGGAREP activities to date appear to have a high development impact for the incremental GEF funds deployed.

PIGGAREP funded activities to date appear to be a very efficient complement to the donor and PIC government RE funding focus that is primarily on the provision of "hard" RE project activities and especially mitigating somewhat the too common donor funded "commission, hand over, and then forget" specific RE project approach in PICs that leads to so many donor RE projects not being sustainable post-project end. In particular, PIGGAREP training "soft" activities are clearly making a valuable contribution to the post-project sustainability of the specific RE projects that PIGGAREP is supporting. PIGGAREP support of soft components (alongside the focus of other donors on equipment supply) is clearly an efficient use of GEF funds.

Specific PIGGAREP activities appear to be generally efficiently implemented, although direct evidence of this was not able to be reviewed given the large number of individual PIGGAREP activities being undertaken and the limited documentation made available on specific implemented activities undertaken to date.

PIGGAREP specific activity planning are subject to open peer review, and particularly to PMO critical review and suggested changes. However, it is not clear that the Project Steering Committee plays a particularly decisive management role in this activity planning function compared with the PMO leadership provided.

4.4 PIGGAREP Demonstration Projects

As discussed in Chapter 3 (The Project and Its Development Context) there is an underlying lack of clarity and realism in the PIGGAREP design as to what exactly, and how, the use of other donor hardware funded and led existing or pipeline demonstrations that are at the core of PIGGAREP's operations are supposed to remove the barriers to the productive uses of RE) in the applicable PICs. Each demonstration project is in effect a small and tangible engineering experiment, and as such each demonstration needs a clear objective, a hypothesis that it seeks to prove, a design that is likely to work technically, a suitable plan for its implementation, sufficient funding, suitable human resources (particularly for ongoing sustainable post-project implementation), proper implementation, a transparent evaluation of results and then replications to occur. Only when all of these elements are in place is it realistic to expect that the

demonstration(s) will lead to the desired 2 million tons CO2 reductions that were the basis for GEF funding.

For PIGGAREP, the overarching project operational hypothesis is set by its GEF SP-4 grant funding basis that the objective is to support the enhanced productive use of renewable energy (PURE). The underlying PIGAGREP design is that the primary means for PIGGAREP to remove the barriers to PURE will be through supporting specific demonstration projects. The PIGGAREP design also focuses on the private sector and "commercial" delivery of PURE. It also goes almost without saying that a RE demonstration project that primarily delivers energy for social uses or ignores project donor funding in setting its energy tariff will generally be of only modest use in fostering the wider private sector "commercial" delivery of PURE in PICs that is the stated objective of PIGGAREP.

Therefore, before a particular demonstration project in PIGGAREP can serve as a useful demonstration project, it needs certain basic attributes, including that: -

- The demonstration is explicitly aiming to foster productive uses of enhanced renewable energy supply - noting that UNDP reports have highlighted how the delivery of electrification does not in itself intrinsically lead to that energy being used for productive uses;

- The demonstration project has a wide replication potential - otherwise how will it contribute to the 2 million ton CO2 reduction GEF funding objective?;

- The demonstration project must use fully proven/reliable technologies - as a RE project that does not work at end of the project life or does not keep on working sustainable post-project will not be replicated or if it is replicated then that replication will generally not in turn be successful;

- That all costs are accounted for (included those provided by donors) in the setting of sustainable energy tariffs. In fact, unless donor financial contributions are explicitly and publicly identified on energy bills, it is hard to see how the private sector will be able to replicate the demonstration project without accessing similar unsustainable donor funding;

Unfortunately, little evidence could be seen in the PIGGAREP demonstration projects undertaken to date or underway of their using such explicit intervention logic, or that PIGGAREP is focusing explicitly on choosing to support only demonstration projects with such PURE or private sector commercial and so forth success factors, or focusing explicitly on ongoing specific project sustainability and links to future replications.

Therefore, in the future demonstration projects supported by PIGGAREP there needs to be: -

- a clear and explicit focus on demonstrations which are focused on proving that a technology works in real, representative and widely replicable PIC applications;

- sustainable replication focused demonstrations where equipment costs (including donor equipment costs), sustainable management structures, and sustainable tariff setting and credit control mechanisms are established;

- ongoing training of project operators is properly dealt with (most projects train up system operators and ignore the fact that many trained system operators then use their new skills to get new higher paying jobs elsewhere so ongoing training and decent pay rates are required to have ongoing suitably RE trained staff in practice into the future);

- evaluating the demonstrations and actively marketing their results to foster further replications;

- tracking the replications that occur so that at project end the impact of PIGGAREP can be evaluated.

4.5 Funds Deployment and Input-Output-Outcome-Impact Links

Even if one counts PIGGAREP as effectively starting active operations from 1 January 2008, clearly, at the current rate of expenditure (of $1,214,095 in two full years of operations), or even with increasing expenditure levels, with current approaches PIGGAREP seems highly unlikely to be able to expend all its funds in its remaining three years of operation (as on current plans PIGGAREP is scheduled to finish at the end of June 2012).

However, the rate of funds expenditure only shows PIGGAREP's use of inputs (money) and even the tracking of individual activity outputs (while necessary) is not sufficient to comprehensively evaluate PIGGAREP's real impact on the increased commercial and post-project sustainable PURE uptake that is the core rationale of GEF funding of PIGGAREP. Therefore, the tracking of inputs and activities undertaken (outputs) needs to be complemented by clear links to PIGGAREP's long term barrier removal impacts to usefully gain a proper balanced view of PIGGAREP's results.

There is currently comprehensive quarterly reporting available for PIGGAREP activities which is extremely useful in detailing what PIGGAREP funds are being spent on and what specific activities are involved in each PIC and across PIGGAREO as a whole. However, reporting on PIGGAREP needs to be extended from the list of inputs, activities funded and output indicators if PIGAGREP is to ultimately be able to detail its impact. Critically, the project needs to start tracking how inputs (GEF funding) leads to outputs (studies, reports, and so forth produced) and then the outputs that are produced need to be shown to logically lead to the desired impacts, in particular the removal of the barriers to the increased private sector provision of productive uses

of renewable energy ("commercial" PURE). With PIGGAREP now having been in operation for around two years, it is of concern in an evaluation sense that there seems to be little documentation to date that links PIGGAREP activities and output indicators to the systematic and strategic removal of the key RE barriers in PICs identified in PIGGAREP's PIREP preparatory phase. For example, a major barrier to the sustainable private sector provision of RE in PICs is the near universal under-recovery of true electricity supply costs in actual PIC electricity tariffs - and yet there seems to be little work in a systematic way in this area by PIGGAREP. Without this true cost of energy supply knowledge it is hard to see how PIGGAREP can effectively operate at its necessary strategic barrier removal level.

Although a key end-of-project performance indicator for PIGGAREP will be its replications achieved (which are not yet apparently being actively fostered or tracked in a systematic way), in isolation the co-funding associated with PIGGAREP will not be particularly informative of PIGGAREP's impact or lack of impact in removing the barriers to "commercial" PURE applications in PICs. The high 4:1 co-funding leverage being sought means that there will almost certainly be challenges to usefully attribute PIGGAREP's financial leverage in a meaningful real causality way compared with the impact of the donor funding that generally covers the major part of individual PIC RE project costs.

4.6 Tariff Studies for Ongoing Sustainable Commercial Operations

A major logical inconsistency intrinsic in PIGGAREP's design is that PIGGAREP's stated objective of removing the barriers to the uptake of PURE in PICs private sector "commercial" energy developments relies on "free" donor hardware funding for the demonstrations to prove the "commercial" viability of such applications. With hardware provided "free" by donors, it is not clear if PIGGAREP's demonstrations are supposed to somehow lead to private sector led "commercial" replications (that will not be supported by PIGGAREP). A more likely scenario is that the PIGGAREP demonstrations are implicitly assumed to lead to replications that will also be the recipient of similar further "free" hardware from donors. If ongoing donor provision of RE equipment is assumed in ongoing replications (as seems to implicitly be the case for PIGGAREP) then it is not clear how RE in PICs is supposed to transition to the private sector providing sustainable "commercial" solutions which is PIGGAREP's stated purpose. In other words, it is hard to see how the donor equipment provision dependence in PIGGAREP demonstrations will not just continue post the PIGGAREP project end point.

The most obvious way out of this "Catch-22" dichotomy is to first determine and then to widely publicize the true cost (especially including donor, government and any private sector capital costs) of energy supply (in particular for electricity supply as this is where this contradiction is greatest) in PICs so that private sector developers and/or operators of RE can have the information and can obtain the necessary popular support to obtain similar levels of support to their donor provided alternatives and so that decision makers, advisors and end users of energy

are aware of the true cost of supply and treat RE alternatives on a level playing field to their fossil fuel baseline alternatives.

The PIEPSAP project funded tariff studies for the Solomon Islands and Tuvalu in 2007, and no doubt there are other existing relevant tariff studies funded by donors such as ADB and World Bank that would be available to PIGGAREP on confidential basis if so requested (no PIGGAREP supported tariff study results yet seem to be completed).

Such a PIGGAREP review of existing tariff studies (including confidential studies) should include all applicable costs - including in particular the "free" donor hardware capital cost contributions as well as a lack of accounting for the necessary depreciation to fund the eventual replacement of capital assets. In particular, the implementation of PIGGAREP itself to date is also encouraging the further provision of "free" RE equipment (from donors) to lower running costs and hence further lower the generally already unrealistically low tariffs, notwithstanding that the RE equipment has a finite useful life and then will have to be replaced, and then where will the funds for the replacement RE equipment come from? (it seems that the replacement equipment is generally implicitly assumed to be provided by future donors).

Such tariff studies need to find tariff levels that would enable the applicable electricity supply system to keep on financially operating sustainably, but critically need to fully and explicitly consider whether donors are expected to ultimately provide for the necessary major system replacements at the end of major RE systems' lives. There are also issues in tariff studies that should be included around government subsidies and the hidden costs of unreliable electricity supply and high technical and non-technical losses from under-investment in system maintenance, poor credit control and inadequate systems governance arrangements. None of these issues are unique to PICs, and methodologies such as depreciated historical cost rate base, suitable rates of return on allowable ("prudent") assets, and applicable optimized and applicable capital and operating costs for electricity utilities are available and widely used in different jurisdictions worldwide. While both Australia and New Zealand use ODV (Optimised Deprival Value)[14] means of valuing electricity sector assets, in practice this ODV approach seems to have been (mis)used to justify large asset and price increases from electricity consumers to provide a windfall wealth transfer to benefit monopoly asset owners and as such ODV and its variants are suggested to be used with great care as a useful basis for future tariff studies in PICs under PIGGAREP.

A useful role for PIGGAREP could therefore be to develop a major pro-active effort to consolidate and build on existing tariff studies to develop PIC wide urban / rural / remote island easy-to-access and credible information on the true cost of electricity supply - including donor hardware "free" or soft loan provision and support, government fuel and other subsidies, under-

[14] For an overview of why such ODV approaches have a weak theoretical rationale and a large propensity for misuse in practice to inflate asset values and justify questionable higher consumer electricity prices, see Bertram in http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1216&context=theses and for an Australia review along similar lines see http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1216&context=theses

funded maintenance and hence increased electricity supply related breakdowns, and less that 24/7 electricity supply. This publicly available and widely disseminated true cost of energy supply information would then assist in leveling the playing field for private sector delivery of RE to either be paid or be sold for a price competitive with true existing (fossil fuel and donor provided RE) supply costs, or receive similar budgetary or similar support to existing fossil fuel based publicly provided electricity supply.

4.7 Learning from Past PIC RE Project Experiences

Although PIREP (the $700,000 budget preparatory phase of PIGGAREP) extensively assessed the renewable energy experiences in PICs and drew overarching lessons learned, this information is now around 5 to 6 years old. Some of the high profile RE projects in PIC's are known semi-privately to not be particularly successful, but the causes and lessons learned are not generally publicly known in a comprehensive and forward learning context. Indeed, some of the projects that PIGGAREP is proposing to support involves the re-engineering of less than completely successful past projects, please see earlier comments regarding demo projects and what is required for demo projects to give useful results and lead to replications. In the absence of updated public information on the true experience of past successful and unsuccessful RE projects in PICs, it is hard to be fully confident that the proper lessons learned have been gleaned from these projects and that such known design and implementation failure modes will not be repeated again in the future.

So a suggested highly relevant catalytic role for PIGGAREP to fulfill its GEF objectives moving forward would be to update (the PIREP lessons learned) and widely publicize suitable condensed and professionally edited lessons learned in RE applications in PICs (including but not limited to the role of the private sector and/or in fostering PURE applications). Such work would be ideally undertaken with other leading development agencies in the energy sector in PICs, for example ADB, the World Bank, the EU and applicable bilateral donors (including in particular, Australia, France, New Zealand, Japan and the US with their particularly important ongoing donor roles in PICs). Such a collaborative forward looking approach would maximise the "full-and-frank" access to RE project results and experiences from all sources and also maximise the ownership of the resulting publication to influence the design and implementation of as many as possible of the future RE projects in PICs and elsewhere.

Such a collaborative and up-to-date "PIC RE Lessons Learned" publication could also usefully include the true cost of energy supply work from reviewing and consolidating "true all-inclusive cost" long term sustainable focused tariff reviews as suggested in Section 4.6.

4.8 Performance Measurement Indicators and Targets

The PIGGAREP performance measurement indicators and targets used in the project monitoring system and reported in the Quarterly reports are on balance suitably SMART (Specific, Measurable, Achievable, Realistic/Reasonable, and Time bound) to define the specific outputs sought. The activities involving PIGGAREP support are categorized under the six PIGGAREP project components in the 2010 work plan and in the quarterly reports, but in many cases the links to achieving the objective of the stated component are not very clear. In addition, in many cases the outputs being delivered have only weak links to the achievement of the stated project outcomes as specified in the final agreed project brief.

Component 1: Technical Capacity Building and Technology Support
This component comprises 30% of proposed PIGGAREP expenditure in 2010.

A. Regional RE Resource Assessment
Under this activity, a range of activities are well underway to support wind and other resource assessment studies in a range of possible PICs, and these activities seem to be suitably SMART in their design. Suitable work seems to be underway for this stage of the PIGGAREP project to support most of the specified activities under this component. Suitable adaptive changes have been made for changing circumstances with specific activities.

B. Technical Support
Under activity #2 "Conduct of Training Course on the Design, Feasibility Evaluation, Operation and Maintenance of RE Systems (electricity and non-electricity)", the support of RE related training courses has been an early focus of PIGGAREP, and the courses chosen seem to be appropriate and valued for PIC needs. However, it is not clear if the value of such courses to the course participants is yet being evaluated systematically.

There is less evidence of significant PIGGAREP activity to date under the other five activities specified under this component.

C. RE Demonstration Projects
PIGGAREP is clearly supporting appropriate "soft" components of a wide range of RE projects where the hard components are being supported by a range of other donors. The PIGGAREP supported soft components of the demonstrations seem to be suitably SMART. The specific PIGGAREP supported RE demonstration projects being supported are generally rather different from those envisaged in the project design Note that this is not a criticism of PIGGAREP, as changes in envisaged demo projects is a common factor in GEF projects given the generally long timeframes involved between the envisaged activities being identified, and the project becoming operational and being in a position to support specific

activities[15]. However, the overarching purposes of undertaking the specific demonstration being undertaken by PIGGAREP seems to be less clear, as expanded elsewhere in this evaluation report. In particular, it is not clear that the specific demonstrations being supported by PIGGAREP to date meet this component's specific objectives (as stated in the approved ProDoc) "to showcase the business angle of RE applications, the demonstration of the design, development, engineering, financing, implementation, and commercial operation and maintenance of RE-based energy system projects." This is a common area of weakness in demonstration projects and is an area where it would seem that PIGGAREP could usefully develop a guide on the results and lessons learned from the PIGGAREP involved demonstrations and the criteria need when selecting future demos to showcase PURE projects in PICs

Component 2: RE Market Development
This component comprises 15% of proposed PIGGAREP expenditure in 2010.

The ProDoc definition of the activities to be undertaken under this component states "It gives a special emphasis to the creation of an enabling environment for the private sector, as a key driver of RE in the PICs" and "It will be ensured that the pipeline of "bankable" RE projects will consists only of socially-accepted, and environmentally sound RET applications, with considerable number of those with emphasis on enhanced utilization of RE for productive uses and income generation." In this context it should be noted that the PIGGAREP definition of "bankable" includes those to be financed by international donors, which is somewhat of a wider definition than the stated objective of fostering private sector RE projects, as above.

In 2010 six activities are proposed under this component, from their description they appear to be capable of having suitable SMART objectives but it was not possible to see enough detail of the specific projects to explicitly evaluate this.

Component 3: RE Institutional Strengthening
This component comprises 15% of proposed PIGGAREP expenditure in 2010.

Reviewing the calendar year 2010 proposed activities under this component, it is not clear if all the activities classified under this activity are primarily institution strengthening in nature, or are in fact more oriented towards other components.

Component 4: RE Financial Support
Although this component comprises 10% of proposed PIGGAREP expenditure in 2010, it is hard to see much detail or specificity in the specific proposed activities in the 2010 work plan. It would seem that this component is less well developed than component 1. There is too little

[15] Refer to evaluation findings of GEF Country Portfolio Evaluation: Samoa (1992–2007), March 2008, GEF; GEF Climate Change Program Study 2004; and GEF Evaluation of the Role and Contribution of UNDP in Environment and Energy, UNDP, August 2008

detail available to meaningfully assess how SMART or otherwise the activities in this component are.

Component 5: RE Policy and Regulatory Support
Although this component comprises 20% of proposed PIGGAREP expenditure in 2010, there are few specific activities listed in the 2010 work plan relating to this component at the individual PIC level. The two regional activities proposed for 2010 sunder this component seem to have suitable SMART objectives.

Component 6: RE Information and Awareness Enhancement
Although this component comprises 10% of proposed PIGGAREP expenditure in 2010, there are few specific activities listed in the 2010 work plan relating to this component at either the individual PIC or regional levels.

Overall, for individual activities proposed in the 2010 work plan a review of the scope, budget, and links to overarching PIGGAREP objectives as well as how SMART they are shows that the relative budgets by component understate the focus on Component 1: Technical Capacity Building and Technology Support in 2010 PIGGAREP operations. In addition, the component 1 activities seem to be easier to evaluate in terms of how SMART they are. This suggests that the PIGGAREP project is more oriented to undertaking technical activities such as resources monitoring before it moves onto a focus on the other components. This is an excellent strategy, provided that there is indeed a growing emphasis on the other activities as PIGGAREP continues to be implemented in its remaining project life.

4.9 Need for a Fundamental Review of PIGGAREP Operations

The issues identified for PIGGAREP in this review of its design and its operations to date, in particular its ongoing low level of expenditure and its lack of a real and/or consistent strategic barrier removal focus on PURE, and/or "commercial" provision of energy seem to be of a fundamental PIGGAREP design and implementation nature. These fundamental issues will not be solved by the PMO just working harder and/or adding resources and continuing to implement PIGGAREP better using the same approach that has been followed in the last two and half years. This then suggests that a fundamental review of the operating modalities of PIGGAREP is required, including: -

4.9.1 More Than Just Working Harder Is Required

PIGGAREP activities to date are particularly focused (and understandably so to initially get tangible RE activities underway in the two years since PIGGAREP's effective start) on working alongside the existing and pipeline predominantly donor driven RE projects in PICs. The PIGGAREP PMO is clearly working hard to tease out specific relevant project activities from individual PIGGAREP participating countries, and once specific and relevant activities are identified then the PMO is clearly working hard to get them underway as soon as

possible. So the issue is not so much improving the efficiency or effectiveness of the current PIGGAREP approach, rather it is a need for additional future PIGGAREP resources and a new approach that complements the approach currently being followed.

4.9.2 Continue Adding Specific Expertise to the PMO

The PIGGAREP PMO has recently added specific wind energy assessment and engineering expertise with an initial 6 month appointment of an international wind energy expert. This is a useful model for the appointment of further experts to beef up the PIGGAREP PMO capacity in specific RE technology and barrier removal areas. The appointment of suitable international experts could also usefully be considered in the promotion of PURE as well as in the area of determining and publicizing (in a collaborative way with other RE funding agencies and donors active in PICs) the true cost of baseline energy supply and the true cost (including donor equipment provision) and necessary support of RE alternatives.

4.9.3 Moving Beyond Ad-Hoc Opportunism to Systematic Strategic Barrier Removal Focus

The addition of suitable international experts would enable PIGGAREP (through its PMO) to build on its current (understandable) ad-hoc opportunism approach of adding soft support to all relevant existing and pipeline RE project driven by other donor priorities and processes - to a more pro-active and strategic focus on fostering PURE applications as well as to pursuing a more commercial approach to RE delivery in PICs. The PIGGAREP design was based on PIGGAREP being able to positively change participating PIC energy investments towards renewable energy applications delivered by the private sector for productive uses through strategically chosen “soft” barrier removal activities, in particular through demonstration projects. However, this specific pro-active strategic barrier removal approach is not yet the consistent focus of PIGGAREP project support to date. Rather PIGGAREP is providing soft support on an ad-hoc opportunistic basis to almost any available RE project. PIGGAREP now urgently need to strengthen its early moves towards providing this soft support in an explicit barrier removal in individual or overall PICs context, including engaging local PIGGAREP project coordinators.

4.9.4 Continue Adding Targeted Resources to PIC Energy offices

In practice the PIC energy offices that are PIGGAREP’s key counterparts are clearly generally overstretched in staff terms. The PIC energy offices operate in an environment where RE (or not) energy investments are driven mainly by the agenda of the donors who are providing the grant or soft loan “hard” investment funding for most of the PIC energy projects. PIC energy offices have to deal with multiple and overlapping donors and programs underway at any one time in PICs, and many poorly conceived RE pilot/demonstration projects – including of course many of those that are envisaged to be used by PIGGAREP. Lessons from past failures are not generally known to new donors and to their consultants; and there is not enough emphasis on the replication of existing RE projects that build on what is known to work, and avoid what is known not to work, in the Pacific already. All this puts a huge burden on PIC energy office staff.

A major constraint on PIGGAREP's effectiveness is a widespread lack of PIC energy office, power utility, and other relevant agencies' human capacity and experience. There is a major burden on the limited PIC energy office staff resources to provide the coordination, supply necessary reports and attend meetings with travel between highly dispersed PICs with infrequent flight connections and time consuming long travel times and connections between the various donor projects underway at any one time, of which PIGGAREP is only one of many.

PIGGAREP therefore needs to continue it current approach to fund energy agency additional human resources at the PIC level to overcome this PIC human capacity constraint that is now clearly holding back PIGGAREP progress.

4.9.5 Moving to Success Indicators Beyond Primarily Co-funding Achieved

There is a strong current emphasis in PIGGAREP on documenting and achieving the ambitious co-funding targets set in the project design. While this is a laudable element of tracking PIGGAREP's progress, PIGGAREP's co-funding achieved / claimed is unlikely to be the predominant issue in the overall success or otherwise final evaluation rating of the completed PIGGAREP project. In addition, this focus is causing some concern amongst some PIC participants and project partners that this co-funding emphasis is diverting attention from the real PIGGAREP added value of its barrier removal activities in promoting PURE in the PICs that should be PIGGAREP's key focus.

4.9.6 Reviewing Funding Arrangements to PICs

The funding reimbursement model being used in PIGGAREP is claimed by PIC representatives to be causing delays and it was claimed that this reimbursement model may need to be reexamined for its ease of access by some PIGGAREP PICs. However, it is explicitly stated on p. 20 of the Inception Phase report[16] that a direct payment option is also available. It is not clear if the PICs do not fully understand this option, or if there are constraints in practice to the use of this direct payment option for individual PICs. This clearly needs to be looked at and suitable action taken as required.

4.9.7 Recognizing That PIGGAREP Is Only One RE Funder Amongst Many

There was a lack clarity in large parts of the PIGGAREP design documentation that in practice PIGGAREP would be only one of many donor funding projects that would support the energy sector (including but not limited to RE applications) that individual PICs have available at any one time. In addition, in most cases PIGGAREP would not be a large source of funding either when compared to other donor funding sources. Therefore, excessive complexity or restrictions or constraints on PIGGAREP funds access would mean that PIGGAREP just does not get to the top of overworked PIC energy staff to-do lists. This is an important issue in practice for some PICs.

[16] http://www.sprep.org/climate_change/documents/FinalInceptionReport.pdf

4.9.8 Funding Projects on PIC-Wide PURE Demonstration Value Instead of Equal Share per PIC Basis

Increased flexibility in funding allocations between PIGGAREP PICs is needed to increase the funds disbursement rate[17]. There is little point in sticking to a "fair" funding allocation between PIGGAREP participating countries if some countries do not fully utilise their funding allocations and other more responsive countries are not then able to increase their access to available PIGGAREP funds (noting that this is a common issue with donor funded multiple country projects). This is an issue that needs to be addressed - to channel more funds to those PICs who are pro-active and responsive to PIGGAREP objectives and who are in the best position to utilise greater PIGGAREP funding (the relevant equivalent basic military tenet is "reinforce success and abandon failure").

5. LESSONS LEARNED

5.1 Need for Realistic View of Prior and Baseline Situation

PIREP, the preparatory phase GEF funded project to PIGGAREP, undertook an extensive exercise to understand the development context, current situation, and what needed to be done for sustainable RE interventions and developments across each of the 15 PICs and across all its 15 PICs as a group. These summaries are very soundly based on an objective view of the RE situation and barrier removal actions required in the 15 PIREP PICs individually and as a group to 2004. However, when PIGGAREP was being formulated, the focus then shifted to using demonstrations as the primary tool to remove the many and intertwined barriers facing the uptake of RE in the 11 PIGGAREP PICs. This primary role for demonstrations to reduce barriers to RE in PICs does not seem to be a key finding in the publicly available PIREP summary reports. However, the project design then understated the predominant role of donors in driving the RE agenda, the persistent under pricing of electricity, the weak capacity and influence of PIC energy offices, and the gulf between RE policies and what really happens in RE and conventional energy developments – perhaps because these and other issues did not fit the demonstration project led model that was chosen for PIGGAREP. PIGGAREP will struggle to meet its wider objectives unless it deals with the objective realities of RE and particularly PURE in PICs - as extensively detailed in the PIREP summary reports and in the UNDP reports covering the earlier experience of PURE uptake in PICs. Projects that are not based on the objective baseline reality are unlikely to meet their underlying intervention objectives.

[17] In the Inception Report p. 18 there is a provision for such funding flexibility "It is to be noted that the PSC has the authority to reallocate the indicative allocations to other PICs and activities giving due consideration to the project's set timeline, goal and objectives."

5.2 Clarify What Demonstrations Are Supposed to Prove

PIGGAREP's main stated barrier removal mechanism is the successful demonstration of RE in PICs. However, all demonstrations are not created equal nor do all demonstrations have similar objectives. It is common to find developing countries demonstrations that are really proof-of-concept rather than sustainable post-project operations focused, most demonstrations have equipment provided by donors at no cost to the host government or community (with equipment specifications and specific project designs not particularly influenced by the host government or community either), most demonstrations have inadequate sustainable post-project training and O&M elements, and many demonstrations are not based on the lessons learned from earlier similar (often unsuccessful) demonstration projects.

To really be useful, PIGGAREP's demonstration projects have to be explicitly designed to demonstrate the core hypothesis of PIGGAREP – which is that properly designed and implemented commercially focused and private sector operated RE projects can successfully meet PIC productive use of RE needs when competing on a true level playing field with fossil fuel energy supply baseline options. The only other way that demonstrations can help meet PIGGAREP's objectives is if badly designed and/or poorly operating RE projects are objectively analysed to provide publicly available and widely disseminated valuable lessons of how not to design and implement future RE projects in PICs. At the moment PIGGAREP seems to be supporting the soft components of all applicable RE projects regardless of their designs meeting the overarching objectives of PIGGAREP or not. It is hard to see how such unfocussed PIGGAREP supported RE demonstrations will prove much that is not already known from an objective review of existing and often unsuccessful demonstrations. Thus projects such as PIGGAREP need to be clear as to what their supported demonstrations are supposed to achieve and only support demonstrations that will provide significant new knowledge or directly support the particular project's intervention logic.

5.3 Clarify What "Commercial" and "Productive Use" Mean

PIGGAREP's design talks of proving the commercial[18] operation of RE in meeting productive uses of renewable energy[19] needs in PICs. From a review of the PIGGAREP design and from a review of the RE projects where PIGGAREP is providing "soft" project support to date, it is not very clear what PIGGAREP's operational definitions are of "commercial" operation of RE, nor what meeting "productive use" energy needs in PICs is thought to really mean. The objective reality of PIGGAREP individual RE projects' support to date is that PIGGAREP is supporting the soft components of nearly all available RE projects funded by donors in the applicable PICs where PIGGAREP can claim the co-funding provided by the donors to be PIGGAREP co-funding. Now there is nothing intrinsically wrong in an RE support project such as PIGGAREP

[18] See item 1, p1 in summary of PIGGAREP in ProDoc as posted on the GEF website

[19] See "Strategic Priorities: SP-4: Productive uses of renewable energy" in title page of PIGGAREP in ProDoc as posted on the GEF website

supporting the missing soft components of nearly all available RE projects, but it is not clear how such support will meet the overarching objective of strategically removing the barriers to PURE in PICs so that such projects can be sustainable post-PIGGAREP without PIGGAREP support.

Projects such as PIGGAREP therefore need to be clear whether they are ad-hoc opportunistically supporting nearly all available donor funded RE projects, or whether they are attempting to strategically pick and chose or which projects to support or better still significantly influence the objectives of new RE projects so that these new projects' objectives align with the specific barrier removal objectives of project's such as PIGGAREP.

5.4 Productive Uses Will Not Just Spontaneously Appear

It is well understood that the key to developing productive uses in small predominantly local market communities such as typically found in PICs is the fostering of local business skills, improving access to markets, and the local availability of productive uses micro credit[20]. Preliminary work by UNDP regarding the experience of bringing unfocussed RE to PICs clearly shows that PURE applications do not generally spontaneously develop[21] and this was known to UNDP as an issue for GEF SP-4 project designs in 2004[22]. Although the PIGGAREP design states that its development objective is the enhanced productive use of renewable energy (PURE), there is little specific planned activity apparent to foster such PURE application either in the PIGGAREP project design, and there is also little activity planned or underway yet in PIGGAREP's implementation to date to pro-actively develop PURE applications. So it is unrealistic for projects such as PIGGAREP to state that their purpose is to meet GEF SP-4 PURE objectives without their being specific elements in both the design and in the implementation of the project to foster productive uses of renewable energy.

5.5 Focus on Addressing Overarching Project Objectives

PIGGAREP is currently being implemented with a strong focus on maximizing plausible co-funding that can be claimed by PIGGAREP, as well as achieving the large number of specific outputs that apparently arose out of its Logical Framework Analysis (Logframe) exercise. However, these emphases seem to be crowding out a focus on achieving its underlying intervention logic – which is demonstrating that properly designed and implemented commercially focused and private sector operated RE projects can successfully meet PIC productive use of RE needs when competing on a true level playing field with fossil fuel energy supply baseline options.

[20] http://www.martinot.info/GEF-FAO_productive_uses_workshop_summary.pdf
[21] Energy and Poverty in the PICs - Challenges and Way Forward – UNDP Regional Center Bangkok, Regional Energy Programme –Poverty Reduction (REP-PoR), 2007
[22] http://www.undp.org/gef/documents/Programming_Kit_Generic.doc

If it continues on its current course, PIGGAREP is in danger of achieving many of its specific outputs but not significantly contributing to its wider RE barrier removal objectives. Achieving specific outputs in projects like PIGGAREP will be no substitute for delivering on its wider barrier removal objectives when the final PIGGAREP project evaluation is undertaken.

6. RECOMMENDATIONS

The PIGGAREP project is two and a half years into its planned five year operational phase (i.e. has used 50% of its planned time duration) and yet its expenditure is only around 20% of its total budget. PIGGAREP is supporting a great many individually worthy RE activities, but there is little evidence apparent so far of the systematic and strategic barrier removal approach or focus on the commercial delivery of PURE applications that was the stated basis of its GEF funding support. The delivery of RE projects in PICs still seems to be fundamentally driven by donor processes, the true cost of energy supply is still not apparently being consistently reported or becoming widely known, and the real lessons still do not seem to have been learned from the many previous (often unsuccessful) RE demonstrations and projects undertaken to date in PICs. If PIGGAREP operations continue as they have been so far, then the overarching GEF objectives of PIGGAREP seem unlikely to be achieved. A number of recommendations are therefore made as follows: -

6.1 Initiate Strategic Barrier Removal Approach

The PIGGAREP project is clearly doing an excellent job in supporting the high value “soft” components of all available RE projects where the hard component funding is largely being met by other donors. The current PIGGAREP PMO seems to be a suitably lean and effective operation, and the current PIGGAREP project manager seems to be doing an excellent job managing the large number of tangible PIGGAREP activities across the 11 PIGGAREP PICs.

However, what does not seem to be underway yet is a suitable focus on initiating the pro-active strategic and sustainable barrier removal projects to commercial PURE uptake in PICs that was the overarching stated rationale for the GEF funding of PIGGAREP.

It is therefore recommended that PIGGAREP without delay recruit a suitably qualified and experienced international CTA (Chief Technical Advisor) to take the lead in implementing the necessary strategic barrier removal approach needed to complement the excellent existing PMO efforts in managing the large number of specific project elements across the 11 PIGGAREP PICs. The recommendation that a suitable CTA be recruited for the remainder of PIGGAREP’s implementation is a reflection that strategic barrier removal is a complementary skill and focus to that required for the detailed project management of specific PIGGAREP activities that is already well underway. It is also recommended that the new CTA take a lead in developing a new objectively based PIGGAREP Logframe that properly addresses the many logical

inconsistencies in the PIGGAREP design as detailed in this evaluation, as well as the many highly relevant STAP and GEF Council review comments in the approved PIGGAREP ProDoc that were ignored.

6.2 Start Documenting "Warts and All" Lessons Learned From Demos

The PIREP project made an excellent start in documenting (in a suitably sensitive way) many of the "warts and all" lessons of the then (to around the end of 2004) existing RE projects in PICs. An up-to-date, consolidated, comprehensive, and properly resourced, honest, but yet suitably forward looking appraisal of PIC RE project experience to date, lessons learned, and recommendations for future PIC RE projects would be an extremely valuable baseline document for donors looking to implement future RE projects in PICs, to private sector operators wanting to successfully implement commercial RE projects, and to policy makers, advisors, tariff setting agencies and the interested PIC public on what works and what does not, and how to maximise the likelihood of ongoing sustainable operation of RE projects in PICs. As long as everyone stays polite and keeps pretending that failed RE projects can somehow be updated without effectively starting over almost completely from scratch, then many of the same mistakes will continue to be made in future RE projects (as detailed in the PIREP summary reports as was then occurring up to 2004). This honest "warts and all" documentation of RE projects requires a different set of skills and focus to PIGGAREP project management, and hence ties in with the previous recommendation that this come under the responsibilities of the proposed new PIGGAREP international CTA.

6.3 Align Budget with PIGGAREP Objectives

One of the reasons apparent at the November 2009 PIGGAREP Multipartite review meeting for the low PIGGAREP funding expenditure rate was that funding was being done on a "fair" budget allocation window basis per PIC rather than by considering the individual proposed project's alignment with overall PIGGAREP barrier removal objectives. This appeared to be leading to a situation where there was little real scrutiny of how individual activities are supposed to lead to sustainable barrier removal activities, and where real critical peer review was modest by PIC participants as everyone wanted to be polite about everyone else's proposed activities so that their individual favorite projects would be funded as long as the activity added to the numerical output targets. Hence the links to overarching PIGGAREP barrier removal objectives did not appear to be uppermost in individual project support selection terms. It is therefore recommended that PIGGAREP project funding move to a competitive basis where the funding of individual project needs a strong justification of how the proposed project will contribute towards commercial, sustainable and productive RE uses - both in the individual PIC and across all PICs.

6.4 Funding Additional PIC National Human Resources

The low rate of project funding expenditure, the high number of projects being implemented across multiple donors, the frequently high energy office staff turnover, and the apparent tendency to use PIGGAREP to fund the "soft" components of nearly all applicable RE projects regardless of whether they really contribute towards PIGGAREP overarching barrier removal PURE objectives or not – this all points towards limited PIC energy office capacity as being a significant constraint on PIGGAREP's ultimate success. Some useful steps have been initiated by the PIGGAREP PMO to strengthen PIC human resources, and it is recommended that this PIC strengthening be continued as a high priority and urgent action.

6.5 Focus on Barrier Removal and Replications Rather Than Co-funding as Primary PIGGAREP Success Indicator

At present, the selection of projects for PIGGAREP soft funding support seems to be heavily influenced by the co-funding that such projects will bring to PIGGAREP. However, actual co-funding "achieved" (however this is defined) will be only one of many indicators of the ultimate success of GEF funded projects such as PIGGAREP. The ultimate rationale for a GEF grant funded SP-4 project such as PIGGAREP should be the sustainable removal of barriers to the uptake of PURE in PICs, and the best way to measure this is the number and post-project sustainability of PURE replications that occur as a result of PIGGAREP activities. It is therefore recommended that PIGGAREP focus more on its "commercial" PURE replication impact alongside the current focus on inputs (GEF expenditure) and output indicators such as studies completed/training undertaken etc, as well as the co-funding achieved.

6.6 Obtain a Project Extension without Delay

The PIGGAREP project is clearly running well behind realistic expenditure levels with only around 20% of its budget expended in the first half of its 5 year planned duration. It will take time to recruit, get on-board, and get a suitable international CTA fully up to speed to give the project its absolutely critical missing strategic barrier removal focus on commercial and PURE development and deployment in PICs – or to negotiate and agree with GEF a different focus if its is found that the stated commercial and PURE focus is not appropriate as the primary objective of PIGGAREP. Therefore a project extension of 12 – 24 months is indicated to be initiated alongside the new international CTA recruitment, so that the new CTA can take charge of developing a new strategic direction with a clear and realistic timeframe to get PIGGAREP back on track.

Annex A: List of Abbreviations and Acronyms

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BAU	Business As Usual
CDM	Clean Development Mechanism
EESLI	Energy Ecosystems for Sustainable Livelihoods Initiative (of IUCN)
EU	European Union
FAO	Food and Agriculture Organisation (of the UN)
FSM	Federated States of Micronesia
FSP	Full Scale Project (of GEF)
GEF	Global Environmental Facility
GHG	Greenhouse Gases (CO_2 and other emissions such as methane)
IUCN	International Union for the Conservation of Nature (an international organisation)
MPR	Multipartite Review
MSP	Medium Scale Project (of GEF)
NZAID	New Zealand Aid (previously NZODA)
O&M	Operation and Maintenance
PAS	Project Activity Summary (of PIGGAREP)
PIEPSAP	Pacific Islands Energy Policy and Strategic Action Planning (project)
PICs	Pacific Island Countries
PIGGAREP	Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project
PIREP	Pacific Islands Renewable Energy Project (GEF/UNDP/SPREP)
PNG	Papua New Guinea
PMO	Project Management Office
PREFACE	Pacific Rural/Renewable Energy France-Australia Common Endeavour (project)
PSC	Project Steering Committee (of PIGGAREP)
PURE	Productive Uses of Renewable Energy (the objective of GEF SP-4 projects)
PV	Photovoltaic
RESCO	Renewable Energy Service Company
RE	Renewable Energy
RFQ	Request for Quotation
RMI	Republic of the Marshall Islands
SHS	Solar Home Systems
SOPAC	South Pacific Applied Geoscience Commission (based in Fiji)
SPREP	Secretariat of the Pacific Regional Environmental Programme (Based in Samoa)
STAP	Scientific and Technical Advisory Panel (of GEF)
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme

Annex B – People Interviewed

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Annex C: Documents Reviewed

PIGGAREP

- 2007 - Combined Delivery Financial Report
- 2007 – Q3 Progress Report
- 2007 – Q4 Progress Report
- 2008 - Audit of Accounts
- 2008 - Combined Delivery Financial Report
- 2008 - MPR Summary Record - Final
- 2008 – Q1 Progress Report
- 2008 – Q2 Progress Report
- 2008 – Q3 Progress Report
- 2008 – Q4 Progress Report
- 2008 – Work Plan and Budget
- 2009 – Annual Performance Review (APR) – Project Implementation Record (PIR)
- 2009 - MPR Summary Record - Final
- 2009 – Q1 Financial Report
- 2009 – Q1 Progress Report
- 2009 – Q2 Financial Report
- 2009 – Q2 Progress Indicators
- 2009 – Q2 Progress Report
- 2009 – Q3 Financial Analysis
- 2009 – Q3 Financial Report
- 2009 – Q3 Progress Report
- 2009 – Q4 Financial Report
- 2009 – Q4 Progress Report
- 2009 - Joint EESLI - PIGGAREP MPR Meeting Agenda
- 2009 - Joint EESLI - PIGGAREP MPR Meeting Participants List
- 2009 - Project Planning Matrix (Logframe) – Retrofitted
- 2009 - Project Planning Matrix Indicators - Draft
- 2009 – Work Plan and Budget
- 2010 - Draft Work Plan
- 2010 - Project Planning Matrix – Revised
- 2010 - Work Plan and Budget
- LFA - Original
- Project Brief final draft – October 2004
- Request for Pipeline Entry Approval – 09 March 2005
- STAP Technical Review of Project Brief – 08 April 2005
- Project Brief Final – 22 April 2005
- Executive Summary – 26 April 2005
- RFQ for ProDoc Development – July 2005

- GEF CEO ProDoc Approval – 31 July 2006
- ProDoc with Signatures – 18 January 2007
- Project Brief Final - GEF Website - 08 February 2007
- Inception Phase Workplan and Budget – 31 July 2007
- Inception Workshop Report - Final – 31 January 2008
- PSC-2 PAS Summary
- PMO Self Review Final Draft
- PSC-4 Minutes
- PSC-6 Minutes

Wind in Pacific

- Cook Islands - Energy & Mangaia Wind - SOPAC 20031216
- Cook Islands - Mangaia Power System Data Analysis Feb 2005
- Cook Islands - Mangaia Power System Upgrade 2007 by SOPAC rev 07
- Cook Islands - Rarotonga 2MW Grid Connected Wind FS - under PIEPSAP - Mar 2006
- Cook Islands - Rarotonga One Year Wind Resource Assessment Report 20080831
- Market Review for Small & Medium Wind Turbines - PIEPSAP - Oct 2007 final
- Pacific-Danish Environment Paper
- Samoa- Upolu Wind Resource Assessment Final - GHD for UNDP - Mar 2009

PIREP

- Cook Islands National Report Volume 2
- Demonstration projects to Showcase the Business Angle of RE Service Delivery in the PICs
- Fiji National Report Volume 4
- Financing Mechanisms for RE in the Pacific Islands
- FSM National Report Volume 3
- Kiribati National Report Volume 5
- Marshall Islands National Report Volume 6
- Nauru National Report Volume 7
- Niue National Report Volume 8
- Palau National Report Volume 9
- PNG National Report Volume 10
- Regional Overview Report Volume 1
- RE Technology Support Programme for the Pacific Islands
- Samoa National Report Volume 11
- Solomon Islands National Report Volume 12
- Tokelau National Report Volume 13
- Tonga National Report Volume 14
- Tuvalu National Report Volume 15

- Vanuatu National Report Volume 16
- Output Evaluation of PIREP (Brief) for GEF STAP by Trexler Climate and Energy Service
- Final Evaluation Report of PIREP by ASCENDIS
- TOC Diagram and Rating for PIREP

Background Documents

- GEF-FAO Workshop on Productive Uses of RE: Experience, Strategies, and Project Development - Summary Report - FAO, Rome, June 2002
- Energy and Poverty in the PICs - Challenges and Way Forward – UNDP Regional Center Bangkok, REP-PoR, 2007
- Energy and Poverty in the PICs - Challenges and Way Forward – REM Meeting Session 5.0 – Tonga – Thomas Lynge Jensen - April 2009
- Evaluation of the Role and Contribution of UNDP in Energy and Environment – UNDP Evaluation Office - August 2008
- PIEPSAP End of Project Report: Concept, Results, Lessons Learnt, and Outlook, August 2008
- Review of Namdrik Atoll Solar Project, RMI – Final Report – Empower Consultants Ltd, October 2005
- Review of the PREFACE Project – Executive Summary – Wade, Lambert and Ferguson – September 2009
- UNDP MDG Carbon Facility – Towards CDM in the Pacific - Meeting Paper Session 4.0 – REM (Regional Energy Officials Meeting) - Tonga - April 2009

Annex D: Terms of Reference for PIGGAREP Mid-term Evaluation

1. 1. Introduction

1.1 The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project

The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) is a joint initiative by 11 Pacific Island Countries (PICs), the Secretariat of the Pacific Regional Environment Programme (SPREP), the United Nations Development programme (UNDP) and the Global Environment Facility (GEF). The global environment and development goal of PIGGAREP is the reduction of the growth rate of greenhouse gas (GHG) emission from fossil fuel use in the PICs through the removal of the barriers to the widespread and cost effective use of feasible renewable energy technologies. The specific objective of the project is the promotion of the productive use of renewable energy to reduce GHG emission by removing the major barriers to the widespread and cost-effective use of commercially viable renewable energy technologies. PIGGAREP consists of various activities whose outputs will contribute to the removal of the major barriers to the widespread utilization of renewable energy technologies. The project is expected to bring about in the PICs: i) increased number of successful commercial renewable energy applications; ii) expanded market for renewable energy applications; iii) enhanced institutional capacity to design, implement and monitor renewable energy projects; iv) availability and accessibility of financing to existing and new renewable energy projects; v) strengthened legal and regulatory structures in the energy and environmental sectors; and, vi) increased awareness and knowledge on renewable energy and renewable energy technologies among key stakeholders.

1.2 UNDP/GEF The Monitoring and Evaluation (M&E) policy

The UNDP/GEF Monitoring and Evaluation (M&E) policy at the project level in UNDP/GEF has four objectives: i) to monitor and evaluate results and impacts; ii) to provide a basis for decision making on necessary amendments and improvements; iii) to promote accountability for resource use; and iv) to document, provide feedback on, and disseminate lessons learned. A mix of tools is used to ensure effective project M&E. These might be applied continuously throughout the lifetime of the project – e.g. periodic monitoring of indicators; or specific time-bound exercises such as mid-term evaluations, audit reports and independent evaluations.

In accordance with UNDP/GEF M&E policies and procedures, all projects with long implementation periods should conduct mid-term evaluations. In addition to providing an independent in-depth review of implementation progress, this type of evaluation is responsive to GEF Council decisions on transparency and better access of information during implementation. Mid-term evaluations are intended to identify potential project design problems, assess progress towards the achievement of objectives, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP/GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project. It is expected to serve as a means of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. The mid-term evaluation provides the opportunity to assess early signs of project success or failure and prompt necessary adjustments. PIGGAREP is a five year project, which began implementation in July 2007 and is planned to be operationally closed by July 2012. As the project now is approaching two and a half years of

implementation as per standard UNDP/GEF requirements a mid-term evaluation of this GEF Full Size Project (FSP) has to be undertaken.

2. Objective

The objective of the assignment is to undertake the mid-term evaluation of the PIGGAREP as per UNDP/GEF requirements and procedures.

3. Outputs

a) Inception Note;

b) De-briefing Note; and,

c) Mid-term Evaluation Report.

4. Activities

The scope of work for the consultancy will include, but not necessarily be limited to, the following activities:

REGARDING INCEPTION NOTE:

a) Study and review relevant background materials; and,

b) Write-up an inception note including: a) the successful Contractor's understanding of the consultancy and associated tasks; b) the proposed detailed technical approach; c) the proposed detailed work plan/timeline; d) identification of issues crucial to the viability of the consultancy; and e) detailed comments on this TOR including anticipated risks and problem areas. Subsequently, if required and approved by UNDP Samoa Multi-county Office (MCO) and UNDP/GEF, the TOR can be adjusted in response to the Inception Note.

REGARDING DE-BRIEFING NOTE:

a) Prepare debriefing notes, based on preliminary findings, conclusions and recommendations from the mission to Fiji and Samoa; and,

b) Discuss preliminary draft debriefing notes with appropriate personnel from SPREP, UNDP Samoa MCO and UNDP/GEF. Prepare minutes of the meetings and submit for comment and approval of the participating parties.

REGARDING MID-TERM EVALUATION REPORT:

In general:

a) Undertake a systematic and impartial assessment of PIGGAREP;

b) Determine the relevance, impact, effectiveness, efficiency and sustainability of the interventions and contributions of the involved partners;

c) Assess the entire UNDP/GEF-funded project and its components as well as the co-financed components of the project;

d) Assess the project implementation taking into account the status of the project activities and outputs and the resource disbursements made up to end of October 2009;

e) Assess capacity at the country level including options to meet the capacity needs and requirements of the countries to deliver on their PIGGAREP results;

f) Undertake the mid-term evaluation at two levels: i) component level; and ii) project level;

g) Consult findings and recommendations available in relevant evaluation reports (which will be made available to the Successful Contractor) including the following: i) STAP Technical Review – PIGGAREP Project Brief, 7 April 2005, prepared by Trexler Climate + Energy Services; ii) Output Evaluation for the Pacific Island Renewable Energy Project (PIREP), 7 April 2005, prepared by Trexler Climate + Energy Services; iii) Final Evaluation of the UNDP/GEF/SPREP Project RAS/02/G35, Prepared by Advisory Services on Climate, ENergy and Development ISsues (ASCENDIS), Final Version, October 2006; iv) Evaluation of the Role and Contribution of UNDP in Environment and Energy, UNDP, August 2008; and v) GEF Evaluation Office Summary on the Final Evaluation of the UNDP/GEF/SPREP Project RAS/02/G35, August 2009;

With regard to component level:

h) Assess whether there is effective relationship and communication between/among components so that data, information, lessons learned, best practices and outputs are shared efficiently, including cross-cutting issues;

i) Assess whether the performance measurement indicators and targets used in the project monitoring system are specific, measurable, achievable, reasonable and time-bounded to achieve desired project outcomes;

j) Assess whether the use of consultants has been successful in achieving component outputs;

k) Assess appropriateness and relevance of: i) work plans (project life, yearly and quarterly); ii) compliance with work and financial plans vis-à-vis actual budget allocations; iii) timeliness of disbursements, procurement, coordination among project team members and committees; and iv) UNDP country office support;

l) Highlight any issue or factor that has impeded or accelerated the implementation of the project or any of its components, including actions taken and resolutions made;

With regard to project level:

m) Assess project performance in terms of progress towards achievement of results (internal and within project's control) including to what extent: i) the project is making satisfactory progress in achieving project outputs vis-à-vis the targets and related delivery of inputs and activities; ii) the direct partners and project consultants are able to provide necessary inputs or achieve results; iii) given the level of achievement of outputs and related inputs and activities to date the project is likely to achieve its Immediate Purpose and Development Objectives; and iv) there are critical issues relating to achievement of project results that have been pending and need immediate attention in the remaining period of implementation;

n) Assess factors affecting successful implementation and achievement of results (beyond the Project's immediate control or project-design factors that influence outcomes and results) including to what extent: i) project implementation and achievement of results is proceeding well and according to plan and if not what are the outstanding issues, obstacles, bottlenecks, etc. that are affecting the successful implementation and achievement of project results; ii) the broader policy environment remain conducive to achieving expected project results, including existing and planned legislations, rules, regulations, policy guidelines and government priorities; iii) the project logical framework and design still are relevant in the light of the project experience to date; iv) critical assumptions/risks in project design are still relevant under present circumstances and based hereon validate these assumptions as presently viewed by the project management and in addition determine whether there are new assumptions/risks that should be raised; v) the project is well-placed and integrated within the national government development strategies, such as National Energy Policy Frameworks, community development, poverty reduction, etc., and related national, regional and global development programs to which the project implementation should align; vi) the PIGGAREP's purpose and objectives remain valid and relevant and if not what items or components in the project design needs to be reviewed and updated; and vii) the institutional and implementation arrangements still are relevant and helpful in the achievement of the Project's objectives and if not what are the institutional concerns that hinder the Project's implementation and progress;

o) Assess project management (adaptive management framework) including: i) if the project management arrangements are adequate and appropriate; ii) how effectively the project is managed at all levels including if such it results-based and innovative; iii) if the project management systems, including progress reporting, administrative and financial systems and monitoring and evaluation system, operate as effective management tools, aid in effective implementation and provide sufficient basis for evaluating performance and decision making; iv) if technical assistance and support from project partners and stakeholders are appropriate, adequate and timely; v) whether the risks originally identified in the project document and, currently in the APR/PIRs, are the most critical and validate if the assessments and risk ratings placed are reasonable; vi) describe additional risks identified during the evaluation, if any, and suggest risk ratings and possible risk management strategies to be adopted; vii) assess the use of the project logical framework and work plans as management tools and in meeting with UNDP-GEF requirements in planning and reporting; viii) assess the use of electronic information and communication technologies in the implementation and management of the project; ix) on the financial management side, assess the cost effectiveness of the interventions and note any irregularities; and x) asses how the APR/PIR process have helped in monitoring and evaluating the project implementation and achievement of results;

p) Assess strategic partnerships (project positioning and leveraging) including: i) if project partners are strategically and optimally positioned and effectively leveraged to achieve maximum effect of the renewable energy program objectives for the participating PICs; ii) how project partners, stakeholders and co-financing institutions are involved in PIGGAREP's adaptive management framework; iii) identify opportunities for stronger collaboration and substantive partnerships to enhance the project's achievement of results and outcomes; and; iv) to what extend the project information and progress of activities are disseminated to project partners and stakeholders and recommend possible ways to improve the collaboration and partnership mechanisms.

5. Methodology

With the aim of having an objective and independent evaluation, the Successful Contractor is expected to conduct the project evaluation according to international criteria and professional norms and standards as adopted by the UN Evaluation Group (UNEG). The *Standards for Evaluation in the UN System* is available here: http://portal.unesco.org/ci/en/files/22383/11502729611UNEG_Standards_for_Evaluation_Annex_III.pdf/UNEG%2BStandards%2Bfor%2BEvaluation_Annex%2BIII.pdf

Furthermore it is expected that in general the methodology that is to be applied will include the following tools as required:

a) Documentation review/desk study;

b) Mission;

c) Interviews; and

d) Questionnaires.

The proposed overall technical approach including specific mix of methodological tools to be applied as part of the evaluation is to be included as part of the Quotation and the detailed technical approach will be prepared by the successful Contractor and included as part of the draft Inception Note. Subsequently these will be discussed and agreed to between the successful Contractor and UNDP.

Ad a) Documentation review/desk study

Review of relevant project documents and reports will be based on the following sources of information: review of documents related to the Project and structured interviews with knowledgeable parties. Through such the Successful Contactor is expected to become well versed as to the project objectives, historical developments, institutional and management mechanisms, activities and status of accomplishments.

Prior to the mission to the Pacific, the Successful Contractor will receive relevant documentation including: i) PIGGAREP Project Document and Project Brief; ii) Inception Report; iii) Annual work plans including budgets; iv) Annual Project Report (APR)/Project Implementation Review (API/PIR) for 2007/2008 and 2008/2009; v) Quarterly Progress Reports (QPRs) and quarterly Financial Reports (FRs)

for the period July 2007 to September 2009; vi) audit for 2007 and 2008; and v) TORs for consultants assignments and copy of key deliverables:

Ad b) Mission

The consultancy will include one mission to the Pacific, which is to coincide with the 2009 PIGGAREP Multipartite Review (MPR) Meeting that is planed to take place 23-27 November 2009 in Nadi, Fiji. The MPR meeting will provide the Successful Contractor an opportunity to meet and have bilateral discussions with representatives from all the 11 participating PICs.

Thus preliminary the mission to the Pacific will include visits to Fiji as well as Samoa - where SPREP and UNDP Samoa MCO are based - as part of the same round-trip. Face-to-face feed-back from relevant national level project stakeholders such as government departments, power utilities, etc from these two countries are to be organised.

6. Reporting Requirements

6.1. Deliverables

Deliverable	Deadline
1. Draft Inception Report	To be proposed by the bidder and reflected in the preliminary work plan that is to be submitted as part of the Quotation. Final date for this deliverable will be determined through negotiation between the successful bidder and UNDP MCO Samoa and reflected in the final working plan
2. Final Inception Report	See above
3. Draft Debriefing Note	See above
4. Final Debriefing Note	See above
5. Draft Mid-term Evaluation Report	See above
6. Final Mid-tern Evaluation Report	See above

Concerning reporting requirements it should be noted that:

a) All draft documents should be in Microsoft Word 2003 and all final documents in Adobe Acrobat format;
b) All documents must have no restriction in access; and,
c) The consultancy is planned to be undertaken in the period November to December 2009 and as such the consultancy including all deliverables is to be finalized by end of December 2009 the very latest.

6.2 Structure of Mid-term Evaluation Report

The outline of the Mid-term Evaluation report could be structured along the following lines:

a) Executive summary;
b) Introduction;
c) The project and its development context;
d) Findings and conclusions including project implementation achievements challenges, and difficulties to date

e) Lessons learned;
f) Recommendations for modifications and the future course of action;
g) Annexes including: i) TOR; ii) mission itinerary; iii) list of persons interviewed; iv) list of documents reviewed; v) questionnaire used and summary of results; vi) Co-financing and Leveraged Resources (based on table that will be provided to the Successful Contractor) and vi) comments by stakeholders (only in case of discrepancies with evaluation findings and conclusions. If there are discrepancies between the impressions and findings of the Successful Contractor and the key project partners these must be explained in an annex attached to the final report).

Concerning length of the report normally it should not exceed 50 pages in total.

7. Inputs

Entity	Input
UNDP Samoa MCO	a) Organize the consultancy including being contractual UNDP/GEF entity; b) liaise with the successful Contractor to set up stakeholder interviews; c) Assist with logistics concerning mission including meetings; d) Ensure the timely provision of payments as per contract with successful Contractor; e) Provide relevant background information and documentation to the successful Contractor; f) Provide comments on all draft deliverables; and g) As appropriate participate in meetings
UNDP/GEF	a) Provide guidance on relevant UNDP/GEF procedures, policies and practices; b) Provide relevant background information including copies of relevant documentary sources; c) Provide input on draft documents; and d) As appropriate participate in meetings
SPREP	a) Provide relevant background information and documentation to the successful Contractor; b) Assist with logistics concerning mission including meetings; c) Comment on selected draft deliverables; and d) As appropriate participate in meetings
PICs	Primary source of key inputs on the progress, issues, results, impacts, etc of the PIGGAREP at the national level