



**GEF-6 GEF SECRETARIAT REVIEW FOR FULL-SIZED/MEDIUM-SIZED PROJECTS  
THE GEF/LDCF/SCCF TRUST FUND**

GEF ID:	9273		
Country/Region:	Papua New Guinea		
Project Title:	Facilitating Renewable Energy & Energy Efficiency Applications for Greenhouse Gas Emission Reduction (FREAGER)		
GEF Agency:	UNDP	GEF Agency Project ID:	5569 (UNDP)
Type of Trust Fund:	GEF Trust Fund	GEF Focal Area (s):	Climate Change
GEF-6 Focal Area/ LDCF/SCCF Objective (s):	CCM-1 Program 2;		
Anticipated Financing PPG:	\$0	Project Grant:	\$2,840,640
Co-financing:	\$17,300,000	Total Project Cost:	\$20,140,640
PIF Approval:		Council Approval/Expected:	October 01, 2015
CEO Endorsement/Approval		Expected Project Start Date:	
Program Manager:	Ogawa Masako	Agency Contact Person:	

PIF Review			
Review Criteria	Questions	Secretariat Comment	Agency Response
<b>Project Consistency</b>	1. Is the project aligned with the relevant GEF strategic objectives and results framework? <sup>1</sup>	MO August 6, 2015 Please change to CCM Object 1, Program 1, because most of the project cost will be used for policy and technology application, and component 3 is not eligible under Program 2.  MO August 13 2015 Comment cleared.	The PIF has been revised to reflect project alignment with climate change program strategy CC1: Program 1 since the proposed project covers development, demonstration and financing of low carbon (LC) technologies and mitigation options, including policies to support these.
	2. Is the project consistent with the	MO August 6, 2015	

<sup>1</sup> For BD projects: has the project explicitly articulated which Aichi Target(s) the project will help achieve and are SMART indicators identified, that will be used to track the project's contribution toward achieving the Aichi Target(s)?

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Review Criteria	Questions	Secretariat Comment	Agency Response
	recipient country's national strategies and plans or reports and assessments under relevant conventions?	The project is in line with the second National Communication to the UNFCCC.	
<b>Project Design</b>	3. Does the PIF sufficiently indicate the drivers <sup>2</sup> of global environmental degradation, issues of sustainability, market transformation, scaling, and innovation?	<p>MO August 6, 2015</p> <p>The page 7 explains that there is policy barrier because there is no national energy policy, but on page 17, this project is in line with draft National Energy Plan. Please provide information of National Energy Plan, and clarify what barrier will be remained even this plan is finalized and implemented.</p> <p>Also please clarify what NEP stands for, National Energy Plan or National Energy Policy.</p> <p>Please include financial sectors as stakeholders, otherwise the financial scheme will not be properly developed and implemented.</p> <p>It proposes community based application of energy efficiency (EE) and renewable energy (RE) as innovation. Please describe this application in the main document, not in the footnote (e.g. no.14 on page 11).</p>	<p>Correction has been made in regards to what is actually being referred to in the PIF. It should be National Energy Policy (NEP) not national energy plan that should be stated in Part II, Sec. 6. There is a proposal to develop a national energy plan based on the NEP. There is currently a draft NEP (there are actually two versions, one with Department of Petroleum &amp; Energy (DPE) and the other with the Department of Public Enterprise that oversees state owned public enterprises such as PPL) and no official national energy plan. What is available is the PNG Mid term Development Plan 2011 2015 (MTDP) that consists, among others, a section on energy development. In that section of the MTDP it is stated that the general aim for energy development is for "all households to have access to a reliable and affordable energy supply, and sufficient power is generated and distributed to meet future energy requirements and demands." The target is to achieve 70% electrification by 2030, and to achieve this, the focus of the country is on expanding natural gas, hydro, and other RE based power generation capacity.</p>

<sup>2</sup> Need not apply to LDCF/SCCF projects.

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		<p>MO August 13 2015 Comments cleared.</p>	<p>To come up with the national energy plan, the NEP has to be first clearly delineated and officially established and enforced. There is work that is ongoing on the drafting of the NEP. The proposed GEF project intends to build on such work to supplement and augment it and where appropriate enhance it. Based on information from the DPE, the project proponents think that the current work on developing the NEP can use additional support from the GEF to ensure that appropriate energy policies are formulated, recommended, approved and effectively enforced. While the current approach focuses on energy generation infrastructures, the proposed GEF project will address the policy issues that would make these energy generation assets support the achievement of broad improvement in living standards in the country. Among those that need to be enhanced are on: (a) energy regulatory framework; (b) energy development and utilization policies; and, (c) enforcement of proposed and existing energy policies and strategies. The remaining issues concerning the lack of capacity for the application of LC development procedures, standards, policies and implementing rules and regulations (IRRs) on the promotion and incorporation of EE &amp; RE applications in</p>

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			<p>city/town, province and district development planning and implementation, still have to be addressed. Furthermore, the related institutional issues on the effective implementation of the energy policies, and LC development standards, policies, and IRRs, including institutional mechanisms that integrate LC development with the socio economic, climate change and disaster management objectives of the country, will also have to be addressed.</p> <p>NEP stands for National Energy Policy. There is at the moment no national energy plan. The intention is to develop the national energy plan based on the NEP.</p> <p>Yes the financial sector is a key stakeholder of the project and will be involved in the design, establishment and operationalization of feasible financing models and schemes to facilitate financing of LC (e.g., EE and RE) development projects. The table in Part II, Sec. 2 has been revised to include the banks/financial institutions and their expected role in the preparation/design of this proposed project.</p> <p>The previous and current electrification projects in the country are mainly infrastructure related and focus more on</p>

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			<p>big capacity power generation projects that are either RE, or non RE based. Obviously, to meet the target of 70% electrification by 2030, more power generation capacity has to be installed. Also, to achieve the target of carbon neutrality in 2050, the utilization of available feasible renewable energy resources for power generation, and the application of feasible RE and EE technologies in the energy end use sectors are necessary. Past initiatives on the application of RE technologies are mainly on big size hydro, geothermal and biomass power generation applications funded by the GOPNG, donors and foreign investors. Because of the lack of investments in the maintenance of the infrastructures installed and in performing operational maintenance on existing power generation, transmission and distribution assets, the country (particularly the countryside) experience unreliable electricity supply and ultimately higher social and economic cost. On EE, previous initiatives have been on capacity building. But still up until now, the general levels of EE awareness and knowledge/skills on EE technology/technique applications among the energy end users are low.</p> <p>This project will help facilitate, contribute to, lay the groundwork, and pave the way</p>

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			<p>for, the achievement of the country's 2030 electrification target, and the 2050 carbon neutrality target, through more effective and tangible applications of RE based energy systems (for power and non power purposes) and EE technology applications in the end use sectors both in urban and rural areas of the country. In many districts (in a number provinces), there are available RE resources that can be tapped to reduce the utilization of existing diesel power generation systems. This is not currently being done mainly because of the relatively small system size, compared the typical power generation capacities that the PNG Power Ltd. (PPL) is interested in developing and operating. Many rural communities in the country are not electrified (electrification in PNG is currently below 20%) but there are available RE resources in many of these localities. Enabling the cost effective use of such resources utilizing financing from the government and from the private sector (e.g., public private partnerships, private sector investments, local government outsourcing, etc.) is among the strategies that the project will employ, and this is something novel in PNG. Another novel idea is the implementation of tangible actions that are geared towards optimization of the use of energy (i.e., energy efficiency) in the energy end use sectors. This will not only reduce GHG</p>

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			<p>emissions, but also contribute to the reduction of electricity demand and in so doing contribute to the reduction of the magnitude of overall power generation capacity (RE and non RE based) needed to meet current and future electricity demands.</p> <p>To further facilitate these innovative ideas, the following demonstrations of LC policy and technology applications will be considered for inclusion in the project: (1) Application of the integrated energy planning techniques for the benefit of the DPE; (2) Application of feasible community based RE energy systems for productive uses and household energy needs; (3) Application of EE technologies selected energy end use sectors such as public utilities, buildings, and in the transport sector; (4) Design, engineering and financing of feasible RE and EE technologies; and, (5) Piloting of specific policies and strategies for the application of RE and EE techniques, measures and practices.</p>
	4. Is the project designed with sound incremental reasoning?	<p>MO August 6, 2015 Please explain why this GEF fund is request in addition to on going World Bank project.</p> <p>MO August 13 2015 Comments cleared.</p>	<p>One of the components of the ongoing WB project is on the development of the NEP. The proposed project intends to build on such work to supplement and augment it and where appropriate enhance it so that the much needed energy policies are approved and effectively enforced. Based on the initial assessments made,</p>

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			<p>among those that need to be enhanced are on the following: (a) energy regulatory framework; (b) energy development and utilization policies; and, (c) enforcement of proposed and existing energy policies and strategies. The work that is currently being done on the development of the appropriate energy regulatory framework will be enhanced by addressing concerns regarding the needs for the application of LC development standards, policies and IRRs on the promotion and incorporation of EE &amp; RE applications in city/town, province and district development planning and implementation; and for easy to use guidance and reference documents on these subjects to district and provincial governments. The enhancements will also include the provision of supplementary information (e.g., policy researches, analyses and assessments) to the DPE on LC development and implementation mechanisms compatible to the PNG context. Considering the current activities of the ongoing energy policy development activities in the country, and building on these, the indicative incremental activities on energy policy making are the development of the supporting guidance, rules and regulations and legislations; and the piloting and evaluation of the implementation of specific policies. On the enforcement of the proposed and</p>



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			<p>existing energy policies, the indicative incremental activities are on the promotion of the proposed energy policies to get these approved and enforced, capacity building on the application and compliance, and tracking of the progress and impacts of energy policy implementation for purposes of potential future enhancements (if necessary). Additional incremental activities will be carried out focusing on the establishment and operationalization of the pertinent institutional framework for the implementation of LC development standards, policies, and IRRs, including institutional mechanisms that integrate LC development with the socio economic, climate change and disaster management objectives of the country.</p>
	<p>5. Are the components in Table B sound and sufficiently clear and appropriate to achieve project objectives and the GEBs?</p>	<p>MO August 6, 2015</p> <p>Overall; This project has many NAMA related elements. Please explain if the Government of Papua New Guinea would consider including NAMA registration as one of the activities.</p> <p>Component 1; GEF does not support lobbying activity. Please revise. Please clarify who will implement this component, and please include the relevant stakeholders in this</p>	<p>Agree. To date, the GOPNG through OCCD has only registered the country's focal point for NAMA. There has not been any further work on NAMA. Together with the assistance from this proposed project, the current process for developing the country's Intended Nationally Determined Contributions (INDC) is expected to help package the country's NAMAs that will be identified, developed, registered and later implemented. Some of the proposed activities on the identification and development of LC development projects (EE and RE) in Component 2 are intended</p>

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		<p>component. In the stakeholders table on page 15, neither Department of Petroleum and Electricity nor PNG Power Limited are responsible for policy and regulations. Also Provincial government seems not to participate in policy development and implementation. It concerns that the project will fail to implement the policy without their participation.</p> <p>Risk; Please revise mitigation action of No. 5 risk on policy as well.</p> <p>Component 2; Please explain what are commercial applications of EE and RE, and difference from community based application.</p> <p>Component 4; Please focus the awareness activity related with practical tools and schemes available for the public, so that the public will change behavior after they participated the activities.</p> <p>GEB; Table F expected 4,795 kilotons of CO2 mitigated, but page 13 shows 6 to 6.5 Mtons. Please clarify. Also this number is relatively high comparing other CCM projects. Please explain</p>	<p>to also assist in the speeding up the country's rather slow NAMA development work. These activities will also come up with potential NAMA projects that the country can consider to develop, prioritize, register and implement.</p> <p>Lobbying in this context means promoting, advocating and awareness raising for the purpose of having the proposed policies, standards and IRRs approved. The word has been changed if that does not sound proper to GEF now. Component 1 will be implemented with the Energy Division (ED) of the DPE as lead. The DPE is responsible for energy policy development; energy planning; data collection; energy advice to PNG Government including in areas of fuel prices, subsidies and electricity tariffs. Please note that the stakeholders table in Part II, Sec. 2 is for presenting the roles of each project stakeholder in the project design/preparation, i.e., how they will be engaged in project design/preparation. Hence, their individual roles are not stated. Nevertheless, here are the other stakeholders, with their specific mandates (not necessarily their role in the project design), that will be involved in the implementation of Component 1:</p> <ul style="list-style-type: none"> <li>• PNG Power Limited (PPL) Responsible for generation, transmission</li> </ul>

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		<p>how this is calculated.</p> <p>Knowledge Management; Please consider and include how the project will learn from other relevant project in LDCs and SIDS.</p> <p>MO August 13 2015 Comments cleared.</p>	<p>and distribution of power nationally, and; technical regulation of electricity provision;</p> <ul style="list-style-type: none"> <li>• Department of Environment and Conservation (DEC) Responsible for establishing environmental standards; conducting environmental impact assessments; coordination of GHG emission policies;</li> <li>• Independent Consumer and Competition Commission (ICCC) Responsible for setting electricity tariffs; fuel price control, and; awards power generation licenses;</li> <li>• Provincial and Local Level Governments Responsible for the implementation and enforcement of both national and local government policies, standards, rules and regulations, and in this context, those on energy and climate change mitigation related sustainable development aspects; and,</li> <li>• Other agencies, including but not limited to, PNG National Statistical Office, National Institute of Standards and Industrial Technology (NISIT) and Industry Associations such as the PNG Chamber of Commerce and Industry.</li> </ul> <p>The roles/responsibilities of these stakeholders in the project implementation will be clearly defined during the project design stage. The policy related roles/responsibilities of Provincial/Local</p>

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			<p>governments in the project design have been emphasized in the PIF.</p> <p>The word "lobbying" has been replaced with "promotional". Advocacy and promotional activities have been very effective in achieving the approval and enforcement of recommended policies, irrespective of these being GEF or non GEF projects.</p> <p>In the context of this project, commercial applications of EE and RE would include projects that are financed by the individual end user or owner; by an ESCO; or, by a bank/financial institution. Examples of commercial EE technology applications include projects financed (using equity and/or loans from banks) by an industrial plant or a commercial building and implemented by suitable engineering or architectural firms; or EE application projects designed, financed and implemented by ESCOs. Examples of commercial RE applications include power generation projects financed (using equity and/or loans from banks) by an independent power producer; RE system projects (power or non power) financed (using equity and/or loans from banks) by an industrial facility or a commercial building and implemented by suitable engineering or architectural firms; or similar projects designed, financed and</p>

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			<p>implemented by ESCOs.</p> <p>Community based application can either be commercial such as in the case of a private entrepreneur financed and operated RE based power generation and distribution system in a specific community/locality. This is basically a commercial business. Community based application can also be non commercial for a specific period of time like in government supported electrification programs in remote rural areas wherein the main aim of the program is social rather than commercial. The electricity services maybe free or subsidized at the start, but for sustainability reasons may gradually progress into something of a commercial business (run by the community, or by an entrepreneur in the community) especially when the social objective has been already achieved.</p> <p>For Component 4, the project proponents agree to the comment that awareness raising activities should result in the change of behavior. The proposed program will focus on specific stakeholders that will play key roles in developing, implementing, operating and sustaining low carbon initiatives (e.g., EE and/or RE) in the country. The outputs and activities have been revised in line with the reviewer's suggestion on practical</p>

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			<p>tools and schemes for the public to ensure the realization of improved awareness and attitude towards EE and RE applications in energy generation and energy end uses in the country.</p> <p>The CO2 emission reduction estimates are based on the historical annual CO2 emissions from the use of gas, liquid and solid fossil fuels in PNG from 2000 2011 (<a href="http://data.worldbank.org/country/papua-new-guinea">http://data.worldbank.org/country/papua-new-guinea</a>).</p> <p>The average annual CO2 emissions from that period was 4,366 ktons. The results of a trend analysis of these data show that the CO2 emissions by 2030 would be about 9,644 ktons/year. This is about the same as the lower bound value of the forecast CO2 emissions range of 10 to 14 Mtons/year by 2030 (Source: National Climate Compatible Development Management Policy Report of Office of Climate Change and Development, Papua New Guinea). The estimates 6.0 to 6.5 Mtons stated in page 13 of the PIF are CO2 emissions, not CO2 emissions mitigated. This range of CO2 emissions is based on two cases involving the implementation of actions that will result in an average annual incremental CO2 emission reduction from fossil fuel combustion of about 20% (Case 1) and 25% (Case 2) during the period 2017 2030. This considers the trend projection</p>

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			<p>that will result in about 10 Mtons/year CO2 emissions by 2030 as the baseline case. For Case 1, the result is an average annual CO2 emission of about to 6.5 Mtons, and for Case 2, the result is about 6.0 Mtons. The proposed project considers the conservative case of achieving an average 20% incremental reduction in annual CO2 emission. That translates to a total incremental CO2 mitigated (direct and indirect) of about 23,976 ktons during the period 2017 2030. Assuming 20% of this cumulative amount is directly attributable to the proposed project, the potential total incremental CO2 emissions mitigated would be 4,795 ktons. Yes, this amount is high compared to the other CCM projects in the Pacific because: (a) The fossil fuel consumption in the country is high (as shown in the above figure); and, (b) PNG is the Pacific island country (PIC) that has the largest land area, population, amounts of indigenous energy resources, and number and volume of economic activities.</p> <p>Part II, Sec. 7 has been revised to include uptake of lessons learned and best practices on the application of low carbon development strategies and techniques and EE/RE technologies from other countries like those in Asia, the PICs and in other SIDS, as well as sharing of project results to the same. The results of</p>

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			the project activities (e.g., EE/RE technology applications) will also be disseminated to these other countries through the information exchange network that will be created and operated under the project.
	6. Are socio-economic aspects, including relevant gender elements, indigenous people, and CSOs considered?	MO August 6 2015 Yes	
<b>Availability of Resources</b>	7. Is the proposed Grant (including the Agency fee) within the resources available from (mark all that apply):		
	<ul style="list-style-type: none"> <li>• The STAR allocation?</li> </ul>	MO August 6 2015 Yes. The requested amount is within STAR allocation.  Please include table D, so that the amount is correctly followed.  Please check co financing amount in Table A, B and C, and revise.  MO August 13, 2015 Comments cleared.	The filled in table has now been included in the revised PIF. The total co financing amount in Part I, Sec. A has been corrected to match with those stated in Secs B and C.
	<ul style="list-style-type: none"> <li>• The focal area allocation?</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>• The LDCF under the principle of equitable access</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>• The SCCF (Adaptation or Technology Transfer)?</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>• Focal area set-aside?</li> </ul>	NA	



<b>PIF Review</b>			
<b>Review Criteria</b>	<b>Questions</b>	<b>Secretariat Comment</b>	<b>Agency Response</b>
<b>Recommendations</b>	8. Is the PIF being recommended for clearance and PPG (if additional amount beyond the norm) justified?	MO August 6 2015 Not at this time. Please address comments in box 1, 3, 4, 5 and 7.  MO August 13 2015 All comments cleared. The program manager recommends CEO PIF clearance	
<b>Review Date</b>	Review	August 06, 2015	
	Additional Review (as necessary)	August 13, 2015	
	Additional Review (as necessary)		

<b>CEO endorsement Review</b>			
<b>Review Criteria</b>	<b>Questions</b>	<b>Secretariat Comment at CEO Endorsement</b>	<b>Response to Secretariat comments</b>
<b>Project Design and Financing</b>	1. If there are any changes from that presented in the PIF, have justifications been provided?		
	2. Is the project structure/ design appropriate to achieve the expected outcomes and outputs?		

## CEO endorsement Review

Review Criteria	Questions	Secretariat Comment at CEO Endorsement	Response to Secretariat comments
	3. Is the financing adequate and does the project demonstrate a cost-effective approach to meet the project objective?		
	4. Does the project take into account potential major risks, including the consequences of climate change, and describes sufficient risk response measures? (e.g., measures to enhance climate resilience)		
	5. Is co-financing confirmed and evidence provided?		
	6. Are relevant tracking tools completed?		
	7. <i>Only for Non-Grant Instrument:</i> Has a reflow calendar been presented?		
	8. Is the project coordinated with other related initiatives and national/regional plans in the country or in the region?		
	9. Does the project include a budgeted M&E Plan that monitors and measures results with indicators and targets?		
	10. Does the project have descriptions of a knowledge management plan?		
<b>Agency Responses</b>	11. Has the Agency adequately responded to comments at the PIF <sup>3</sup> stage from:		

## CEO endorsement Review

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	<ul style="list-style-type: none"> <li>• GEFSEC</li> <li>• STAP</li> <li>• GEF Council</li> <li>• Convention Secretariat</li> </ul>		
<b>Recommendation</b>	12. Is CEO endorsement recommended?		
<b>Review Date</b>	Review		
	Additional Review (as necessary)		
	Additional Review (as necessary)		

<sup>3</sup> If it is a child project under a program, assess if the components of the child project align with the program criteria set for selection of child projects.