



# REQUEST FOR CEO APPROVAL<sup>1</sup>

PROJECT TYPE: Medium-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

## PART I: PROJECT INFORMATION

Project Title: Rural Electrification with Renewable Energy in isolated areas of Ecuador			
Country(ies):	Ecuador	GEF Project ID: <sup>2</sup>	
GEF Agency(ies):	IADB (select) (select)	GEF Agency Project ID:	EC-G1001
Other Executing Partner(s):	Ministry of Electricity and Renewable Energy (MEER), with the support of the Consejo Nacional de Electricidad [National Electricity Commission] (CONELEC)	Submission Date:	19-6-2012
GEF Focal Area (s):	Climate Change	Project Duration(Months)	48
Name of Parent Program (if applicable): For SFM/REDD+ <input type="checkbox"/>		Agency Fee (\$):	86364

### A. FOCAL AREA STRATEGY FRAMEWORK<sup>3</sup>

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
CCM-3 (select)	Investment in renewable energy technologies increased	Renewable energy capacity installed	GEF TF	818190	3597200
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Subtotal				818190	3597200
Project management cost <sup>4</sup>			GEF TF	90900	192800
<b>Total project costs</b>				<b>909090</b>	<b>3790000</b>

### B. PROJECT FRAMEWORK

<sup>1</sup> It is important to consult the GEF Preparation Guidelines when completing this template

<sup>2</sup> Project ID number will be assigned by GEFSEC.

<sup>3</sup> Refer to the [Focal Area/LDCF/SCCF Results Framework](#) when filling up the table in item A.

<sup>4</sup> This is the cost associated with the unit executing the project on the ground and could be financed out of trust fund or cofinancing sources.

**Project Objective:** The general objective is (i) to support the GoE to increase the electricity coverage in rural and isolated areas of Ecuador using RE.

The specific objectives are (i) improve the sustainability of RE off grid-rural electrification projects; (ii) improve local stakeholders' capacities for Design, Implementation, Operation, Maintenance (O&M), Monitoring and Evaluation of off grid rural electrification systems; (iii) increase electricity access in rural and isolated areas with RE; (iv) assess the impacts of these interventions on the populations and; (v) to disseminate the results at local and regional level.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
Component 1 Improve local capacities to design, evaluate, implement and manage projects with RE	TA	<ul style="list-style-type: none"> <li>* Sustainable Management Model for RE projects in rural areas developed and implemented.</li> <li>* Regulatory framework improved</li> <li>*Members of the communities trained for Operation and Maintenance (O&amp;M)</li> <li>*Technical staff from public institutions trained for O&amp;M</li> </ul>	<ul style="list-style-type: none"> <li>*Methodologies for qualification and prioritization of RE projects (economic, financial, technical) reviewed</li> <li>*Projects validated with new methodology</li> <li>*Training activities defined</li> <li>* Methodologies reviewed &amp; improved</li> </ul>	GEFTF	183650	517000
Component 2 Project Implementation	Inv	<ul style="list-style-type: none"> <li>*kWh generated with RE systems</li> <li>* CO2 emissions reduced</li> </ul>	<ul style="list-style-type: none"> <li>*Households with new/improved electricity services</li> <li>*Schools with electricity access</li> <li>*Renewable Energy (RE) Capacity installed/improved (kW)</li> </ul>	GEFTF	601840	2967200
Component 3 Monitoring, Impact Evaluation and Dissemination of results	TA	<ul style="list-style-type: none"> <li>* Monitoring and follow-up protocols updated &amp; improved.</li> <li>*Qualitative and Quantitative impacts determined</li> <li>*Results Disseminated in the Region</li> </ul>	<ul style="list-style-type: none"> <li>* Monitoring and follow up protocols developed</li> <li>*Impact Evaluation (IE) surveys carried out</li> <li>*IE methodology developed</li> <li>*Publications developed</li> <li>* Project Audits</li> </ul>	GEFTF	32700	113000

	TA		(select)	0	
	(select)		(select)		
	(select)		(select)		
	(select)		(select)		
	(select)		(select)		
	(select)		(select)		
	(select)		(select)		
Subtotal				818190	3597200
Project management Cost <sup>5</sup>				GEFTF	90900
Total project costs				909090	3790000

**C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)**

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
Other Multilateral Agency (ies)	IADB (EC-L1087)	Soft Loan	450000
National Government	Gouvernement of Ecuador	In-Kind	192800
National Government	Gouvernement of Ecuador	Grant	2967200
Other Multilateral Agency (ies)	IADB (EC-T1235)	Grant	180000
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
Total Co-financing			3790000

**D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>**

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) <sup>2</sup>	Total c=a+b
IADB	GEF TF	Climate Change	Ecuador	909,090	86364	995,454
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				909,090	86364	995,454

**E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:**

<sup>5</sup> Same as footnote #3.

Component	Estimated Person Weeks	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
Local consultants*	120	111600	32400	144000
International consultants*	42	50000	55000	105000
<b>Total</b>		161600	87400	249000

\* Details to be provided in Annex C.

#### F. PROJECT MANAGEMENT COST

Cost Items	Total Estimated Person Weeks/Months	Grant Amount (\$)	Co-financing (\$)	Project Total (\$)
Local consultants*	208	83200		83200
International consultants*			0	0
Office facilities, equipment, vehicles and communications*		1200	20160	21360
Travel*		6500		6500
Others**	GdE staff (1)		172640	172640
	Specify "Others" (2)			0
<b>Total</b>		90900	192800	283700

\* Details to be provided in Annex C.

\*\* For others, to be clearly specified by overwriting fields \*(1) and \*(2).

#### G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

(If non-grant instruments are used, provide in Annex E an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund).

#### H. DESCRIBE THE BUDGETED M & E PLAN:

1.1. **Monitoring and Supervision Activities:** The Energy Division (INE/ENE) of the Inter-American Development Bank (IDB) as well as the Country Office (CEC/CEC) will support the implementation, follow up and evaluation of the Project. To do so, IDB energy specialist in the Country Office (CEC/ENE) as well as IDB energy specialists based on Headquarters (INE/ENE) will participate in the follow up of the activities through (i) periodic visits to the Ministry of Electricity and Renewable Energy (MEER, for its acronym in Spanish) and the National Electricity Council (CONELEC, for its acronym in Spanish) and (ii) the tracking of monitoring indicators through the Progress Monitoring Systems (PMR) of the IDB<sup>6</sup>. The Ministry of the Environment (MAE, acronym in Spanish) - the GEF Focal Point - will be invited to participated in the follow-up meetings/missions.

1.2. The Coordinating Unit (CU), based in MEER, will be responsible for monitoring and the development of monitoring reports. Additionally an Advisory Committee (AC) will be created as a mechanism to ensure inter-institutional coordination. The AC will be integrated for a representative of: (i) distribution companies involved in the project (ii) the Subsecretaría de Distribución y Comercialización de Energía (SDCE) (iii) the Subsecretaría de Energías Renovables y Eficiencia Energética (SEREE) (iv) CONELEC, (v) the Ministry of Strategic Sectors (MISCE, acronym in Spanish); (vi) the IDB and if necessary (vii) the Secretariat of the National Planning and Development

<sup>6</sup> The indicators of the PMR will be based on the indicators presented in the Results Matrix (see Annex A).

(SENPLADES) and the Ministry of Finance (MEF). The AC will be chaired by SEREE and shall hold meetings twice a year.

1.3. The CU will prepare twice a year a follow-up report, which will be presented to the AC during its sessions. In addition to the latter, the CU will prepare once a year, a Follow-up Report (FR) following GEF requirements. These reports will assess the overall achievement of outputs and outcomes of the project as well as the overall level of achievement of the components' objectives. This assessment will be based on the Results Matrix (RM) indicators defined in Annex A. All monitoring activities will be funded through the Project budget.

1.4. **Evaluation activities:** A final Evaluation will be carried out two years after the installation of 90% of the systems. This final evaluation will assess the indicators presented in the RM presented in Annex A and will be funded through component 3. This final evaluation will follow the GEF Guidelines for Terminal Evaluations. In addition, component 3 will fund and Impact Evaluation (IE) using robust impact evaluation methodologies, which will quantify the social and economic impacts at household level for off-grid projects using Renewable Energies (RE) (See Component 3)

1.5. Audits. The budget to carry out the financial audits at the end of the project is included in Component 3. (US\$10,000).

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

#### **A.1.1. The GEF focal area/LDCF/SCCF strategies:**

1.6. The main objective of this GEF Project is to support the GoE to increase the electricity coverage in rural and isolated areas of Ecuador using RE.

1.7. In order to do so, the Project will implement rural electrification projects in isolated areas using RE that have been included in the *Programa de Energización Rural y Electrificación Urbano Marginal* (FERUM, acronym in Spanish). This electrification process will be done using mainly photovoltaic (PV) off-grid systems. The project will define a Management Model (MM) that ensures the expansion of energy access of low-income populations in a sustainable manner, and that increase local capacities for implementing and managing decentralized energy generation projects.

1.8. Therefore this GEF Project is consistent with the overall objectives of the focal area of Climate Change (CC), which include the support to developing countries to introduce low-carbon technologies and energies. More precisely, this Project is aligned with the CC's objective number 3, which is to promote investment in RE technologies. The main outcomes of this Project are (i) regulatory frameworks for the introduction of RE improved and (ii) a sustainable management model for implementation of RE projects, developed. In terms of outputs this Projects seeks to increase the attractiveness of RE projects and so to increase the volume of RE investment in remote areas that will displace fossils fuels used for electricity generation.

#### **a.1.2. For projects funded from LDCF/SCCF: the ldcf/sccf eligibility criteria and priorities:**

#### **A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:**

1.9. The main objective of this GEF Project is to support the GoE to increase the electricity coverage in rural and isolated areas of Ecuador using RE.

1.10. This objective is consistent with the electrification goals stated in the *Plan Maestro de Electrificación* (PME, for its acronym in Spanish) 2009-2020, published by the CONELEC<sup>7</sup>. FERUM program was prioritized by SENPLADES over the next four years and all projects included in FERUM are to be technical and economically reviewed by CONELEC's technical team. Additionally, this Project will contribute to achieve the "National Action Plan for Good Living (NAPGL) 2009-2013" goals i.e. (i) to achieve an electrification coverage of 96% in the rural areas by 2013 and (ii) to reach a 6% participation of RE in the energy matrix, by 2013.

1.11. This project was prioritized at the national level by the MAE through an internal prioritization process

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<sup>7</sup> Document developed by CONELEC:

[http://www.conelec.gov.ec/documentos2.php?tpl=1&categ=5&subcateg=114&menu=5&submenu1=59&submenu2=171&idiom=1&orde=titulo\\_doc](http://www.conelec.gov.ec/documentos2.php?tpl=1&categ=5&subcateg=114&menu=5&submenu1=59&submenu2=171&idiom=1&orde=titulo_doc)

conducted during 2011 and during which GEF funds in Ecuador were allocated.

1.12. The first National Communication on Climate Change (NCCC) of Ecuador (2000) highlighted the viability, the socio-economic and environmental importance of rural electrification with solar energy as part of the mitigation activities, calculating a reduction potential of 842 tonCO<sub>2</sub>eq/yearly<sup>8</sup>. In the second communication on Climate Change the GoE highlighted the importance of changing the energy matrix and reduce the dependency on fossil fuels looking for sustainable renewable energies<sup>9</sup> and it highlights the role that solar energy has played in recent initiatives in decentralized projects. Moreover, the Technology Needs Assessment (TNA) highlights the contribution to climate change objectives that technology transfer activities can bring when related to rural projects and renewable energy such as photovoltaic<sup>10</sup>. Therefore this Project is consistent with the first and second NCCC as well as with the TNA, given that the Project activities are focused on the development of sustainable rural electrification projects using RE that demonstrate effectiveness and replication potential.

## **B. PROJECT OVERVIEW:**

### **B.1. Describe the baseline project and the problem that it seeks to address:**

1.13. Access to electricity has positive impacts on people's development and therefore increase the electrical coverage has been a concern of governments and of the international donor community, which have supported the implementation of rural electrification programs worldwide. Its economic, social, environmental and gender impacts as well as their main challenges during implementation have also been documented worldwide<sup>111213141516</sup>. This evidence is nevertheless focused mainly in Africa and Asia experiences and therefore there is a gap of information regarding the impacts of this type of projects in Latin America and the Caribbean (LAC).

1.14. Two type of strategies can be implemented when seeking electricity coverage increase. Grid extension and off-grid solutions. Off-grid projects are usually more costly than grid extension projects but when population is located in remote areas to (...) "build extensive central grid distribution systems with tens of kilometers of medium voltage and low voltage lines to light a few light bulbs in rural households is expensive" (World Bank 2010). Therefore RE off-grid projects are implemented when grid extension is not technically or economically feasible<sup>17</sup>. Indeed, it is estimated that in Latin America 1TWh should be produced by 2030 with isolated RE off-grid systems in order to achieve universal electricity access.<sup>18</sup> RE off-grid projects in isolated areas are therefore part of the solution for achieving universal access in LAC.

1.15. The GoE has implemented FERUM, an electrification program since 1998<sup>19</sup> FERUM aims to increase electricity access in rural and urban areas and funds were allocated to both, grid extension projects and RE off grid projects. Between 1998 – 2007, this program had an annual average contribution of US\$35 million, which allowed the implementation of electrification projects in different areas by 20 distribution companies of Ecuador. Until 2008, FERUM was funded through a surcharge to the commercial and industrial sectors<sup>20</sup>, then the Constitutional Mandate No.15 moved its funding to the General Budget of the State. This modification has affected the allocation of resources for rural electrification projects (See Table 1), which has been mainly allocated in the past years for

<sup>8</sup> <http://unfccc.int/resource/docs/natc/ecunc1s.pdf>

<sup>9</sup> <http://www.ambiente.gob.ec/?q=node/727&page=0,3>

<sup>10</sup> [http://unfccc.int/tclear/pdf/TNA/Ecuador/Ecuador\\_TNA.pdf](http://unfccc.int/tclear/pdf/TNA/Ecuador/Ecuador_TNA.pdf)

<sup>11</sup> See World Bank (2000). Energy prices, energy efficiency, and fuel poverty" and Barkat et al. (2002) "Economic and social Impact Evaluation Study of the Rural Electrification Program in Bangladesh".

<sup>12</sup> Barnes, D. (2004). "Energy, Equity and Economic Development".

<sup>13</sup> World Bank (2009). "Welfare Impacts of Rural Electrification A Case Study from Bangladesh". Shahidur R. Khandker Douglas F. Barnes Hussain A. Samad and Independent Evaluation Group (IEG) (2008). "The Welfare Impact of Rural Electrification – A Reassessment of the Costs and Benefits".

<sup>14</sup> See ESMAP (2008) "Maximizing the Productive Uses of Electricity to Increase the Impact of Rural Electrification Programs."

<sup>15</sup> See ESMAP. (2002). "Rural Electrification and development in the Philippines: Measuring the social and economic benefits".

<sup>16</sup> World Bank (2012). "Gender equality and Development", World Development Report.

<sup>17</sup> See World Bank (2010) "Addressing the Electricity Gap", June 2010 and World Bank (2008) "The Welfare Impact of Rural Electrification: A Reassessment of the Costs and Benefits".

<sup>18</sup> EIA Publication: "Energy Poverty; How to make modern energy access universal?", September 2012.

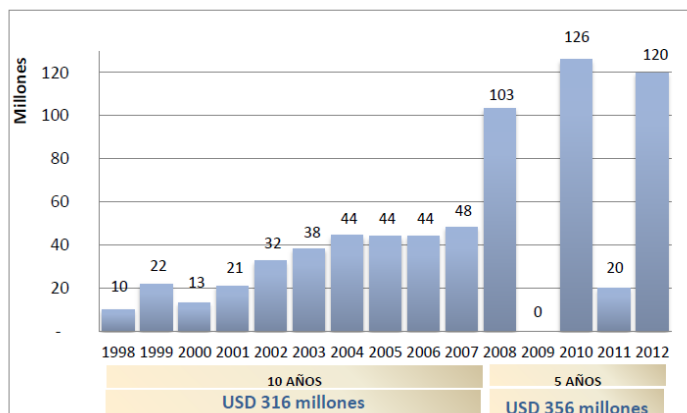
<sup>19</sup> Although the fund created for the electrification of the rural sector works since the year 1973, is from the year 1978 that such fund takes the name of FERUM and becomes the responsibility of CONELEC.

<sup>20</sup> Originally, the FERUM's regulation stated that the rural and marginal urban electrification projects will finance themselves with the existing resources in the FERUM, at the National Electrification Fund, under the Basic Law of Electrification, and in the Special Fund for the connection of services to consumers of low incomes. Additionally, the budget would increase with additional surcharge of 10% over the net value invoiced for the supply of electric service to consumers in the commercial and industrial category.

grid-extension projects.

1.16. In 2010, thanks to an investment of US \$126 million, the FERUM benefited 1.2 million people in rural and urban sectors, helping Ecuador reach a 93% of total coverage in that year.

**Table 1: Annual Investments in RE projects in Ecuador (1998-2012)**



Source: CONELEC

1.17. Currently and according to the *Instituto Nacional de Estadísticas del Ecuador* (INEC) the coverage reaches 94% in urban areas and 89% in rural areas. In rural areas the coverage rate ranges from 60% to 98% depending on the region (See Table 2). Therefore, in rural areas approximately 90.000 households (350.000<sup>21</sup> persons) do not have access to electricity. This population is highly vulnerable population: according to the Economic Commission for Latin America and the Caribbean (ECLAC), the poverty rate in rural areas reaches 43% and the indigent rate 20%. Moreover, according to the PROMEC Study “*Consultoria para la Estimacion de la capacidad de Pago de Poblaciones Rurales- 2007*”, it is estimated that the average energy cost for a rural family -without electricity- is approximately US\$15 per month, representing approximately 20% of the total monthly income.

1.18. As mentioned before, the NAPGL 2009-2013 goals are: (i) to achieve an electrification coverage of 96% in rural areas by 2013 and (ii) to reach a 6% participation of RE in the energy matrix, by 2013. In order to achieve these targets, new investments in rural electrification projects will be required through both grid extension projects and RE off-grid solutions.

<sup>21</sup> According to INEC, the average persons within a house is 3,8.

**Table 2: Electrical Coverage, Year 2010**

	Urbano			Rural			Total		
Provincia	Viviendas (#)	Ciudadanos (#)	% Cobertura	Viviendas (#)	Ciudadanos (#)	% Cobertura	Viviendas (#)	Ciudadanos (#)	% Cobertura
AZUAY	117.022	115.565	98,76%	66.895	63.669	95,18%	183.917	179.234	97,46%
BOLIVAR	30.560	27.754	90,85%	16.550	13.705	82,81%	47.110	41.459	88,02%
CAÑAR	33.102	32.075	96,93%	24.275	22.735	93,68%	57.377	54.810	95,56%
CARCHI	27.741	27.496	99,12%	15.159	14.190	93,63%	42.900	41.686	97,18%
CHIMBORAZO	71.718	68.365	95,33%	51.327	44.586	86,89%	123.045	112.951	91,81%
COTOPAXI	58.346	55.143	94,52%	43.454	37.927	87,31%	101.800	93.070	91,44%
EL ORO	133.181	129.544	97,31%	25.835	24.299	94,12%	159.016	153.843	96,79%
ESMERALDAS	82.633	75.873	92,09%	46.277	35.047	76,86%	128.910	110.920	86,62%
GALAPAGOS	6.058	6.029	99,54%	1.103	1.061	96,65%	7.161	7.090	99,09%
GUAYAS	867.710	800.347	92,53%	73.002	63.677	87,40%	940.712	864.024	92,13%
IMBABURA	63.947	63.004	98,53%	37.139	35.231	94,87%	101.086	98.235	97,19%
LOJA	77.354	75.064	97,05%	36.354	32.477	89,48%	113.708	107.541	94,63%
LOS RÍOS	151.213	136.979	90,71%	48.723	41.782	85,84%	199.936	178.761	89,52%
MANABÍ	258.276	235.964	91,56%	79.694	66.697	83,92%	337.970	302.661	89,76%
MORONA SANTIAGO	16.846	14.645	87,05%	15.945	9.956	63,51%	32.791	24.601	75,61%
NAPO	12.981	12.112	93,37%	9.357	6.928	77,71%	22.338	19.040	86,81%
ORELLANA	17.540	15.884	90,62%	13.837	9.075	67,70%	31.377	24.959	80,51%
PASTAZA	11.246	10.627	94,62%	8.216	5.027	62,21%	19.462	15.654	80,94%
PICHINCHA	524.805	521.549	99,39%	196.125	192.859	98,36%	720.930	714.408	99,11%
SANTA ELENA	44.819	40.779	91,09%	29.496	24.625	83,55%	74.315	65.404	88,10%
SANTO DOMINGO DE LOS TSACHILAS	78.327	75.997	97,06%	15.696	13.771	87,79%	94.023	89.768	95,51%
SUCUMBIOS	26.866	24.439	91,35%	15.916	11.490	74,21%	42.782	35.929	84,97%
TUNGURAHUA	76.575	75.524	98,63%	60.859	57.440	94,39%	137.434	132.964	96,75%
ZAMORA CHINCHIPE	12.785	11.776	92,13%	8.200	6.630	81,00%	20.985	18.406	87,78%
ZONAS NO DELIMITADAS				7.834	6.131	78,40%	7.834	6.131	78,40%
<b>Total general</b>	<b>2.801.651</b>	<b>2.652.534</b>	<b>94,82%</b>	<b>947.268</b>	<b>841.015</b>	<b>89,03%</b>	<b>3.748.919</b>	<b>3.493.549</b>	<b>93,35%</b>

Datos según resultados del Censo de Población y Vivienda noviembre 2010, publicados por el INEC

Source: CONELEC (PME 2012-2021)

1.19. According to the PME 2009-2020, approximately 43.923 households are located in remote areas and far from the National Grid and therefore are candidates for off-grid rural electrification projects and its geographical distributions is as follows: el 84,70% in the Amazon region, el 7,40% in the Coast Region and 7,90% in the highlands (Sierra). According to other more recent estimates , as per 2010, at least 18.000 households would need to be electrified using RE off grid projects.

1.20. Regarding its energy resources, “Amazon region is lowland and there is no wind potential or waterfalls for electricity generation purposes, the only alternative to provide electrical power to such stocks without issuing gas greenhouse is through photovoltaic systems<sup>22</sup>” and therefore PV is usually recommended. In these areas, due to its geographical location, solar resources range between 4-5 kWh/m<sup>2</sup>-day<sup>23</sup> which can be characterized as a medium to high level range.

1.21. On November 2nd 2011, IDB’s Board approved the US\$40 million loan “Electrification Program for rural and marginal urban areas of Ecuador (EC-L1087)”, from now on “IDB-MEER” project. The IDB-MEER project will provide financing for the peri-urban and rural projects of FERUM portfolio of 2011, 2012 and 2013 and will allow the implementation of some 1.100 Electrification projects through grid extensions. No component of off grid projects in rural areas was included in the IDB-MEER project and therefore no funds for financing FERUM RE projects will be available for 2012.

1.22. However, previous studies have demonstrated that PV systems are cost-effective technology and bring aggregated economic benefits. In the case of PROMEC, PV systems had an Economic Rate of Return (ERR) greater than 12%, which is usually the rate used by SENPLADES for economic evaluation of public projects in Ecuador. In the case of the pilot projects to be financed by the GEF Project, the economic and financial viability of each project will be assessed, which will allow to prioritized and thus ensure that all projects that will be financed will have an ERR equal or greater than 12% (See Component 1 activities).

1.23. RE off-grid projects usually have high upfront cost, low maintenance and operation costs. RE off-grid projects are usually not viable from the financial perspective (from the Distribution Company perspective). However, these projects are economically feasible and therefore require a subsidy in order to compensate the financial losses that the Distribution Company would had incurred. Thus, these projects might be implemented using an investment incentive systems<sup>24</sup>. These type of subsidies are therefore awarded only once to the Distribution Company, given that they are designed to compensate the higher up-front cost that these projects face. The results

<sup>22</sup> United Nations Development Program UNDP/Ministerio de Energia y Minas (MEM) (2006) - Recopilación de antecedentes y experiencias nacionales en electrificación rural fotovoltaica, Peru)

<sup>23</sup> Atlas Solar del Ecuador, CONELEC. [www.conelec.gob.ec](http://www.conelec.gob.ec)

<sup>24</sup> This system is being implemented in IDB-MEER project.



of the economic and financial analysis will allow to determine the subsidy amount and the total costs for O&M that should be covered by families through the tariff to be set and taking into account the households's willingness/capacity to pay<sup>25</sup>, in order to ensure sustainability.

1.24. In order to analyze all these issues the GEF project will develop a MM that will define a set of aspects required to ensure long-term sustainability of these projects.

1.25. Currently there is no specific economic methodology for off- grid projects. However, an economic methodology has already been discussed and agreed with CONELEC for grid-extension electrification projects under the IDB-MEER project which estimates the subsidy level that would be required in order to compensate the financial loss of the Distribution Companies when dealing with grid extension rural electrification projects.

1.26. The IDB-MEER project, will strengthen local capacities of MEER and CONELEC Technical Team (PTT) on economic, financial, and impact evaluation methodologies. In addition, the IDB-MEER project will strengthened the local capacities for assessing socio-environmental aspects that should be analyzed for selection of rural electrification projects, contributing directly to the GEF Project objectives. The investment of US\$ 38.5 millions of Component 2 of the IDB-MEER project focuses on investing on grid extension projects that would not contribute to increase the RE capacity in the country although it will contribute to increase the total electricity coverage in Ecuador.

1.27. **Previous Experiences and lessons learned.** In the past, the GoE has implemented PV solutions to increase energy access in remote areas. Approximately, 3.000 PV systems were implemented in isolated areas under different programs and using different management models (example: FERUM, EUROSOLAR, CAPCOA, PROMEC among others). Whereas some of these projects focused on proving electricity for satisfying household needs, other focused on proving energy to improved quality services (telecommunication, health centers, etc) in rural areas.

1.28. One of those previous experiences, is PROMEC. Its terminal reports highlights<sup>26</sup> the importance of “the introduction of new institutional arrangements for operation and maintenance of solar home systems in isolated rural communities, under the supervision of the distribution companies”. This experience has also provided evidence on other issues such as: “(a) the importance of utilizing a strong existing community organization rather than a special purpose group created to manage the activity; (b) the difficulty in ensuring that the distribution companies take responsibility for the operation of the systems; (c) other issues such as the complaints about the limited capacity of the PV systems and the importance of maintenance particularly following heavy storms that damaged some panels.”

1.29. This sustainability problem has been observed and documented in many other electrification projects worldwide<sup>27</sup> and some of these previous projects in Ecuador have as well presented this problem. According to the information provided during the Planning Workshop for this GEF project<sup>28</sup>, the sustainability problem of this type of projects is the main barrier for future projects development and the current situation of the previously installed PV systems is quite diverse: (i) some of them were brought back to the distribution companies when families were connected to the grid and have been re-installed in other communities; (ii) some communities kept the PV systems when the grid arrived given that they had the property rights ; (iii) in other cases the PV systems installed are not functioning anymore (iv) and a small part of the FV systems are still functioning.

1.30. During the GEF planning workshop, additional barriers and challenges were identified such as: (i) the necessity to improve the qualification and prioritization methodologies (economic and financial methodologies) for RE off-grid projects (ii) definition of a Management Model (MM) that defines: stakeholders' responsibilities, technical solutions, tariffs and mechanisms for billing, appropriate Maintenance and Operation (M&O) mechanisms, amongst other issues; (iii) financial problems of the distribution companies for funding extra costs related to O&M and (iv) lack of standard procedures for follow up and monitoring.

The component 1 of this project seeks to address these issues in order to analyze these issues in detailed and provide the GoE, a MM that ensures long-term sustainability of the projects.

<sup>25</sup> According to PROMEC studies “*Consultoria para la Estimacion de la capacidad de Pago de Poblaciones Rurales- 2007*” the capacity to pay of rural households is approximately 7-10 USD/month.

<sup>26</sup> See The terminal evaluation of PROMEC. [http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2009/03/02/000334955\\_20090302002342/Rendered/INDEX/ICR6280Ecuador101Official0Use0Only1.txt](http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2009/03/02/000334955_20090302002342/Rendered/INDEX/ICR6280Ecuador101Official0Use0Only1.txt)

<sup>27</sup> See World Bank Document: “Addressing the Electricity Gap”, June 2010

<sup>28</sup> IDBDOCS-#36520088-Informe Taller Planificación GEF

1.31. According to the PME 2012-2021 the total budget for 2013 FERUM projects is US\$120 Million from which about 4% should be invested only in RE electrification projects in isolated areas (*Generacion Renovable*). This budget proposal will have to be reviewed by the MEF during the National Budget Definition for 2013. It is important to highlight that although the GoE had foreseen an investment of US\$120 Million for FERUM projects in 2012 only US\$40 million were allocated (IDB-MEER project) and as mentioned, priority was given to grid extension projects.

1.32. The sustainability problem has undermined the allocation of funds to RE off-grid projects although they have had have positive economic indicators. This situation should not be different in 2013 and therefore it is expected that FERUM 2013 also prioritize grid extension projects. The GEF Project aims to reduce the sustainability risks of off-grid rural projects and increase the knowledge on the impacts and benefits of these projects to ensure that future funds are allocated to RE FERUM projects. The project baseline without GEF project would be an investment of US\$9 millions i.e in projects with RE in schools and/or other public services and minor rehabilitation of existing PV systems (total US\$9 millions and 300 kW). The Project expected scenario with GEF Project is the allocation of all the resources required to increase coverage in isolated rural areas, i.e approximately US\$45.000.000 in a 10 year period assuming an allocation equal to previous resource allocation, ie., US4.5 million.

**B. 2. incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:**

1.33. The general objective of this project is (i) to support the GoE to increase the electricity coverage in rural and isolated areas of Ecuador using RE.

1.34. The specific objectives of The Project are: (i) improve the sustainability of RE off grid-rural electrification projects; (ii) improve local stakeholders' capacities for Design, Operation, Maintenance (O&M), Monitoring and Evaluation of off grid rural electrification systems; (iii) increase electricity access in rural and isolated areas with RE;(iv) assess the impacts of these interventions on the populations and; (v) to disseminate the results at local and regional level.

1.35. The GEF Project will therefore (i) support the development of rural electrification projects in isolated areas with RE (mainly through PV systems) focusing on reviewing the methodologies of qualification and prioritization (economic and financial methodologies) and implementing pilot projects that will support the validation of the MM to be defined and assessing the final impacts at household level.

1.36. The definition of a MM and the implementation of pilot projects through this initiative is a unique opportunity to develop and test a model that provides long-term sustainability for off-grid rural electrification projects that will be financed by the GoE or other donors. This project will therefore support the GoE to ensure funds' effectiveness in these areas. In addition to the latter, this project will support the recovery of PV off-grid projects that are currently not performing adequately, analyzing their failures and implementing the MM for their operation. The GEF project will therefore not only complement the MEER efforts to increase access to electricity in rural areas, it will also develop a sustainable methodology that will encourage future investment in this type of projects.

1.37. This project is composed of three components:

**1.38. Component 1: Improve local capacities for designing, evaluating, implementing and managing projects with RE.**

The activities to be developed under Component 1 are:

- (i) Methodology improvement. Review and improvement of economic and financial evaluation tools and definition of a prioritization methodology for RE off-grid projects. This improvement will be done taking into consideration the previous work done under the IDB-MEER project, which already developed an economic and financial methodology for grid-extension projects. Since this methodology was designed for grid extension projects, the GEF project will update this methodology taking into consideration the specific costs of RE off-grid projects and rural consumers' characteristics. This methodology will be used to assess

the economic and financial indicators of FERUM projects<sup>29</sup> and to estimate by project its subsidy level. Subsequently, the Project will – based on the analysis of different methods – define one prioritization criteria in order to select the projects to be implemented by component 2. This will ensure the effectiveness in the allocation of resources and will contribute to the definition of a robust IE methodology. During this analysis, different technologies and costs to provide electricity to rural communities will be analysed in order to ensure the cost-effectiveness of the RE solutions proposed.

- (ii) Review of existing projects documentation. In addition to the review and definition of an economic and financial methodology, the GEF project will also provide technical assistance for the review of the technical aspects of projects being evaluated. This will be done using an on-the-job training mechanisms that allows to ensure the transfer of capacities on PV design and implementation to the technicians of the Distribution Companies.
- (iii) Definition of a MM. In order to ensure long term projects' sustainability a MM will be defined by analyzing and defining at least (a) different PV technological solutions (b) minimum standards for components and installation of PV systems (c) alternatives for tariffs and payment options (d) O&M mechanisms and requirements; (e) community participation options and (f) monitoring methods. As a result of this analysis, a MM will be defined and will guide the management of the pilot projects to be implemented in Component 2.
- (iv) Training activities. Under this component, the Project will assess the training needs for each of the stakeholders of this project. The minimum training needs identified during the GEF Workshop are: MEER, CONELEC and the distribution companies' personnel will be trained on the economic and financial evaluation. Distribution Companies will be trained on PV design, implementation, monitoring and maintenance and repair of PV systems; and final beneficiaries, i.e, communities<sup>30</sup>, will be trained on use and on O&M requirements for PV systems<sup>31</sup>. Currently, MEER, CONELEC and Distribution Companies have already many years of experience financing, implementing and designing grid extension rural electrification projects. The activities of training will therefore focus on those challenges related to RE-off grid projects (technical, management and economic challenges).

1.39. **Component 2: Implementation of RE projects.** This component will finance the implementation of new off-grid RE projects in rural and isolated areas - for schools and households in specific communities of the Amazonia. Projects will be selected based on the economic and financial methodology, which will determine the incentive require (subsidy) per project. These incentives will be financed through this Component using the MM discussed and validated in component 1. This component will also fund the investment required for improve existing off-grid PV systems that are currently out-of-service<sup>32</sup> which are located in the northern part of Amazonia (*Orellana*).

1.40. The GEF Project will benefit approximately 350 households (approximately 1.300 persons) which will have access to electricity at household level and 400 communities by providing electricity to their schools<sup>33</sup>. All these communities are located in remote areas accessing polluting and inefficient energy systems (kerosene, diesel, candles, etc.). The overall investment of the Project will increase the RE installed capacity in approximately 330 kW<sup>34</sup>.

1.41. **Component 3: Monitoring, Impact Evaluation (IE) and Dissemination of Results.** The activities to be carried out under this component are:

<sup>29</sup> In the case of the pilot projects to be financed by the GEF project, projects need to have an ERR greater than 12% or other ERR defined according to SENPLADES' criteria.

<sup>30</sup> According to the existing CONELEC regulation regarding FERUM projects, communities need to express their interest to access electricity and therefore all households within the community participates and benefit from the electrification process.

<sup>31</sup> In order to properly assess the community needs an ONG will be hired to improved and assess on the dialog with the communities.

<sup>32</sup> These activities will be carried out by MEER with collaboration of the Spanish ONG, *Ingenieros Sin Fronteras* (ISF).

<sup>33</sup> The school project (LUCES) will have a longer execution period (5 years) than the GEF Project (4 years) therefore the total RE new capacity installed considers only the installations during the period 2013-2016, equivalent to 400 schools. Moreover, the LUCES project include investment in other items such as telecommunication equipment that was considered as co-financing directly for the GEF Project.

<sup>34</sup> The final figures regarding the number of beneficiaries and the RE capacity to be installed will depend upon the results of the economic and financial evaluation.

- (i) Definition of a protocol for monitoring the implementation and performance of the installations, including technical performance of the equipment and the results management performance (payment level, development maintenance activities, etc). In order to monitor both aspects, monitoring indicators will be defined by the Project Team taking into consideration the indicators defined in the Project Result Framework.
- (ii) Definition and implementation of an IE methodology for assessing the main social and economic impacts at household level of the Project and the effectiveness of the MM defined in component 1. To do so, a “Theory of Change” of the GEF project will be defined along with the best methodology<sup>35</sup> and the indicators of impacts at household level to be evaluated. Subsequently, the Project will carry out ex-ante<sup>36</sup> and follow-up surveys at household level with the specific purpose of quantifying the impacts – according to the defined indicators- and identify main lessons learned. The ex-ante survey will complement the information already available from other sources such as the 2010 Census. However, the census do not provide all the information needed to evaluate the medium and long term impacts of rural electrification at household level. The analysis of all data (including ex-ante and ex-post surveys) will provide robust information on impacts of RE off-grid projects to the stakeholders for the financing and implementation of future rural electrification programs in isolated areas in Ecuador and the region.

Activities (i) and (ii) of this Component will allow to verify the ex-ante assumptions regarding household consumption, social benefits, willingness to pay, the technical performance of the systems implemented and so to update if required the methodologies discussed in Component 1.

- (iii) Dissemination activities which will include (a) Preparation of publications with the main results of the IE and the lessons learned (b) At least 2 events, one regional event with participants from other countries currently implemented rural electrification projects<sup>37</sup> and one at national level to present and discuss the main results of the project.

### ***Global Environmental Benefits***

1.42. In order to estimate the CO2 emissions reduction impact the following considerations were taken into account: (i) This Project will directly enable the investment of at least US\$3.5 million on RE energy in isolated areas of Ecuador, i.e, approximately 330 kW that will displace polluting energies (car battery uses, small independent diesel generators, kerosene lamps, among others). Indirectly, the Project could enable the investment of 4,500 kW in the next ten years. Considering a production factor of 15% and a using the GEF methodology for CO<sub>2</sub> reduction calculation, the direct emissions reduction is estimated to be 2,575tCO<sub>2</sub>e. Using the indirect bottom-up approach emissions reduced are 5,150 tCO<sub>2</sub>e whereas using the indirect top-down approach a reduction of 18,212tCO<sub>2</sub>e is estimated.

**B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF). As a background information, read [Mainstreaming Gender at the GEF.](#):**

1.43. The literature has shown that electrification programs bring a set of benefits to the rural population<sup>38</sup>. Its importance for achieving social and economic development is undeniable and therefore increase access to modern energies is an objective of the national governments, the international community and of the Multilateral Development Banks (MDBs). The main expected impacts of the GEF Project are as follows:

<sup>35</sup> Experimental or quasi-experimental approaches are perceived as today’s most effective techniques to measure effectiveness in particular when dealing with low-income population (Estache 2010). “(...) Under these approaches the results of two groups are compared, one that receives an intervention and one that does not in order to show that the intervention is the cause of an outcome. (...) A quasi-experimental design is similar to an experimental design, but it does not randomly assign individuals to groups”. (Morra,L et al, 2009)

<sup>36</sup> This survey should be carried out at least a month before the pilot projects are implemented.

<sup>37</sup> IDB is working with Suriname, Guyana, Peru and Bolivia in these topics.

<sup>38</sup> See Independent Evaluation Group (IEG) (2008). "The Welfare Impact of Rural Electrification – A Reassessment of the Costs and Benefits.

1.44. **Economic Impacts.** There is evidence that access to modern energies has positive economic impacts. The economic benefits have two components : (i) the avoided costs for lighting and TV/radio (rechargeable car-batteries, small diesel generators, candles, kerosene lamps) that households will not incur when the PV systems are installed, and (ii) the consumer surplus resulting from the increased consumption at lower per unit prices (measured in US\$/kWh<sub>eq</sub>)<sup>39</sup>.

1.45. This reduction on the per unit cost, resulting in an overall reduction on the ratio between total energy expenses and total income, that usually is more important in poor families that proportionally spend a higher share of their income on energy services<sup>40</sup>. More efficient energy sources will therefore allow families to maintain or reduce their total energy expenses accessing more services and even to re-allocate family income in other activities or services. Moreover, there is also evidence on the existing link between productivity impact and electricity access<sup>41</sup>. The pathways that are usually analyzed are (i) increase and creation of productive activities due to the possibility of extending hours of small family businesses and/or (ii) generation of new productive activities (micro-business) due to the availability of , for instance, refrigeration<sup>42</sup>. In the case of this Project, and according to the PROMEC Study “*Consultoria para la Estimacion de la capacidad de Pago de Poblaciones Rurales- 2007*”, it is estimated that the average energy cost for a rural family -without electricity- is approximately US\$15 per month, representing approximately 20% of the total monthly income.

1.46. **Environmental Impact.** A reduction in the use of fossil fuels can lead to local and global positive environmental impacts. There exist a correlation between the use of kerosene within dwellings and its indoor pollution level<sup>43</sup>, so due to access to electricity, families will be able to replace inefficient and polluting fossil fuels such as kerosene lamps, candles, or diesel generators for clean energy without emissions. At the global level, introducing RE in remote areas of the country will displace the use of polluting fuels and reducing CO<sub>2</sub> emissions associated with fossil fuels combustion. Moreover these projects will be able to demonstrate the feasibility of using clean energy in rural areas, enabling the country to increase the investment in these technologies.

1.47. **Social & Health impacts.** International studies show that there are positive impacts in areas such as the learning of children, who with proper lighting are able to spend more time studying<sup>44</sup>. Moreover, in the case of schools, an impact on a better education is clearly foreseen. Local population health improvements could be an outcome of the project due to improvement in communications and the access to refrigeration (food preservation & vaccines preservation). Additionally, evidence has shown that rural projects have a gender component. Since women and girls usually have additional benefits in rural electrification projects due to timesaving and health improvements<sup>45</sup> and therefore a gender impact is expected as a result of this project.

1.48. In March 2012, and within the activities of IE of the IDB-MEER project a workshop regarding IE was conducted in Quito where the main impacts of off-grid rural electrification project were discussed and agreed with SEREE and CONELEC.

1.49. These impacts aforementioned are those which have been named in the literature worldwide. The IE will be conducted in order to validate and quantify the real impacts of electricity access at household level for the case of Ecuador. Up to now, no robust IE has been conducted in Latin America or the Caribbean. (See Component 3) The final indicators to be evaluated will be agreed upon with the GoE but a reasonable impact is the reduction of the overall energy expenses at household level.

**B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:**

<sup>39</sup> See World Bank (2000). “Energy prices, energy efficiency, and fuel poverty” and Barkat et al. (2002) “Economic and social Impact Evaluation Study of the Rural Electrification Program in Bangladesh”.

<sup>40</sup> Barnes, D. (2004). “Energy, Equity and Economic Development”.

<sup>41</sup> World Bank (2009). “Welfare Impacts of Rural Electrification A Case Study from Bangladesh”. Shahidur R. Khandker Douglas F. Barnes Hussain A. Samad and Independent Evaluation Group (IEG) (2008). “The Welfare Impact of Rural Electrification – A Reassessment of the Costs and Benefits”.

<sup>42</sup> See ESMAP (2008) “Maximizing the Productive Uses of Electricity to Increase the Impact of Rural Electrification Programs.”

<sup>43</sup> Caceres et al (2001). “Contaminacion Intradomiciliaria en un sector de extrema pobreza en la comuna de la Pintana”.

<sup>44</sup> See ESMAP. (2002). “Rural Electrification and development in the Philippines: Measuring the social and economic benefits”.

<sup>45</sup> World Bank (2012). “Gender equality and Development”, World Development Report.

N	Risk	Rating	Description
1	(1) Technology is not well accepted/managed by beneficiaries.	Low	This risk will be mitigated by the implementation of project components 1 and 3 that (i) will define a sustainable MM to address operational issues and assess the economic and social impacts respectively; and (ii) addresses maintenance and equipment replacement issues. Additionally, the project will provide training at the community level for correct use and for the personnel in the community that will be in charge of the operation and maintenance, in order for the project to achieve self-sustainability.
2	Poor/inadequate design and/or installation.	Low	Another risk to consider during the GEF Project development is the technical risk associated with poor design or installation of the systems. As a mitigation measure, the project will hire an international (supervisor) that will review all technical designs and who will as well follow-up the installations during the execution of works. This consultant will also provide training activities regarding design, implementation, maintenance and repair will be conducted for technical personnel of the Distribution Companies.
3	Political and Institutional Risks.	Moderate	Change of political priority for selecting RE projects and/or political/institutional barriers to implement the new MM or new regulations. In order to reduce these risks, a fluent dialog with the GoE and its institutions will be needed and the results of these projects should be presented and shared at all national levels.
4	Risks associated with Climate Change.		No climate change related risks that could create a significant impact on the project have been identified.

**B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:**

1.50. COMMUNITIES AND FAMILIES, which must express their interest in accessing electrical services to the distribution companies. The implementation of the rural electrification pilots will include consultation with rural communities and indigenous populations prior to the Project activities. Their involvement in the operation and management of PV systems is key. These responsibilities will be analyzed during the definition of the MM in order to ensure the right community participation and the community training needs.

1.51. DISTRIBUTION COMPANIES which are the contact point between the communities and CONELEC. The distribution companies receive the electrification request and undertake technical and environmental designs, which are sent to CONELEC for the respective review and prioritization.

1.52. CONELEC, receives and validates the project from a technical, socio-economic and environmental perspective and will participate in the implementation of RE off-grid projects with SEREE.

1.53. MEER which allocates funds for the implementation of FERUM projects, once the projects have been validated by the CONELEC and prioritized by SENPLADES. MEER, is the entity that receive the funds for rural electrification projects in isolated areas with RE and is the implementation agency vis-à-vis the distribution companies.

1.54. SENPLADES validates the projects already approved by CONELEC and then prioritizes the project at the National level.

**B.6. Outline the coordination with other related initiatives:**

1.55. Currently, INE/ENE is working together with the Multilateral Investment Fund (MIF) in order to develop an additional project to support this GEF project with technical assistant specially oriented to community development.

### **C. GEF AGENCY INFORMATION:**

#### **C.1 Confirm the co-financing amount the GEF agency brings to the project:**

1.56. The GEF agency brings to the project as co-financing the total amount of US\$630,000. US\$180,000 of this co-financing comes from a non-reimbursable Technical Cooperation (TC), funded through INFRAFUND (EC-T1235) and US\$450,000 from the Project EC-L1087.

1.57. In December 2011, a US\$180,000 TC “Support the Rural Electrification Program of Ecuador” (EC-T1235) was approved by the IDB. This TC, funded by INFRAFUND will be allocated for the review of CONELEC’s methodology for the assessment of the rural portfolio projects currently being identified by CONELEC. This process will allow for the identification of projects to be financed by GEF and to adjust, if necessary, CONELEC’s methodology for future MDB’s financing of rural electrification projects. In addition, these funds will be also allocated for the definition of the IE methodology (theory of change, baseline survey and follow up surveys).

1.58. On November 2nd 2011, IDB’s Board approved a US\$40 million loan (EC-L1087) to the GoE that will provide financing for the rural & peri-urban projects already included in the FERUM, allowing the implementation of some 1.100 Electrification projects. This project will be managed by MEER with technical support of CONELEC’s technical team (PTT). The PTT will be staffed by 7 professionals that will be implementing the IDB-MEER project in a 2-year period benefiting from training in social, environmental and local communities management. PTT local staff working on the IDB-MEER project will be as well working in the GEF project and therefore the GEF project will benefit from existing capacities.

#### **C.2 How does the project fit into the GEF agency’s program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:**

1.59. This GEF Project is aligned with the IDB’s Country Strategy (CS) for the period 2008-2011 (GN-2490). The new strategy is under development but this project has already been considered as a project of a strategic importance for the dialog with the country due to its technical assistant component and its investment enabling impact.

1.60. This project is as well aligned with two of the Nine General Increase of Capital (GCI-9) priorities of the IDB (i) “Social policy for equity and productivity and (ii) “Protect the environment, respond to climate change, promote renewable energy, and ensure food security”.

1.61. The IDB staff in Ecuador has an extensive experience executing projects. Currently the IDB is executing three loan projects in the energy sector: (i) “Support for the Transmission Program” (EC-L1070) for US\$ 64,7 Million; (ii) “Modernization of Pumping Stations on the Esmeraldas-Quito Multiproduct Pipeline” (EC-L1040) for US\$58 Million and the already mentioned (iii) IDB-MEER project (EC-L1087) for US\$40 Million.

1.62. In addition to the latter, IDB is also providing Technical Assistant to the GoE on different energy issues, such as (i) Rural Electrification, though the TC named Support to EC-L1087 Program (Ecuadorian Rural/Marginal Electrification Program) (EC-T1222); (ii) Renewable Energies, through the TC named “Support to the National Hydroelectric Expansion Program” (EC-T1221); and (iii) Energy Efficiency and Renewable Energies, through “Sustainable Energy National Action Plan” (EC-T1181). IDB has therefore a strong experience in the sector which gives IDB a comparative advantage to implement this project.

## **PART III: INSTITUTIONAL COORDINATION AND SUPPORT**

### **A. INSTITUTIONAL ARRANGEMENT:**

1.63. **Legal framework of the electricity sector.** Legislation for Ecuador’s electricity sector is mainly based on the 2008 Constitution of the Republic of Ecuador; Constituent Mandate 15 issued by the Constituent



Assembly on 23 July 2008; the LRSE enacted on 10 October 1996, together with the reforms introduced through Law 2006-55; the Public Companies Act published on 16 October 2009<sup>46</sup>; and Executive Order 220 of 14 January 2010, which created *Corporación Eléctrica del Ecuador—Empresa Pública* [public company] (CELEC EP). The regulatory framework governing rural and marginal urban electrification is based on: (i) the Rural and Marginal Urban Electrification Special Law of 29 June 1993, which created the fund FERUM; (ii) the LRSE of 1996; and (iii) Constituent Mandate 15 of 2008. FERUM is also governed, inter alia, by its Regulations of 31 July 1998, the Regulations for its Management, and the General Regulations of the LRSE of 21 November 2006. FERUM has been in operation since 1989 and is currently managed by CONELEC.

1.64. **Institutional framework of the electricity sector.** The lead agency for electricity sector policy in Ecuador is MEER. CONELEC fulfills the role of regulating and monitoring the supply of electric energy, subject to the National Development Plan and MEER's policies. The distribution and sale of energy is managed through 20 concession areas where publicly-owned distribution companies operate<sup>47</sup>.

1.65. The lead agency for energy sector policy in Ecuador is MEER, which organized in 7 undersecretaries. SEREE is one of these undersecretaries and is the responsible for the implementation of rural electrification projects with RE.

## B. PROJECT IMPLEMENTATION ARRANGEMENT:

1.66. The Execution of the GEF project will be under the responsibility of MEER, with technical support of CONELEC project team (PTT). A Coordination Unit (CU) will be located within the SEREE which will be responsible for overall coordination *vis a vis* the IDB and GEF.

1.67. CONELEC's responsibility lies on the review of the technical reports to be developed by the distribution companies and the evaluation and prioritization of the projects through CONELEC's economic methodologies. CONELEC's PTT will also be responsible for the technical supervision during the project implementation.

1.68. The distribution companies will be in charge of proposing and executing the projects to be financed by component 2 of this GEF project. The distribution companies will elaborate technical follow-up reports that will be sent to the CU via CONELEC's ETP, which will have the responsibility to review and express their technical opinion during the execution period.

1.69. In order to ensure a good coordination amongst the different stakeholders an Annual Working Plan (AWP) will be developed by the CU. The AWP will define Project' activities and costs and will have to be updated every year within the first three months. In addition, an Operating Guidelines (OG) will define the responsibilities and profiles of the each of the stakeholders participating in the project.

1.70. Additionally an Advisory Committee (AC) will be created as a mechanism to ensure inter-institutional coordination. The AC will be integrated by a representative from: (i) distribution companies involved in the project (ii) the SDCE; (iii) SEREE; (iv) CONELEC, (v) the MISCE; (vi) the IDB and if necessary (vii) SENPLADES and MEF. The AC will be chaired by SEREE and shall hold meetings twice a year.

1.71. Condition prior to first disbursement of GEF funds are as follows: (i) selection by MEER of the Project Manager (PM), in accordance to terms of reference previously agreed upon by the IDB; (ii) selection and designation by CONELEC of the technical team (PTT) for this Project (iii) the approval of the AWP and the OG by the MEER, both documents in terms previously agreed upon by the IDB. Additionally, as a

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<sup>46</sup> The LRSE defines objectives in terms of generation, transmission, and distribution of electricity. The Public Companies Act contains aspects related to the organization and management of public companies, including those that form part of strategic sectors.

<sup>47</sup> Corporación Nacional de Electricidad S.A., which is responsible for 10 of those areas, offers electricity distribution services to a total of 1.3 million subscribers and covers 36% of Ecuador's customer market. Other major companies, responsible for services for a total of 1.7 million subscribers (46% of Ecuador's customer market), include Empresa Eléctrica de Quito S.A., Unidad Eléctrica de Guayaquil, Empresa Eléctrica Regional Centro Sur S.A., Empresa Eléctrica Azogues S.A., and Empresa Eléctrica Riobamba S.A. The National Energy Control Center is responsible for managing the technical and financial transactions of the Wholesale Electricity Market.



condition prior to the disbursement of the funds of Component 2, is the issuance of one or more instructive to the distributors, regulating the implementation of the projects to be funded by the component, in terms previously agreed upon by the IDB.

1.72. Special disbursement. Once all conditions of the IDB General Norms have been met, a special disbursement of funds for an amount of US\$100.000 will be available in order to comply with the special conditions prior to first disbursement, relative to the selection of the PM and the hiring of a consultant to develop the AWP and the OG.

1.73. All goods and services, included in Component 1 and 3, financed entirely or in part with resources from the IDB will be carried out in accordance with the Procurement Plan and following the “Policies for the procurement of goods and works financed by the IDB” (Document GN-2349-9) and “Policies for selection and contracting of consultants financed by the IDB” (Document GN-2350-9). The OG will guide the execution and management of activities to be developed under Component 2 and which will be financed through an investment incentive system<sup>48</sup>.

1.74. To acknowledge the GEF as the source of funding for the Project and as required by the GEF’s Communication and Visibility Policy, the GoE agrees to include a GEF logo on all relevant project documents and publications, as equipment and vehicles financed by the Contribution. Furthermore, the GoE agrees to acknowledge the GEF as the source of funding at any Project-related public events, meetings, press conferences, press releases and related websites.

#### **PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF**

#### **PART V: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

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<sup>48</sup> The IDB will have the right to examine the assets, sites, works, and construction of the respective projects. The disbursements related to those projects financed through the investment incentive system are subject to verification that customers are actually receiving the electricity services and that projects were selected using the economic evaluation methodology.

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):**  
 (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
H.E. Marcela AGUINAGA	Minister of Environment	MINISTRY OF ENVIRONMENT	04/26/2012

**B. GEF AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Michael Collins IDB-GEF Executive Coordinator		January, 25 <sup>th</sup> 2013	Arnaldo Vieira de Carvalho		arnaldov@iadb.org

## ANNEX A: PROJECT RESULTS FRAMEWORK

Impact Indicators	Indicator	Baseline (2010)	2012	2013	2014	2015
Reduction of energy households' expenses <sup>49</sup>	% of the households experience an reduction on their overall energy expenses	0	nd	80%	nd	80%
Sustainability of Rural electrification projects improved	% of the installations functioning (once installed )	0	100%	90%	90%	90%
Financial Sustainability improved <sup>50</sup>	Delinquency rate	0	10%	10%	10%	10%
Increase of electricity coverage in rural areas	% of electricity coverage	90%	90%	90%	90%	90%

Outcome indicators	Indicator	Base (2011)	2012	2013	2014	2015	Target (2016)
<b>Objective Component 1</b>	<b>To define a management methodology and define a technical and economically sustainable project portfolio; and improve stakeholders' capacities for Operation, Maintenance (O&amp;M) and monitoring of systems;</b>						
Component 1	Indicator	Baseline (2010)	2012	2013	2014	2015	Target (2016)
Methodologies for qualification and prioritization of PV off-grid projects defined.	Methodologies for qualification and prioritization in use.	No methodologies for RE off-grid projects	One New methodology of qualification and prioritization in use	0	0	0	One New methodology of qualification and prioritization in use
Projects validated with new methodology	# of projects	0	100% of FERUM 2012-2013 projects validated with new methodology <sup>51</sup>	100% of FERUM 2014 projects validated with new methodology	100% of 2015 FERUM projects validated with new methodology	100% of 2016 FERUM projects validated with new methodology	100% of projects validated with new methodology
# of community members trained for O&M	# of community members highly trained for O&M	0	0	At least 2 community members per community highly trained for O&M <sup>52</sup>		0	At least 2 community members per community trained
# of public technicians trained for FV activities	# of technicians	0	0	At least 2 technicians per institution trained <sup>53</sup>		0	At least 2 technicians per institution trained
<b>Outputs</b>	<b>Indicator</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

<sup>49</sup> These indicators will be measured with the survey's results and therefore the information will be available only at the beginning and end of the project.

<sup>50</sup> The delinquency rate will be measured as the percentage of households that have failed to pay their fees at least once a year.

<sup>51</sup> The total number of projects to be selected and its amounts will depend on the economic and financial analysis.

<sup>52</sup> During the Management Model definition process, the number of technicians per community to be trained will be defined. Nevertheless, the number defined in the RF is considered the minimum number of persons that need to be trained for Operation and Maintenance purposes, i.e, and will received a more detail technical trained.

<sup>53</sup> The institutions involved in this training activities are (i) Distribution Company, (ii) SEREE and (iii) CONELEC.

Methodologies for qualification and prioritization (economic, financial, technical) reviewed	Methodologies for qualification and prioritization reviewed	0	Technical, economical and financial methodology reviewed	0	0	0	Technical, economical and financial methodology reviewed
Management Model defined	MM defined	0	1	0	0	0	1
Training activities defined	Training Manual	0	1 Training Manual defined	0	0	0	0
<b>Objective Component 2</b>	<b>To increase electricity access in rural and isolated areas with RE in Ecuador</b>						
<b>Component 2</b>	<b>Indicator</b>	<b>Baseline (2010)</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Target (2016)</b>
CO2 emissions reduced	Tons Co2 eq	0	55	163	246	301	766
Energy generated by RE in isolated areas	kWh/year generated with RE	0	78,840	233,399	351,824	430,664	1,094,726
<b>Outputs</b>	<b>Indicator</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Capacity installed/improved	kW installed/improved	0	60	118	90	60	328
Households in rural areas with access to electricity	# Households in rural areas with access to electricity	0	0	121	121	0	241
Households in rural areas with access to electricity improved	# Households with access to electricity improved	0	0	110	0	0	110
Schools in rural areas with access to electricity	# Schools in rural areas with access to electricity	0	100	100	100	100	400
<b>Objective Component 3</b>	<b>To increase the knowledge on the effectiveness and impact of these interventions on the populations and; to disseminate the results at local and regional level.</b>						
<b>Component 3</b>	<b>Indicator</b>	<b>Baseline (2010)</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Target (2016)</b>
Monitoring and follow-up protocols improved.	Monitoring and follow-up protocols	0	0	At least 1 report yearly per community	0	0	At least 1 report yearly per community
Qualitative and Quantitative impacts determined	IE Report	0	Data Analysis of Baseline carried out	0		Data Analysis finalized	

Results disseminated in the region	# of Events # of Publications	0 0	0 0	0 0	0 0	2 2	2 2
<b>Outputs</b>	<b>Indicator</b>	<b>Baseline (2010)</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Target (2016)</b>
Monitoring and Follow up protocols developed	Monitoring and Follow up protocols	0	1 protocol defined	0	0	0	1 protocol defined
IE Methodology defined	EI methodology	0	1 methodology defined	0	0	0	1
IE surveys	EI surveys	0	IE Baseline defined	0		Follow-up Survey carried out	1
Publications	# of publications	0	0	0	0	2	2

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Review Criteria	Questions	Secretariat Comment At CEO Endorsement(FSP)/Approval (MSP)	IDB ENE Comments
Eligibility	1.Is the participating country eligible?	FJ - 25 June, 2012: Yes, Ecuador ratified the Climate Convention in February, 1993	
	2.Has the operational focal point endorsed the project?		
Agency's Comparative Advantage	3. Is the Agency's comparative advantage for this project clearly described and supported?	FJ - 25 June, 2012: Yes	
	4. If there is a non-grant instrument in the project, is the GEF Agency capable of managing it?	FJ - 25 June, 2012: No non-grant instrument.	
	5. Does the project fit into the Agency's program and staff capacity in the country?	FJ - 25 June, 2012: Yes	
Resource Availability	6. Is the proposed Grant (including the Agency fee) within the resources available from (mark all that apply):		
	· the STAR allocation?	FJ - 25 June, 2012: Yes, The remaining CCM allocation of Ecuador is \$3.64 million.	
	· the focal area allocation?		
	· the LDCF under the principle of equitable access		
	· the SCCF (Adaptation or Technology Transfer)?		
	· Nagoya Protocol Investment Fund		
Project Consistency	7. Is the project aligned with the focal /multifocal areas/ LDCF/SCCF/NPIF results framework?	FJ - 25 June, 2012: Yes	
	8. Are the relevant GEF 5 focal/ multifocal areas/LDCF/SCCF/NPIF objectives identified?		

	9. Is the project consistent with the recipient country's national strategies and plans or reports and assessments under relevant conventions, including NPFE, NAPA, NCSA, or NAP?	FJ - 25 June, 2012: a) Please clarify the consistency of the project with the second national communication on climate change of Ecuador (2012). b) Please clarify the consistency of the project with the Technology Needs Assessment report of Ecuador.	a) See ¶ 1.12 b) See ¶ 1.12
	10. Does the proposal clearly articulate how the capacities developed, if any, will contribute to the sustainability of project outcomes?	FJ - 25 June, 2012: Yes, Local capacities developed in component 1 are set to be used in the 2 other components.	
	11. Is (are) the baseline project(s), including problem (s) that the baseline project(s) seek/s to address, sufficiently described and based on sound data and assumptions?	FJ - 25 June, 2012: No. a) Please clarify where and how the government used (is using) the 5% of \$113 million targeted to be invested in RE in rural isolated areas. Please also explain the lessons learned from this experience. b) Please clarify the level of investment in RE and RE production that would occur in rural isolated areas without the GEF funding. c) The definition of the baseline situation should be clear at CEO approval request stage and cannot be part of the activities to be funded during the project as mentioned in Part II.C.1.	a) See ¶ 1.20-1.22; ¶ 1.27-1.29 b) See ¶ 1.32 c) See ¶ 1.41
	12. Has the cost-effectiveness been sufficiently demonstrated, including the cost-effectiveness of the project design approach as compared to alternative approaches to achieve similar benefits?	FJ - 25 June, 2012: No. Please justify the use of PV as the sole RE alternative for isolated rural areas.	See ¶1.19 ;¶1.20 ¶1.21 and ¶1.22
	13. Are the activities that will be financed using GEF/LDCF/SCCF /NPIF funding based on incremental/ additional reasoning?	FJ - 25 June, 2012: Please address Q11 and Q14 to allow further assessment of this question.	

	14. Is the project framework sound and sufficiently clear?	<p>FJ - 25 June, 2012: No.</p> <p>a) Activities pertaining to analyzing the failure of existing projects not performing adequately are described in B.2 as part of the project but are not included in the project framework.</p> <p>b) Please clarify the type of incentive the project will develop to foster RE use. Please also explain how the project will ensure the sustainability of such incentive in the long run.</p> <p>c) Please clarify the type of training the project will set in place and the existing capacities it would build upon.</p> <p>d) Activities under component 2 that will be funded by MEER seem to be different and clearly separated from activities that will be funded by the GEF. Apparently the latter would be devoted to building new electrification systems with a clear RE objective while the former would deal with existing out-of-service systems with no specific RE objectives. In that case, one would consider that there are two distinct projects with only the latter being relevant to the GEF. Please clarify.</p> <p>e) The description of component 2 mentions an existing IDB-MEER methodology while component is supposed to design one. Please clarify.</p> <p>f) Please describe the type of investment and their number under component 2.</p> <p>g) For component 3 please insert a specific row for result dissemination activities (since the budget for Monitoring &amp; Evaluation activities should be clearly identified).</p>	<p>a) See new Project Framework</p> <p>b) See ¶ 1.23</p> <p>c) See ¶ 1.26 &amp; ¶ 1.38</p> <p>d) See ¶ 1.39</p> <p>e) See ¶ 1.25 &amp; ¶ 1.26 &amp; ¶ 1.38</p> <p>f) See ¶ 1.39</p> <p>g) See ¶ 1.41</p>
	15. Are the applied methodology and assumptions for the description of the incremental/additional benefits sound and appropriate?	<p>FJ - 25 June, 2012:</p> <p>a) Please provide, for further assessment, details and justifications on the assumptions made to assess the global environmental benefits of the project.</p> <p>b) Please also justify the number of persons targeted by the project, and the level of investment that the project will enable.</p>	<p>a) See ¶ 1.42</p> <p>b) See ¶ 1.39 and ¶ 1.42</p>
	16. Is there a clear description of: a) the socio-economic benefits, including gender dimensions, to be delivered by the project, and b) how will the delivery of such benefits support the achievement of incremental/additional benefits?	<p>FJ - 25 June, 2012: Please clarify how the project may lead to reducing rural families' energy expenses.</p>	<p>See ¶ 1.44 &amp; ¶ 1.45</p>
	17. Is public participation, including CSOs and indigenous people, taken into consideration, their role identified and addressed properly?	<p>FJ - 25 June, 2012: The communities and families involvement in the project seems limited to the expression of their willingness to access electrical services without any involvement comparable to the one proposed for the distribution companies. Please justify.</p>	<p>See ¶ 1.49</p>



Project Design	18. Does the project take into account potential major risks, including the consequences of climate change and provides sufficient risk mitigation measures? (i.e., climate resilience)	FJ - 25 June, 2012: a) The risk table mentions social impact analyses that are not mentioned in the project framework. Please clarify. b) Please explain how the project may ensure the sustainability of the backstopping function used to avoid poor project design since the project will delegate this function to an international consultant.	a) See B.4 & ¶1.38 (iv) b) See B.4 (2)
	19. Is the project consistent and properly coordinated with other related initiatives in the country or in the region?	FJ - 25 June, 2012: Please address Q14 to allow for further assessment on this question.	
	20. Is the project implementation/ execution arrangement adequate?	FJ - 25 June, 2012: a) Please clarify the terms designed by the IDB to define conditions for the disbursement of component 2 funds. b) Please also clarify the nature and source of the special disbursement mentioned in part III-B. c) Please describe how the project will ensure the visibility of GEF support to the project.	a) See ¶ 1.70-1.71 b) See ¶ 1.70-1.71 c) See ¶ 1.73
	21. Is the project structure sufficiently close to what was presented at PIF, with clear justifications for changes?	FJ - 25 June, 2012: n.a.	
	22. If there is a non-grant instrument in the project, is there a reasonable calendar of reflows included?	FJ - 25 June, 2012: There is no nongrant instrument.	
	23. Is funding level for project management cost appropriate?	FJ - 25 June, 2012: No. The cofinancing ratio of project management cost is too low (1:0.9) compared to the project co-financing. Please increase the co-financing level or reduce the GEF amount for these costs.	The co-financing for project management costs has been increased
	24. Is the funding and co-financing per objective appropriate and adequate to achieve the expected outcomes and outputs?	FJ - 25 June, 2012: Please address the inconsistency between figures presented in Part I table E and figures presented in Annex C.	Please see new figures in Part I table E and Annex C
	25. At PIF: comment on the indicated cofinancing;	FJ - 25 June, 2012: The co-financing ratio is 1:4.6. a) In table C, the co-financing line of \$3 million should be labeled as Cash and not In-Kind, in line with the cofinancing letter provided. Please modify.	a) The label was updated to "Grant" since the formula

Project Financing	At CEO endorsement: indicate if confirmed co-financing is provided.	<p>b) Please clarify why IDB's project EC-L1087 contributes for \$450,000 of co-financing while the EC-L1087 project involves \$40 million of IDB financing. Please also provide documents to confirm this co-financing amount.</p> <p>c) Please clarify the exact role, within the GEF project, of the UEP EC-L1087 project local staff since this EC-L1087 project appears (page 10) to be devoted to peri-urban areas different from the isolated rural areas targeted by the proposed GEF project.</p> <p>d) Please clarify the inconsistency between the MEER co-financing letter (mentioning 500 schools to be served by the program) and the result framework of Annex A (mentioning only 250 schools).</p>	<p>does not give the "Cash" option.</p> <p>b) See ¶ 1.21 &amp; 1.25 &amp; 1.26</p> <p>c) See ¶ 1.26 &amp; ¶ 1.57</p> <p>d) See ¶ 1.39 and footnote 32 ad 33</p>
	26. Is the co-financing amount that the Agency is bringing to the project in line with its role?	FJ - 25 June, 2012: Please address Q25 to allow further assessment of this question.	
Project Monitoring and Evaluation	27. Have the appropriate Tracking Tools been included with information for all relevant indicators, as applicable?	FJ - 25 June, 2012: Please address Q15 to allow further assessment of this question.	
	28. Does the proposal include a budgeted M&E Plan that monitors and measures results with indicators and targets?	<p>a) Please clarify how the project will assess the quality of life of the beneficiaries and its improvement.</p> <p>b) please justify why the target for projects validated with new methodology is in % and not in number of projects, and why there would be no more projects validated with the new methodology after year 1.</p> <p>c) Please justify why the indicator for improved methodologies is the number of methodologies.</p> <p>d) Please clarify what is meant by "community" when referring to the number of persons trained per community and justify why 2 trained members and 2 trained technicians would be sufficient per community.</p> <p>e) Please address Q11 to allow for further review of this question.</p>	<p>a) See ¶ 1.49 and Project Framework</p> <p>b) See Project Framework and Footnote 51 of Annex A</p> <p>c) See new indicator in Annex A</p> <p>d) See footnote 52 of Annex A</p>
	29. Has the Agency responded adequately to comments from:	FJ - 25 June, 2012: n.a.	
Agency Responses	· STAP?		
	· Convention Secretariat?		
	· Council comments?		
	· Other GEF Agencies?		
Secretariat Recommendation			
	<b>30. Is PIF clearance/approval being recommended?</b>		

Recommendation at PIF Stage	31. Items to consider at CEO endorsement/approval.		
Recommendation at CEO Endorsement/Approval	32. At endorsement/approval, did Agency include the progress of PPG with clear information of commitment status of the PPG?	FJ - 25 June, 2012: n.a.	
	<b>33. Is CEO endorsement/approval being recommended?</b>	FJ - 25 June, 2012: No. Please address comments above. Before any further development, this proposal should be discussed with the GEF Secretariat.	
Review Date (s)	First review*		
	Additional review (as necessary)		
	Additional review (as necessary)		

**ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT USING GEF/LDCF/SCCF RESOURCES**

<i>Position Titles</i>	<i>\$/ Person Week*</i>	<i>Estimated Person Weeks**</i>	<i>Tasks To Be Performed</i>
<b>For Project Management</b>			
Local			
Project Manager	400	208	<ul style="list-style-type: none"> <li>- Overall responsible for follow up of all project activities. Prepare Follow-up reports for IDB and GEF.</li> <li>-Coordinate overall project execution amongst all stakeholders.</li> <li>- Technical responsibility of all studies and publications.</li> <li>-Support the preparation of all procurement process.</li> <li>-Prepare ToR for hiring consultancies and/or consultants.</li> <li>- Supervise all technical decisions and supervise installation and follow-up of equipments.</li> <li>- Coordinate stakeholders meetings and Advisor Committee meetings. Prepare and share minutes of AC meetings.</li> <li>- Overall coordination of IE activities in close coordination with IDB team.</li> <li>- Prepare and carry out dissemination activities.</li> </ul>
International			
Justification for travel, if any: The locations of the projects are in isolated and remote areas. In order to carry out the Project effectively and achieve the objectives it will be necessary to travel at least 3 times to each location. Travel expenses and per diem are not included in consultant salaries			
<b>For Technical Assistance</b>			
Local			
Senior Solar Engineer and Rural Electrification Specialist	1200	52	<ul style="list-style-type: none"> <li>- Definition of a MM including the definition of the technology options, costs and manintenance requirement.</li> <li>- Analysis of ex-ante and ex-post demand at household level.</li> <li>- Review and/or development of pre-feasibility and feasibility studies for new and/or improved PV systems</li> <li>- Support in coordination with the PM,</li> </ul>

			<p>ToR for procurement of installations. Supervision of bidding process.</p> <ul style="list-style-type: none"> <li>- Installation of RE systems as well as definition of an adequate monitoring systems.</li> <li>- Assessment of previous studies and the ex-post situation of previous projects .</li> <li>- Analysis of ex-post data and assessment of ex-ante and ex-post performance of the equipments. (new and old installations)</li> </ul>
Rural Development Specialist	1200	25	<ul style="list-style-type: none"> <li>-Support the definition of an adequate MM.</li> <li>- Support the definition and assessment of the rural impacts of the project (Impact Evaluation Methodology)</li> <li>-Assess previous rural electrification management experiences.</li> <li>-Identification and definition of all training activities to be included in the new MM</li> <li>-Prepare training material for local public technicians and communities's training activities.</li> <li>-Moderate training sessions</li> </ul>
Legal and regulatory specialist	1200	16	<ul style="list-style-type: none"> <li>- Review of all existing local regulations.</li> <li>- Review of international regulations and experiences</li> <li>- Prepare recommendations for new regulations (draft new regulations)</li> <li>-Prepare new standards and norms for RE projects.</li> </ul>
International			
Senior Solar Engineer	2500	20	<ul style="list-style-type: none"> <li>- Support the preparation of a MM.</li> <li>- Backstopping of all technical feasibility studies developed or to be developed locally.</li> <li>-Support the preparation of new technical documentation and the preparation of Terms of Reference (ToR) for procurement of new installations and monitoring systems.</li> <li>-Support the assessment of the qualification of biddings and follow up the implementation of projects.</li> <li>- Prepare and carried out training sessions on PV design, implementation and M&amp;O of RE systems.</li> </ul>

Justification for travel, if any: The locations of the projects are in isolated and remote areas. In order to carry out this project effectively and achieve the objectives it will be necessary to travel at least 3 times to each location. Travel expenses and per diem are not included in consultant salaries.			

\* Provide dollar rate per person week.    \*\* Total person weeks needed to carry out the tasks.

**ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS**

A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.

B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:

<i><b>Project Preparation Activities Approved</b></i>	<i><b>Implementation Status</b></i>	<i><b>GEF/LDCF/SCCF Amount (\$)</b></i>				<i><b>Cofinancing (\$)</b></i>
		<i><b>Amount Approved</b></i>	<i><b>Amount Spent To date</b></i>	<i><b>Amount Committed</b></i>	<i><b>Uncommitted Amount*</b></i>	
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
<b>Total</b>		0	0	0	0	0

\* Any uncommitted amounts should be returned to the GEF Trust Fund. This is not a physical transfer of money, but achieved through reporting and netting out from disbursement request to Trustee. Please indicate expected date of refund transaction to Trustee.

**ANNEX E: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Fund or to your Agency (and/or revolving fund that will be set up)