



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

### **DEBRIEFING NOTE**

### **MID TERM EVALUATION**

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## **BACKGROUND TO PIGGAREP**

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<sup>1</sup> 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

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<sup>1</sup> It should be noted that the term “productive use of renewable energy” (PURE) did not figure in the statement of the objectives of PIGGAREP in its April 2005 Project Brief and is not strongly mentioned in the rationale for PIGGAREP in the discussion of the purposes of the proposed GEF funding for PIGGAREP. It is not clear if the PURE concept is just a way of saying that RE will be used for useful to human (productive and/or income generating) uses such as coconut oil or local handicrafts manufacturing or for making ice for sale rather for non-income generating social uses such as lighting, radio/TV, ventilation fan, domestic refrigeration etc uses .

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<sup>2</sup>.

PIGGAREP was designed from 2003 to mid-2005 under the \$760,000 medium scale UNDP-GEF Pacific Islands Renewable Energy Project (PIREP), for which the key output was a GEF project brief for the Full Size Project (FSP) that became PIGGAREP. As such, PIGGAREP is the result of an extensive research, review and consultation exercise under PIREP.

PIGGAREP then spent from mid-2005 to the end of 2007 in GEF, UNDP and start up activities. The PIGGAREP project brief was submitted to the Global Environment Facility (GEF) Council Meeting on 3-8 June 2005 for consideration. The project then went through a GEF STAP (Scientific and Technical Advisory Panel) review that provided many comments and suggestions, the project brief was then updated to reflect the STAP review comments, the project brief was transformed into a UNDP format Project Document (ProDoc), GEF and UNDP internal approval and budget processes were undertaken, and the co-financing contributions from other project partners was confirmed. The project was then approved by GEF.

PIGGAREP then formally commenced and the Project Manager (PM) started work on the project in July 2007. A small regional Project Management Office (PMO) was established at SPREP in Apia, Samoa, whose main task is to facilitate primarily national level activities coordinated by country teams in each of the eleven PICs involved in PIGGAREP. The PMO has a core staff comprising of a full time Project Manager (PM), a Project Accountant / Financial Officer which is co-shared with SPREP's Finance division and a Project Assistant /Secretary which is co-shared with the other divisions and projects in the Pacific Futures' Programme. The project's Regional Inception Workshop was held in November 2007, where a work plan for specific activities to be undertaken in 2008 with a budget of US\$1.12 million was considered, and endorsed. The endorsed work plan contained country-specific priority activities for each PIC, with a combined total of 93 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).

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 Multipartite Review Meetings held in Nadi, Fiji. This note is a record of the key results of the interviews undertaken during the Fiji mission and some subsequent review of the extensive project documentation of PIGGAREP and PIREP. However, this is a working document and its understanding of PIGGAREP (and PIREP) design intentions, the work

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<sup>2</sup> As per the 31 July 2006 PIGGAREP Project Document that has received GEF CEO endorsement and has been signed by the various project partners

undertaken to date, the early indications of project results, and recommendation as to future corrective actions will evolve as more in depth analysis is undertaken towards the draft final report formulation.

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

### **List of Abbreviations and Acronyms**

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BAU	Business As Usual
CDM	Clean Development Mechanism
EU	European Union
FSM	Federated States of Micronesia
FSP	Full Scale Project (of GEF)
GEF	Global Environmental Facility
GHG	Greenhouse Gases (CO <sub>2</sub> and other emissions such as methane)
NZAID	New Zealand Aid (previously NZODA)
O&M	Operation and Maintenance
PICs	Pacific Island Countries
PIREP	Pacific Islands Renewable Energy Project (GEF/UNDP/SPREP)
PNG	Papua New Guinea
PURE	Productive Uses of Renewable Energy
PV	Photovoltaic
RESCO	Renewable Energy Service Company
RE	Renewable Energy
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)
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme

## **THE PIGGAREP DESIGN**

As highlighted in the STAP review of the PIGGAREP Project Brief<sup>3</sup>, the PIGGAREP design had very ambitious barrier removal and greenhouse gas reduction objectives (370,000 tons of CO<sub>2</sub>

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<sup>3</sup> and also observed by the mid-term reviewer in his work to date

emissions from PICs reduced by the end of the project and about 2 million tons by the end of 2015) for: -

- the scale of incremental funding (\$5.225 million) that was being provided by GEF,
- the scale and depth of the barriers that were expected to be found for renewable energy deployment in the eleven small, dispersed and low income PIGGAREP PICs and their many constituent individual islands and even more communities,
- a project that has a focus on only funding barrier removal ‘soft’ components (a GEF requirement) in relation to the scale of funding provided as grants and soft loans by other donors and their frequently different objectives to PIGGAREP.

The PIGGAREP project also had a very high degree of anticipated leverage/co-funding (\$27.983 million) of other relevant activities that were to be subsumed into the proposed PIGGAREP barrier removal activities. However, such a high level of co-funding is a requirement of GEF funding - a minimum four to one GEF/other co-funding ratio was a GEF requirement, and thus co-funding achieved should not be a primary criteria to judge the realised PIGGAREP project’s real impacts in overall project evaluation terms.. In addition, the PIGGAREP design had a very ambitious 2 million tons of CO<sub>2</sub>e GHG reductions by (30% of baseline BAU GHG emissions in 2015) target. Again, it is generally more important in overall evaluation terms to link and record PIGGAREP activities to impacts (including but not limited to replications achieved or influenced) rather than to excessively focus on precise causality between specific PIGGAREP activities and hard 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.

Reviewing the PIGGAREP project brief, the STAP review comments, and the responses from the project designers’ responses, the review impressions to date are that many of the STAP comments seemed to have considerable merit. It has not yet been possible to fully investigate the extent to which the STAP review comments have been reflected in the subsequent updated Project Brief and Project Document. It is also not yet clear if the many very pertinent analyses and conclusions of the deep seated nature of the barriers facing increased RE uptake in PICs found in some of the PIREP summary documents are fully reflected in the PIGGAREP design. This reflection of the STAP reviewer comments and PIREP analyses, their relevance to the project as implemented to date, and any changes in the situation on the ground that the project encountered as it was implemented some two and half years after its design was mostly completed under PIREP (at PIGGAREP’s tangible inception), will be examined in greater detail during the main analytical phase of this mid term evaluation.

## **PIGGAREP INITIAL RESULTS**

From the review of PIGGAREP existing and proposed activities, from an observation of the issues discussed at the 23 – 27 November 2009 meeting in Nadi in Fiji, and from the interviews conducted with PIGGAREP participants and stakeholders, preliminary PIGGAREP mid term evaluation results are as follows: -

- PIGGAREP is clearly implementing tangible activities that are useful contributions to the increased uptake of RE in PICs as compared with a BAU baseline scenario.
- PIGGAREP funded “soft” activities to date seem to be effectively co-coordinated with other funding sources’ planning and provision of “hard” RE project activities.
- PIGGAREP funded activities to date seem to be a very effective complement to the donor and government RE funding focus that is primarily on the provision of “hard” RE project activities and especially the too common donor funded “commission, hand over, and then forget” RE project approach in PICs.
- PIGGAREP specific activity planning seems to be soundly based and subject to a suitable level of critical peer review.
- PIGGAREP activities to date seem to be highly relevant to PIC energy needs.
- PIGGAREP support of soft components (alongside the focus of other donors on equipment supply) seems to be an efficient use of GEF funds.
- Specific PIGGAREP activities appear to be generally efficiently implemented.
- PIGGAREP activities seem likely to have a high impact for the funds deployed. However, the high leverage (stemming from the PIGGAREP design reflecting GEF funding rules) sought means that it appears that there will be challenges to properly attribute PIGGAREP’s impact as distinct from the impact of the donor funding (that generally covers to major part of RE project costs).

## **PIGGAREP INITIAL REVIEW ISSUES**

In PIGGAREP’s start up phase in the latter part of calendar 2007, only \$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 project focused funding budget of \$893,254. If PMO budgets are included, the overall PIGGAREP 2008 budget totaled US\$1,119,700. In the event,

\$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.

To the end of the 3<sup>rd</sup> Quarter in 2009, only \$548,546 had been spent on PIC projects and PMO costs in the calendar 2009 financial year by PIGGAREP. This represents an expenditure rate of 60% for the first three quarters of calendar 2009. The shortfall in project expenditure seems to be concentrated in a few PICs, notably Fiji, Niue, and PNG - with reduced expenditure levels also being apparent for Kiribati and Tonga.

Even if one counts PIGGAREP as effectively starting active operations from 01 January 2008, clearly, at the current rate of expenditure or even with a realistic continuation of the trend of increasing expenditure, 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 outputs (while necessary) is not sufficient to really evaluate PIGGAREP's impact. Such tracking of inputs and outputs needs to be complemented by clear links to PIGGAREP's impacts to usefully gain a balanced view of PIGGAREP's results. The impact of PIGGAREP's inputs and outputs should be more than a list of activities funded and/or reports produced. Critically then, one needs to examine how inputs (GEF funding) leads to outputs (studies and reports etc produced) and then the inputs and outputs need to be shown to logically lead to the desired impacts, in particular the removal of barriers to private sector provision of productive uses of RE. Noting that PIGGAREP is a project that has now 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 to the removal of the identified key barriers. For example, a major barrier to private sector provision of RE in PICs is the near universal under-recovery of true electricity supply costs in tariffs. One means to address this barrier would be a major pro-active PIGGAREP effort to consolidate the many tariff studies into PIC specific and also PIC wide information on the true cost of electricity supply (including donor hardware support, government subsidies, under-funded maintenance, breakdowns, and less than 24/7 supply. This would then level the playing field for private sector delivery of RE to either be paid or be sold for a price competitive with true existing supply costs, or receive similar budgetary or similar support to existing fossil fuel of public provided electricity supply.

This then suggests that a fundamental review of the operating modalities of PIGGAREP is required. Some relevant issues that seem apparent from the PIGGAREP literature reviewed to date, and interviews and observations during the Fiji 23 – 27 November 2009 meetings include:

- The PIGGAREP PMO seems to be 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 seems to be working hard to get them underway as soon as possible. The PIGGAREP PMO could possibly use more resources, but a lack of PMO specific project focused resources does not seem to be the root cause of the low rate of project expenditure to date, nor for the other issues identified to date.

- The PIGGAREP design assumed that PIGGAREP would be 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 barrier removal approach not yet seem to be the consistent focus of PIGGAREP, rather PIGGAREP is providing soft support to many apparently worthy RE projects, but does not seem to be providing this soft support in an explicit barrier removal in PICs context.
- In practice: the PIC energy offices that are PIGGAREP’s counterparts seem to be generally overstretched in staff terms; PIC and PIGGAREP RE (or not) energy investments seem to be driven mainly by the agenda of the donors who are providing the grant or soft loan “hard” investment funding for many of the PIC energy projects; and there are many (probably actually too many) RE demonstration projects already in the Pacific where lessons from failures to date are not generally known to new donors and to consultants, and not enough replication of RE projects building on what is known to work, and avoiding what is known not to work, in the Pacific already.
- PIGGAREP support seems to still be far from setting the strategic RE-private sector – productive uses – strategic barrier removal agenda in the relevant PICs, as envisaged in the endorsed PIGGAREP project design.
- PIGGAREP activities to date seem to be very focused (and understandably to get tangible activities underway in a short period of time since its tangible inception) of working alongside existing and pipeline RE projects. However, such projects are primarily donor driven, and PIGGAREP does not yet seem to be very focused on removing the systemic barriers to RE projects being initiated, delivered and run by the private sector as well as being focused on delivering productive uses of energy in PICs.
- There seems to be 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 seems to be the cause for some concern amongst some PIC participants and project partners that this is diverting attention from the real PIGGAREP added value of the barrier removal activities in promoting RE in the Pacific that should be PIGGAREP’s focus.
- The focus on PIGGAREP not directly funding project hardware components seems to be a considerable constraint on its effectiveness and utility for some PICs (but not for others). However, this is a core PIGGAREP design issue, and hence it is unclear if this can be addressed except by strengthened project communication with key stakeholders.

- The funding reimbursement model is being claimed by PIC representatives to be causing delays for some countries 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 p20 of the inception workshop report<sup>4</sup> 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.
- There seemed to be 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 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 funds either when compared to other donor funding mechanisms. Therefore, any 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 seems to be an important issue in practice for some PICs.
- A major constraint on PIGGAREP's effectiveness seems to be lack of PIC energy office human capacity and experience in many cases. There also seems to be a major burden on PIC energy office staff to provide the coordination, supply necessary reports and attend meetings (often involving travel between the highly dispersed PICs with often infrequent 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. It seems that PIGGAREP may need to start funding energy agency additional human resources to overcome this PIC human capacity constraint.
- Increased flexibility in funding allocation between PIGGAREP PICs may be needed to increase the funds disbursement rate<sup>5</sup>. 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 (this is a common issue with multiple country projects). This would seem to be 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 equivalent basic military tenet is "reinforce success and abandon failure").

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<sup>4</sup> [http://www.sprep.org/climate\\_change/documents/FinalInceptionReport.pdf](http://www.sprep.org/climate_change/documents/FinalInceptionReport.pdf)

<sup>5</sup> 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."