

Cover Page for Project/Program Approval Request			
1. Country/Region:	Honduras	2. CIF Project ID#:	To be assigned by CIF AU
3. Source of Funding:	<input type="checkbox"/> FIP	<input type="checkbox"/> PPCR	<input checked="" type="checkbox"/> SREP
4. Project/Program Title:	ERUS Universal Energy Access Program (PAUE)		
5. Type of CIF Investment:	<input checked="" type="checkbox"/> Public	<input type="checkbox"/> Private	<input type="checkbox"/> Mixed
6. Funding Request in million USD equivalent:	<i>Grant:</i> 6.551	<i>Non-Grant:</i> 0	
7. Implementing MDB(s):	Inter-American Development Bank (IDB)		
8. National Implementing Agency:	Empresa Nacional de Energía Eléctrica (ENEE)		
9. MDB Focal Point and Project/Program Task Team Leader (TTL):	<i>Headquarters- Focal Point:</i> Claudio Alatorre (calatorre@iadb.org)	<i>TTL:</i> Carlos Jácome (carlosja@iadb.org)	
10. Project/Program Description (including objectives and expected outcomes):			
<p>Fit with the Investment Plan of Honduras:</p> <p>The original SREP Investment Plan (IP) for Honduras, approved by the SREP Sub-Committee on November 4th, 2011, included the Sustainable Rural Energization (<i>Energización Rural Sostenible</i>, ERUS) Component, with a total resource allocation of USD10.2 million. This component is divided in two subcomponents: (i) rural electrification; and (ii) clean cook-stoves.</p> <p>The Revised SREP Investment Plan for Honduras, approved by the SREP Sub-Committee on April 28th, 2017, proposed a new approach for the rural electrification subcomponent, introducing a Universal Energy Access Program (PAUE), which would build on the institutional platform offered by the Social Fund for Electric Power Development (FOSODE), maintaining the original SREP resource allocation for the ERUS component of the IP (a total of USD10.2 million).</p> <p>The ERUS-PAUE project appears on the Revised IP with a budget of USD 7.481 million. However, due to the limited resource availability, the amount has been reduced to USD 6.551 million. If further resources become available, the IDB and the Government of Honduras may request the additional resources (USD 0.93 million).</p> <p>PAUE includes two IDB projects:</p> <ol style="list-style-type: none"> 1. Program for Electrification in Isolated Areas (USD 6.42 million) 2. Support for the Use of Climate Finance Instruments for Low-Carbon Cook-stoves (USD 131,000) <p>In the Revised IP Document, the Program for Electrification in Isolated Areas is divided into two components: “Isla Verde” (targeting the Bay Islands), and “Energy Access” (targeting the Mosquitia and the Dry Corridor regions). However, given the similarities of the Isla Verde and the Mosquitia projects (both supporting existing mini-grids), they have been merged in this proposal into a single subcomponent. Furthermore, this project considers setting aside resources to support management capabilities, and to carry out administration and evaluation activities.</p>			

Program Description:

The general objective of the program is to support the development of rural areas of the country, primarily coastal areas and islands, through the implementation of decentralized renewable energy generation projects distributed via micro-grids. The specific aims are: (i) to provide access to electricity for the underserved population; (ii) to reduce the costs of electricity to locations with electricity supply based on micro-grids using diesel generation; and (iii) to develop institutional capabilities in the sector for the design, construction, operation and maintenance of these projects.

Component 1. Development of electricity generation systems in rural off-grid areas (USD 5.73 million). Generation systems with renewable energy distributed with micro-grids will be financed in Brus Laguna (Mosquitia region) and Guanaja (Bay Islands) for USD 5.3 million; and domestic photo-voltaic systems in El Corpus and Concepción de María (Dry Corridor region) for USD 0.43 million. The Guanaja micro-grid will be built on private land¹ and the Brus Laguna project will be built on municipal land². The activities include final design, construction and supervision of the projects. For the preparation of tender documents and final designs for the micro-grids in Brus Laguna and Guanaja, the results from the IDB's HO-X1030³ technical cooperation activity and the Experience Exchange program–KSP⁴ will be taken into consideration.

Component 2. Strengthening of management capabilities (USD 0.43 million). Specialized consultations, workshops and training and experience exchange programs will be undertaken to ensure the adoption of management models conducive to financial and operational sustainability of the isolated electrification systems. Activities will be aimed at: (i) encouraging community participation, particularly women, in the construction, operation and maintenance of the projects; (ii) identifying and promoting participation from private firms in energy distribution and commercialization; and (iii) strengthening the operational and financial capacity of FOSODE for management and development of rural electrification through the design, construction and supervision of micro-grids. The project will finance the provision of specialized tools for the design, supervision and evaluation of experiences of rural electrification, and training in local languages.

Administration and evaluation (USD 0.26 million). Contracting of consultancies for the development of supervisory, evaluation and auditing activities for the program will be financed.

Key results of the project: Achievement of the program's objectives will be measured based on the indicators and targets in the Program's Matrix of Results. Anticipated project results are: (i) electricity supply to 4,204 new homes; (ii) reduction in the costs of electricity production to levels that allow competitive socio-economic development in the participating areas; (iii) creation of employment, encouraging gender equality and the involvement of the private sector; (iv) capacities in ENEE for the development of micro-grids and replication in other areas on a national scale.

¹ The owner's legal possession has been confirmed.

² The land will be granted by the Mayor's Office through a transfer adjudication by the Town Council.

³ Renewable resource assessment in the Bay Islands (technical cooperation activity).

11. Consistency with SREP Investment Criteria:	
(a) Increased installed capacity from renewable energy sources	The rural mini-grid generation component will finance a renewable energy (RE) capacity of 1.20 MW based on solar generation; and 0.50MW of individual solutions with solar panels.
(b) Increased access to energy through renewable energy sources	The Energy Access subcomponent will provide access to at least 4,115 households.
(c) Low Emission Development	The Nationally-Determined Contribution (NDC) of Honduras to the UNFCCC includes the energy sector as part of its mitigation objectives.
(d) Affordability and competitiveness of renewable sources:	Solar-based system micro-grid systems for electrification of remote communities is a solution implemented in several places in the region. Its main advantage is the concentration of generation, operation and maintenance in one location, facilitating technical and financial sustainability of the projects. Micro-grids combine photo-voltaic generation, energy storage, conversion and control of energy distribution through local distribution networks. The ongoing reduction in costs of photo-voltaic and energy storage technologies ⁵ , increasingly makes them cost-competitive with thermal generation from diesel combustion generators ⁶ .
(e) Productive use of energy	Access to reliable energy will enable the communities in Brus Laguna and in Guanaja to increase the value-added of their productive activities, thanks to the ability to use refrigeration and crop processing.
(f) Economic, social and environmental development impact	Based on the knowledge available and the experience in many countries worldwide on the benefits of access to electricity, a positive economic impact is expected in the communities to be benefitted: employment, productive activity, access to health services and education are the main sources of socio-economic improvement expected.
(g) Economic and financial viability	Options to increase access to electricity in the communities prioritized were assessed based on cost-effectiveness analysis of different possible optional solutions available. These options included extension of the existing electricity grid, diesel-based thermal generation and solar energy. The analysis verified the mini-grid model to be the best option in terms of relative costs for achieving the expected results.
(h) Leveraging of additional resources	See below (section 15)

⁴ Through the KSP program, feasibility studies are being done for the use of renewable energy with energy storage systems on Guanaja Island.

⁵ BSW-Solar PV Price Index

⁶ *Grid Revolution with Distributed Generation and Energy Storage* and Parity Report on photo-voltaic systems and energy storage by the National University of Seoul.

(i) Gender	See below (section 13)	
(j) Co-benefits of renewable energy scale-up	See paragraphs above	
12. Stakeholder engagement:		
<p>An analysis mission was conducted with a visit to Guanaja Island by the IDB Safeguards Unit and by the team leader. Public consultations were also held on this site, containing stipulations of the indigenous peoples’ policy, so that the remaining consultations are made accordingly prior to Board approval on the other sites. Project activities include identifying and incentivizing participation from private firms in energy distribution and commercialization</p>		
13. Gender considerations:		
<p>A women’s participation strategy will be developed as part of the activities under the program, in order to train women in construction, operation and supervision of the electricity generation projects in isolated areas.</p> <p>For the preparation of final designs, construction and commissioning of micro-grids and individual systems, the executor will organize international bids for tender in accordance with the Bank’s procurement policies. The executing agency will contract specialized operators for management, operation and maintenance of the micro-grids, and distribution and commercialization, as mandated by the legal framework (LGIE), and by Component 2 results. For the O&M of the domestic photo-voltaic systems the executing agency will contract local firms with a significant participation of women.</p>		
14. Indicators and Targets (consistent with results framework):		
	Core Indicator	Target
(a)	GHG emissions reduced or avoided over lifetime (tons of CO ₂ -eq)	56,000 ⁷
(b)	Annual GHG emissions reduced or avoided (tons of CO ₂ -eq/year)	2,800 ⁸
(c)	Capacity of renewable energy (MW)	1.7
(d)	Increased supply of renewable energy (MWh/year)	3,700
(e)	Increased Access to Modern Energy Services (households)	4,115
	(Women)	10,150
	(Men)	10,150
<i>Development Indicator(s):</i>		
(a)	Reduced total household expenditure on electricity in mini-grid projects	TBD based on Component 2 studies
(b)	Reduced total household expenditure on electricity in individual solutions projects	
15. Co-Financing:		
	<i>Amount (in USD million):</i>	<i>Type of contribution:</i>
• Government		
• MDB (IDB)	0.600	grant
• Private Sector (please specify)		
• Bilateral (please specify)		
• Others	1.000	Contribution by beneficiaries

⁷ Assumes a lifetime of 20 years.

⁸ GHG emissions reductions assuming 25% of plant capacity factor, and an emission factor of 0.75 kgCO₂e/year

Co-Financing Total:	4.600
16. Expected Board approval date:	
September 2017	

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Support for the Use of Climate Finance Instruments for Low-Carbon Cook-stoves

INTER-AMERICAN DEVELOPMENT BANK DOCUMENT

HONDURAS

PROGRAM FOR ELECTRIFICATION IN ISOLATED AREAS

(HO-G1247)

PROPOSAL FOR OPERATION DEVELOPMENT

This document was prepared by the project team consisting of: Carlos Jácome (ENE/CHO) Team Leader; Roberto Aiello (INE/ENE) Alternate Team Leader; Sylvia Larrea, Wilkferg Vanegas; Stephanie Suber, Rodrigo Aragón (INE/ENE); Claudio Alatorre (CSD/CCS); (INE/ENE); Cristina Landazuri-Levey (LEG/SGO); Andrea Monge (INE/INE); Roberto Leal (VPS/ESG); Nadia Rouschert (FMP/CHO); Maria Cecilia del Puerto (FMP/CHO); Astrid Mejía (RND/CHO).

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- Annex III Safeguard Policy Filter (SPF) and Safeguards Screening Forms (SSF)
- Annex IV Environmental and Social Management Report (ESMR)

Other Annexes available upon request (most of them in Spanish)

1. Agreements and Fiduciary Requirements
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ABBREVIATIONS	
ACE	Análisis Costo-Efectividad [Cost/Effectiveness Analysis]
ALC	América Latina y el Caribe [Latin America and the Caribbean countries]
IDB	Inter-American Development Bank
CEPAL	Comisión Económica para América Latina y el Caribe [Latin America and the Caribbean countries Economic Commission]
CIF	<i>Climate Investment Fund</i>
CREE	Comisión Reguladora de Energía Eléctrica [Electric Energy Regulatory Commission]
TC	Technical Cooperation
EE	Energy Efficiency
ENEE	Empresa Nacional de Energía Eléctrica [National Electrical Energy Company]
ER	Energía Renovable [Renewable Energy]
ERNOC	Energía Renovable No Convencional [Non-Conventional Renewable Energy]
ERUS	Energización Rural Sostenible [Sustainable Rural Energization]
FHIS	Fondo Hondureño de Inversión Social [Honduran Social Investment Fund]
FOMIN	Fondo Multilateral de Inversiones [Multilateral Investment Fund]
FOSODE	Fondo Social de Desarrollo Eléctrico [Social Fund for Electricity Development]
ESMR	Environmental and Social Management Report
LGIE	Ley General de la Industria Eléctrica [Electricity Industry General Act]
MOP	Manual Operativo del Programa [Program Operation Manual]
O&M	Operation and Maintenance
AP	Acquisition Plan
ESMP	Environmental and Social Management Plan
PIR	Programa de Infraestructura Rural [Rural Infrastructure Program]
UNDP	United Nations Development Program
AOP	Annual Operational Plan
POD	Proposal for Operation Development
SE4All	<i>Sustainable Energy For All</i>
SIN	Sistema Interconectado Nacional [National Grid]
SPF	Safeguard Policy Filter
SREP	<i>Scaling Up Renewable Energy Program (Program to Promote Renewable Strategies in Low-Income Countries)</i>
SSF	Safeguard Screening Form
PCU	Project Coordinating Unit

**PROJECT SUMMARY
HONDURAS
ELECTRIFICATION ISOLATED AREAS PROGRAM
(HO-G1247)**

Financial Terms and Conditions			
Beneficiary Country: Honduras		Donation Resources	
Executing Body: National Electrical Energy Company (ENEE)		Outlay period:	3 years
Source	Amount (US\$)	%	Approval currency: US Dollars
IDB (Climate Investment Fund, CIF) ^(a)	6,420,000	100	
Total:	6,420,000	100	
Project Outline			
<p>Project aim/description: The program's general objective is to support the development of the country's rural zones, mainly coastal and island areas, through the implementation of projects relating to decentralized renewable energy generation that is distributed around micro-grids. The specific objectives are: (i) provide access to electricity for those communities which do not have the service; (ii) reduce the cost of electricity to those communities whose power supply is based on micro-networks with diesel generation; and (iii) develop institutional capacity within the sector for the design, construction, operation and maintenance of these projects.</p>			
<p>Special contractual conditions prior to the first financing outlay: the Executing Agency (EA) must present, to the Bank's satisfaction, evidence of compliance with the following conditions: (i) that there is in force an agreement between the Beneficiary Country represented by the Secretary of State in the Finance Office and the ENEE, for the transfer of resources and program execution obligations; (3.1); (ii) the approval and implementation of the Program Operations Manual, agreed with the Bank (3.5).</p>			
<p>Special contractual conditions for execution: Special conditions of execution will be that: (i) the ENEE complies with the environmental and social obligations set out in detail in the Environmental and Social Management Report, and implements the actions as specified in the Social and Environmental Management Plan, according to the deadlines stipulated therein; (ii) the ENEE presents to the Bank evidence of acquisition of the land, prior to awarding the construction contract and to the starting-up of the micro-grid projects; and (iii) previous to execution of Component 1, the Electric Energy Regulatory Commission (CREE) approves the tariff structure for renewable energy-based isolated systems (¶2.11).</p>			
Bank policy exceptions: None			
Strategic Alignment			
Challenges^(b):	SI <input checked="" type="checkbox"/>	PI <input checked="" type="checkbox"/>	EI <input type="checkbox"/>
Transversal Issues^(c):	GD <input checked="" type="checkbox"/>	CC <input checked="" type="checkbox"/>	IC <input type="checkbox"/>

^(a) Program to Promote Renewable Strategies in Low-Income Countries (SREP). These resources will be provided on a non-refundable basis."

^(b) SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration)

^(c) GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION OF THE PROJECT AND MONITORING OF RESULTS

A. Precedents, Potential Problems and Justification

- 1.1 The Sustainable Energy for All initiative (SE4ALL) is a multi-sector alliance between governments, the private sector and civil society. This initiative, set in motion by the Secretary General of the United Nations in 2011, sets goals to be met by 2030: (i) guarantee universal access to modern energy services¹; (ii) double the ratio of Renewable Energy sources (ER) in the global energy matrix; (iii) double the global rate of Energy Efficiency (EE) improvements.
- 1.2 Latin America and the Caribbean countries (ALC) are close to achieving universal access to electricity. According to data from the Latin American Energy Organization, in 2015 ALC had 97% coverage - only 3% of the population had no electricity supply. This small percentage, however, represents 23 million people, mainly concentrated in eight countries. Honduras is one of this group of countries.
- 1.3 In the Central America region, there have been important advances in access to energy. According to electricity statistics from the Latin America and the Caribbean countries Economic Commission (CEPAL), the rates of electrification in the countries in this region were: Costa Rica 99.3%; El Salvador 95.4%; Guatemala 92%; Honduras 74%; Nicaragua 81,6%; Panama 93.9%; and the Dominican Republic 98%.
- 1.4 Through the Central American Integration System, in keeping with the goals of the SE4ALL initiative, a Central American Sustainable Energy Strategy 2020 has been formulated, with the basic aim of ensuring the Central American energy supply, in terms of quality, quantity and diversity of sources, which is necessary to guarantee sustainable development, keeping in mind social equity, economic growth, governability and compatibility with the environment, in accordance with environmental commitments. This strategy is based on five major components: (i) access to energy by the poorest segments of the population; (ii) rational use and energy-efficiency; (iii) renewable energy sources; (iv) biofuels for transport; and (v) climate change.
- 1.5 **Electricity coverage in Honduras.** The significant progress made in the region is the product of energy policies designed to increase access to electricity. Nevertheless, in Honduras, until mid-2015 a coverage figure of 93% was wrongly reported, due to outdated information used in the coverage calculation by the Planning Department of the National Electrical Energy Company (ENEE). When the 2013 Population and Housing Census data was published, ENEE updated the information and could determine that electricity coverage for the country was actually 74%². In the latest coverage report from the United Nations Development

¹ It forms part of the UN Sustainable Development Goals. Modern energy services include the supply of electricity and clean cooking fuels (not solids like coal and wood).

² The calculation methodology counts systems with access to the grid or which connect in a similar way. It does not include stand-alone systems fed by independent generators. If these were included, coverage would reach 81%.

- Program (UNDP)³, Honduras comes in as the country with the second-lowest electricity coverage in the region and fourth in the most use of wood for cooking⁴.
- 1.6 The national coverage rate of 74% in 2015⁵ involves a strong regional disparity. The rural population of the country, estimated to be 46%, has an average coverage rate of 64.4%, against 81.3% in urban areas. Both the latest census and the ENEE's coverage reports report Santa Bárbara, Lempira, La Paz, Choluteca, Olancho and Gracias a Dios, as the Departments with the lowest electricity coverage, which concentrate population with high levels of poverty and immigration⁶. Of these Departments, the one with the lowest coverage is Gracias a Dios, which is part of La Mosquitia⁷, with 45% coverage, totally supplied by isolated systems. The Departments of Santa Bárbara, Lempira, La Paz, Choluteca and Olancho have coverage levels between 50% and 70%.
 - 1.7 At least 62,000 customers are reported to be connected to the National Grid (SIN), mainly located in urban areas, but not registered in the ENEE billing system. The inclusion of these customers would raise the coverage rate calculation to 77% nationally. The ENEE estimates that to reach universal coverage, it would be necessary to invest approximately US\$712.5 million, considering an annual growth rate of 4%.
 - 1.8 The 2013 Census records the use of different energy supply options for home lighting, in addition to public or private electricity supply, as: candle (6,2%), oil or paraffin lamps (8%), pinewood (5,1%), own generator (0,3%), and solar panels (1,6%). When grid electricity is considered, both public and private, together with self-generation (solar panel or generator), a figure of 79% is reached for access to electricity at the national level.
 - 1.9 The efforts made in the country to increase electricity coverage have mainly been associated with grid extension projects. In the last 10 years' investments totaling US\$130 million have been approved for rural electrification projects⁸, mainly through grid extensions⁹. However, these grid extension programs have been carried out without the corresponding transmission investments, due to the weak financial situation of the ENEE. This significant shortfall in investment in transmission is estimated to exceed 2% of Gross Domestic Product. The lack of

³ Rivas Salvador, Analysis of the access to energy situation in Latin America. UNDP Regional Center for Latin America, July 2016.

⁴ According to 2013 Population and Housing Census data, at national level the use of wood for cooking is 55% of homes, 89% in rural areas.

⁵ Applying results from the 2013 Census, the ENEE updated its coverage figures in the [2015 coverage report](#). This does not include domestic customers connected informally to the SIN. In order to plan the electrification correctly the ENEE continues to revise its calculation methods, reducing inconsistencies with official socio-economic data on a national level. To support the Government in the defining of a standardized coverage calculation method and in the updating of the customer database, which is done by the operator the Honduras Electricity Consortium, under the mandate of loss reduction, with responsibility for formalizing the connection of illegally connected consumers through the installation of electricity meters, the Bank will finance, with technical cooperation from the Universal Access to Electricity Plan (HO-T1214), an update to the basic line, the preparation of standardized calculation methodology and support for expansion planning.

⁶ Some municipalities in the Departments form part of the territories prioritized in the Northern Triangle Alliance for Prosperity Plan.

⁷ La Mosquitia is the second largest tropical forest in the Americas, topped only by Amazonia.

⁸ The organizations who have financed the projects include, in order of participation, CABEL, *Korean Exim Bank* and the IDB. The CABEL and IABD loans have been destined for grid extension projects and that of the *Korean Exim Bank* for electricity generation projects with ER in the west.

⁹ Increase in coverage at the expense of of service quality.

- an adequate grid expansion plan has in turn brought about an increase in the percentage of technical losses on the national grid (SIN)¹⁰.
- 1.10 According to ENEE statistics, electricity coverage in Honduras has evolved progressively over the last 30 years registering 30,9% in 1985 and reaching 45% in 1995 as a result of the El Cajón hydroelectric power station coming on line, and the expansion of the transmission system. In 2005, it increased to 66% and in 2015 to 74%. Up to 2015, coverage levels reported were of 93% (¶1.5), meaning that the extent of hierarchization of the coverage problem was not significant. However, the figures from the 2013 Census brought to light a serious problem that needed to be prioritized in the country's public policy agenda¹¹.
- 1.11 **Structure of the electricity market.** The ENEE is the major player in the Honduran electricity market. It is a public company, owning almost the whole of the transmission and distribution systems and 19% of the installed power generation capability. The ENEE covers approximately 94% of the domestic and commercial consumers currently supplied by electricity, while the remaining 6% are served by municipal and private concerns. Within the framework of the General Electricity Industry Law (LGIE) passed in 2014, the ENEE is responsible for administering the Social Fund for Electricity Development (FOSODE), aimed at financing electrification studies and works that are in the public interest. Prior to the enactment of this law, rural electrification projects through network expansion were carried out in the ENEE structure, now FOSODE. It also supervised construction projects for rural electrification with renewable generation systems, such as solar and mini-hydroelectric, executed by the Honduran Social Investment Fund (FHIS) as part of its Rural Infrastructure Program (PIR), financed by the World Bank.
- 1.12 **Selection of beneficiary sites.** Based on socio-economic criteria (¶1.27), such as poverty levels, access to electricity and costs of energy supply, municipalities in the Departments of Gracias a Dios, Islas de la Bahía and Choluteca were selected for the execution of the program. The Gracias a Dios Department registers the highest levels of poverty and conditions of vulnerability in Honduras; it is thought that over 69% of the population live below the poverty line and 40% in extreme poverty¹², it occupies the penultimate position in the classification of the 18 Departments in the Human Development Index and has serious public safety problems. According to the 2013 Census, the population of the Department was 94,450, split between the municipalities of Puerto Lempira (47,528), Brus Laguna (12,719), Awás (3,979), Villeda Morales (10,313), and Wampusirpi (5,746).
- 1.13 Gracias a Dios is the second largest Department in the country, dominated by jungle habitats, accessible only by air. The main economic activities are agriculture, fishing, public administration and trade. Reported coverage is 45,2%, supplied in its entirety by stand-alone systems. It has ethnic diversity, notably the Miskitos and Petch groups. The region has an ecological heritage made up of tropical eco-systems, with extensive grasslands, valleys and plains, large rivers,

¹⁰ At present, total electricity loss in the country is 32%.

¹¹ The 2010-2014 Government Plan stated that electricity coverage at national level in 2014 should be over 90%. For 2014, with the information available, the ENEE study reported 92% coverage.

¹² According to the updated poverty map.

- a very biologically diverse lagoon system, and an intricate network of marshlands.
- 1.14 Due to its level of geographical isolation there is a high requirement for the provision of public services. Specifically, in Brus Laguna, with a mainly Miskito population, 98%. There are no public or private electricity supply companies. Energy production is at the domestic level with generators powered by petroleum-based products. Access to Brus Laguna from Puerto Lempira is by river (2 hours), the main town in the Department and the only one with electricity supplied by private companies, priced for sale to the domestic consumer at US¢65/kWh¹³, higher than the national average of US¢14/kWh. Because of the difficult economic conditions, a large part of the population has no access to the service, which restricts social development and productive activities like fishing¹⁴.
- 1.15 Islas de la Bahía is the area of the country with the second-highest electricity prices. The average price from the companies who supply electricity varies between US¢40/kWh and US¢50/kWh¹⁵. These Islands are the country's principal tourist attraction due to their rich land ecosystem and even more important marine ecosystem, forming part of the second largest coral reef in the world. It has a total population of 43,575 and according to the 2013 Census, is the area with the highest demographic growth at the national level, the result of better work opportunities and improved security. High costs and electricity supply quality are affecting tourist development in the Islands according to the Honduran tourism market diagnostic report¹⁶; they affect basic services like the drinking water supply and sewage treatment, which require energy for processing. High energy costs for purification and sewage treatment are being faced by municipalities who have reduced or suspended operations in their treatment plants, with a direct repercussion on the population, bodies of water and the coral reef - the main tourist attraction of Islas de la Bahía.
- 1.16 Guanaja Island is the second most densely populated island in Islas de la Bahía, with 5,445 inhabitants, of which 63% are black English speakers. A large part of the population, with limited financial incomes, is concentrated in Bonaca Cay. Guanaja has 79% electricity coverage. The main economic activity on the island is fishing, followed by trade, construction and finally tourism. It is the island with the least tourism, but a high potential level of development due to its scenery and availability of natural resources. The island was seriously affected by hurricane Mitch, which depressed its economic development. Guanaja is the only island with freshwater sources, but it has serious problems with distribution as well as with sewage treatment, because of high energy costs. The island reports high electricity supply costs and has a private operator producing electricity from diesel generators, with a contract to operate that ends in early 2018¹⁷.

¹³ In current conditions of low petroleum derivative prices. Electricity generation is by internal combustion generators fueled by diesel.

¹⁴ Under the Operation "Resilience of the Blue Economy and Coastal Ecosystem in Northern Honduras" (MI PESCA) (ATN/NV-15749-HO; ATN/NV-15750-HO) which seeks to support the development of productive fishing in Mosquitia, the lack of an electricity supply for refrigeration was identified as one of the main obstacles.

¹⁵ In current conditions of low petroleum derivative prices. Electricity generation is by internal combustion generators fueled by diesel.

¹⁶ Ramirez, Yanu & Erazo, Benjamín. Honduran tourism market diagnostic report. IDB, September 2016.

¹⁷ According to the LGIE, operating contracts need to be placed through international public tenders.

- 1.17 In the Choluteca Department, the towns of El Corpus (pop. 24,645) and Concepción de María (pop. 26,874) are classified as rural, having geographically scattered settlements. The towns form part of the dry corridor. The main economic activity is agriculture. In El Corpus as well as agriculture there are also mining activities. These are towns that record high levels of poverty and migration. Although SIN reaches the Department, the distribution networks have not been extended due to the amount of separation between hamlets and homes. Electricity coverage in the town of El Corpus is 41% and in Concepción de María is 43%.
- 1.18 **Gender problems.** Although in the last 15 years Honduras has made significant progress in terms of gender equality, the participation of women in the workforce remains a big challenge. In fact, in 2015 their percentage rate in the workforce reached only 45.3%, the lowest in Central America, as well as being 38.6 percentage points lower than for men (at 83.9%)¹⁸. Additionally, women working in the same conditions as men earn on average 14% less¹⁹. Likewise, 39.7% of women have no independent income, compared with 15.8% of men²⁰. To this can be added that there is significant sex discrimination at work: 48.9% of working women hold lower quality posts, compared with 33.3% of men²¹. Also, women are overrepresented in sectors like social services (62% of the workforce), but under-represented in sectors like energy (14%), that tend to have higher salaries, more stable jobs and offer better social benefits²². This situation is the root cause of major economic rifts between men and women.
- 1.19 **Relationship between poverty and wellbeing and access to electricity.** The link between poverty and wellbeing and access to electricity is widely acknowledged²³. An impact evaluation carried out in Ethiopia²⁴, concludes that access to electricity has a significant effect on the likelihood of households to escape from poverty. Khandker et al²⁵ conclude that electrification can increase incomes and expenditure in homes by up to 28% and 23% respectively. Barron and Torero²⁶ (2014) find that adult men reduce the time they spend on leisure and agricultural work and at the same time increase their dedication to other work activities, which is reflected in higher incomes. Dynkelman (2010)²⁷, concludes that electrification increased the number of women in employment by 9.5%, within a 5-year period in South Africa. A study in Bangladesh by Abul Barkat et al²⁸ (2002) shows positive impacts in employment, especially for women, in 1997-2002. Global employment growth in electrified industries was

¹⁸ CEPAL (2015). CEPALStats.

¹⁹ PNUD (2009). Human Development Report 2009. Tegucigalpa, Honduras.

²⁰ CepalStat. "Gender Equality Observatory for Latin America and the Caribbean: Honduras 2013".

²¹ ILO (2012). Latin America and the Caribbean Labor Panorama. ILO: Geneva.

²² IDB (2014). [SIMS](#).

²³ Energy Sector Framework Document. Energy Division - GN-2830. IDB (2015). Section II.

²⁴ Tegene G., Berhe, G., Teklemariam, D., (2015), *Impact of Rural Electrification on Poverty Reduction Evidence from Rural Districts of Tigray, Northern Ethiopia*, Journal of Business Management & Social Sciences Research, Volume 4, No.1.

²⁵ Khandker S., Barnes D.F., Samad H., (2013), *Welfare Impacts of Rural Electrification: A Panel Data Analysis from Vietnam*, Economic Development and Cultural Change, Vol. 61, No. 3, pp. 659-692.

²⁶ Barron M., Torero M., (2014), *Short Term Effects of Household Electrification: Experimental Evidence from Northern El Salvador*.

²⁷ Dinkelmann T., (2010), *The Effects of Rural Electrification on Employment: New Evidence from South Africa*, Princeton University.

²⁸ Barkat et al., (2002), *Economic and Social Impact Evaluation Study of the Rural Electrification Program in Bangladesh*, NRECA Report.

- 52.8%, with 41% for men and 121% for women, whilst total growth in employment in non-electrified industries was 28.6%, 16.2% for men and 56.3% for women.
- 1.20 An electrification analysis in Brazil between 1960 and 2000, estimated that an increase of 10% in electrical coverage, increases agricultural production (through irrigation) by 9.8%; in turn, the higher productivity has positive effects on deforestation²⁹. Kirubi et al³⁰ demonstrate that access to electricity results in a significant improvement in productivity per worker in small rural industries (100-200%) and a corresponding increase in the level of income of 20-70%, depending on the product being made.
- 1.21 **Gender justification.** Bearing in mind the gender differentiation in economic terms (¶1.18), this project will also bolster the participation of women in employment and/or economic enterprises linked to construction, operation and maintenance in individual renewable energy systems in remote or isolated communities. Projects elsewhere in the world that include similar activities have been shown to have positive impacts for women in economic and social terms at both personal and family level. For example, analysis of this type of project in Uganda, Tanzania and Nigeria showed that programs that seek to support women in the development of renewable energy companies resulted in: (i) an increase in household incomes and greater economic independence for women; (ii) improved economic stability in the home; and (iii) greater respect for women who become involved in these activities both in their homes and in the communities³¹.
- 1.22 **Experience in the country.** Honduras has carried out a number of electrification projects in isolated areas with renewable energy generation, with financial support from International Cooperation and the central government: Solar energy rural electrification (PIR program) executed by FHIS; EnDeV–Energizing Development³²Program: Nordic Development Fund Projects; project for the Provision of Renewable Energy Solutions for Rural Areas of Central America, financed by Opportunities for the Majority, of the IDB Group³³; recently the Project for Rural Electrification using Solar Energy, financed by the Korea Exim-Bank, focused on addressing the needs of western area of the country; and financing projects executed by the FOMIN, of the IDB Group. The execution of different projects at the national level and the significant development of photovoltaic solar energy projects over the last two years have stimulated market growth at national level for the supply, installation and operation of this technology.
- 1.23 The results of the projects show the importance of: (i) involving the beneficiaries in the development of the project; (ii) adequate choice of technology for the generation and its use; (iii) sustainability of the project, especially in the provision

²⁹ Working paper “Assunção et al. *Electrification, Agricultural Productivity and Deforestation in Brazil*”, 2015.

³⁰ Kirubi, C., Jacobson, A., Kammen, D. M., & Mills, A. (2009). *Community-based electric micro-grids can contribute to rural development: evidence from Kenya*. *World Development*, 37(7), 1208-1221.

³¹ ICRW (2015). *Solar Sister: Empowering Women Through Clean Energy Entrepreneurship*.

³² Program financed with resources from the Netherlands, Germany, Norway, UK, Switzerland and Sweden. Executed by the Institute of Forestry Conservation, Planning Secretariat and NGOs in two stages in 2006 – 2018.

³³ This regional operation in Central America was financed by loans from the Covelo Foundation, with a significant contribution from Honduras, where the Foundation is based.

- and management of resources for operation of the systems; (iv) asset maintenance; (v) consideration of logistical complexities for the tasks of commercial metering and billing; (vi) accompanying the execution of projects for access to electricity with programs of education and efficient energy use.
- 1.24 Honduras has no experience in the operation of solar system with micro-grids for the electrification of isolated communities, although this is a solution implemented in several other places in the region. Its main advantage is the concentration of generation, operation and maintenance in one place, which favors the sustainability of the projects. Micro-grids combine photo-voltaic generation, energy storage, conversion and control of energy distribution through local distribution networks. The reduction in costs of photo-voltaic technology³⁴ and energy storage systems under present-day conditions makes them comparable with the costs of thermal generation from diesel combustion generators³⁵.
- 1.25 **Country strategy in the sector.** The Government, together with the ENEE, have been making serious efforts towards electrification of the country, which went from about 52% in 2005, to 64% in 2010 and to 74% in 2015. Although there are a number of initiatives under way (1.22), the inclusion of regions like Islas de la Bahía and La Mosquitia and Choluteca, is discouraged by the difficulties of access and high logistical costs.
- 1.26 Within the LGIE framework, the government of Honduras assigned 15 million lempiras to FOSODE and it will have an estimated annual income of US\$9.5 million, directly stemming from billing collection of the distribution company, both sources for the development of rural electrification projects. To complement the Government's efforts towards rural electrification, US\$7.481 million have been allocated as grant in the Honduras Investment Plan (¶1.12) from the Program for the Increase in the Use of Renewable Energy in Low-Income Countries (*Scaling up Renewable Energy Program-SREP*) of the Climate Investment Fund-CIF. These resources will be channeled through the Bank for the activities covered by this program and will serve as a starting point for the ENEE in its objective of implementing actions towards rural electrification in isolated areas.
- 1.27 **Program Strategy.** To respond to the challenges of access to electrification, based on the results of the technical cooperation's (TC) of renewable resource evaluation in Islas de la Bahía ATN/NV-14824-HO) and on the Experience Exchange Program (KSP³⁶), ENEE looked at various technological options with proven feasibility in remote zones. It was concluded that the generation solutions with renewable sources (photovoltaic), incorporating a system of storage and distribution in micro-networks, are the most appropriate in terms of investment and operation costs and technical feasibility for installation in difficult-to-access locations. Given the limitations in available resources, the following selection criteria were applied to the beneficiary communities: (i) places remote from the SIN which grid extensions will not reach for another ten years; (ii) high cost of electrification; (iii) participation of IDB with TC in areas where previous work has

³⁴ BSW-Solar PV Price Index

³⁵ *Grid Revolution with Distributed Generation and Energy Storage* and Parity Report on photo-voltaic systems and energy storage by the National University of Seoul.

³⁶ Through the KSP program, financed by the government of South Korea and with the IDB as execution partner, feasibility studies were carried out on the use of renewable energy with energy storage systems on Guanaja Island.

- been done on development of capabilities and governability. The ATN/NV-14824-HO y ATN/NV-15749-HO, ATN/NV-15750-HO TCs have made possible strengthening of relationships between the most important players, and governability;(iv) potential for productive development in economically depressed zones, where electrical energy is key to productive development; (v) likelihood of acceptance of the solution on the part of ethnic groups; and (vi) absence of other donors.
- 1.28 **Strategy of the Bank with the Country (EBP).** The program fits in with the EBP with Honduras 2015-2018 (GN-2796) through its strategic objectives: (i) improving efficiency, the quality of the electricity service and diversification in the generation matrix; and (ii) increasing access to an electricity supply. The Bank feels that progress in reforms of the sector has been significant. To date, two programmatic structural reform support operations in the sector (3386/BL-HO y 3619/BL-HO) have been approved, under which measures are undertaken towards reform and sectorial policies aimed at achieving better financial sustainability, operational efficiency and electricity supply reliability.
- 1.29 **Strategic Alignment.** The program is consistent with the Update of the Institutional Strategy 2010-2020 (AB-3008) and in alignment with the development challenges relating to: (i) productivity and innovation, promoting the economic development of the beneficiary communities and the implementation of generation systems using ER; and (ii) gender equality and diversity in promoting access to an electricity supply to the population. The program is aligned with the transversal areas of: (i) institutional capacity and rule of law, by generating mechanisms to facilitate the provision of energy to isolated areas; (ii) gender equality and diversity in promoting formal employment for women in the sector; and (iii) climate change and environmental sustainability, by means of the use of renewable energy sources with low CO2 emissions. 100% of the SREP's resources as non-reimbursable financing for investment are invested in climate change mitigation activities, according to the [joint MDB methodology for the estimation of climate financing](#). These resources contribute to the aim of the IDB Group to increase the financing of projects related to climate change to 30% of all the operation approvals by the end of 2020.
- 1.30 The program is aligned with the priority areas in the Bank's Infrastructure Strategy: Sustainable Infrastructure for Competitiveness and Inclusive Growth (OP-1012, GN-2710-5) to support the construction and maintenance of a socially and environmentally sustainable infrastructure that contributes to quality of life. The program is consistent with the Energy Sector Framework (GN-2830-3) in the themed areas of energy access and sustainability, in that it promotes: (i) the provision of energy to remote rural areas; and (ii) diversification of the energy matrix using renewable energy. The program is consistent with the Climate Change Sectoral Framework (GN-2835-3) since the proposed energy policy reforms lead to a reduction in greenhouse gases emissions. The program is consistent with the aims of the Domestic Public Services Policy (GN-2716-6). The operation meets the conditions of financial sustainability and economic evaluation, as demonstrated by the sustainability and financial, economic and technical viability of the investments to be financed (¶2.2).
- 1.31 **Alignment with SREP objectives.** The program is consistent with the SREP goal of helping to demonstrate financial, social and environmental viability in low-carbon development paths to improve access to energy in low-income countries.

- The program contributes to this objective through the implementation of sustainable energy solutions with renewable energy to extend access to energy and economic opportunities in isolated rural areas. The SREP approved its Honduras Investment Plan on 4 November 2011, which was updated in March 2017. The update included 3 components to be executed by the Bank: (i) Strengthening of policies and regulatory framework for Renewable Energy (US\$850,000); (ii) Sustainable Rural Energization (ERUS) (US\$10,195,000); and (iii) Support for the Development of Renewable Energy Connected to the Grid (ADERC) (US\$18,645,000). The program will be financed with donation resources under the ERUS component.
- 1.32 **Knowledge of the sector.** The program will take into consideration the information that has been generated within the framework of the TC in Islas de la Bahía, as well as the analyses carried out for the project “Resilience of the Blue Economy and Coastal Ecosystem in Northern Honduras, MIPESCA”, financed by FOMIN (AT-1416; AT-1526). In the execution workshops for this project, it was determined that the supply of electricity is a key element for bolstering productive and/or tourism development for these regions. As a response, MIPESCA included the refurbishment and acquisition of refrigeration units and the use of renewable energy for its operation in its investments in La Mosquitia, an experience that will be considered in the program.
- 1.33 As part of the drive to strengthen the capabilities of the players linked to the planning and development of renewable energy projects in isolated areas, in October 2016 an interregional TC was approved for the Exchange of Experiences on the Introduction of Renewable Energy in Island Systems (ATN/OC-15734-HO). The exchange of experiences took place on the Galapagos archipelago in Ecuador, where the Zero fossil fuels program is in place for the Galapagos Islands, using micro-grid solutions and ER solar, wind and thermal generation from biofuels. Amongst the main lessons learned from the visit the highlights were: (i) leadership and political commitment in the implementation of the program; (ii) correct planning and implementation of sustainable development projects in a coordinated manner with local and governmental island entities and the community; (iii) the importance of the planning of energy development and the influence of expansion plans for the infrastructure and tourism sector for the formulation of a local development plan; (iv) integration of energy efficiency programs and community education; (v) strengthening of the authority of the island planning and energy bodies at national level; (vi) management of resources to partially subsidize the generation technology in sensitive environmental areas and those of high climatic vulnerability; and (vii) continuous development of the capabilities of the personnel responsible for operation and maintenance.
- 1.34 As part of the lessons learned from similar projects financed by the Bank at national level, we perceive the need to: (i) have in place a suitable tariff scheme and focus subsidies correctly to ensure its sustainability; (ii) actively involve local authorities in the design and execution of the projects, instead of having a centralized scheme, to improve the auditing and monitoring of the projects; (iii) actively involve operators in the ongoing process from the start of the project execution; (iv) include distributors working in the area of influence of the operators for support; (v) facilitate connection for rural users, by the operators financing the final connection and meter; (vi) promote the use of electricity for

- production purposes in the program to increase the program returns; (vii) use domestic electrical appliances with EE.
- 1.35 The program will benefit from a transformer (TC) in preparation with SREP resources, aimed at promoting political and regulatory frameworks to achieve long-term sustainability in rural electrification projects and ER, both stand-alone and connected to the grid. This TC will provide inputs for the Electric Energy Regulatory Commission (CREE) to update the tariff lists for isolated systems (micro-grids and stand-alone systems) and introduce secondary legislation into the current legal system, if necessary. The application of the tariff scheme to ensure sustainability will not consider the executing body's financial contribution. Thus, the execution of the project will not affect the ENEE's finances.
- 1.36 The Bank has extensive knowledge of the Honduran electricity market derived from its support in generation, transmission and distribution since 1980. The Bank is currently carrying out two transmission operations with the ENEE: Support for Honduras in Integration into the MER (3103/BL-HO); and Repowering of the Cañaveral Rio Lindo Hydroelectric Plant Complex (3435/BL-HO). It financed the already executed and completed Support for Rural Electrification and the Energy Sector (1584/SF-HO) operation, it supports the program of structural reform for the sector through technical assistance and a series of three policy-based programmatic loans, of which two have been approved, with a third in preparation³⁷. Within the framework and the area of influence of the program (1.27 and 1.33) the Bank is in the process of carrying out TC that will serve as an input for the activities to be undertaken within the framework of this operation. The Bank will offer TC to the Government and to the ENEE individualized technical advice in the process of improving the operational efficiency of the market, through continuous dialog and specialized technical assistance in terms of studies to facilitate the strengthening of financial capacity and market planning.

B. Objectives, Components and Cost

- 1.37 **General Objective.** The program's general objective is to support the development of the country's rural zones, mainly coastal and island areas, through the implementation of projects relating to decentralized renewable energy generation that is distributed around micro-grids. The specific objectives are: (i) provide access to electricity for those communities which do not have the service; (ii) reduce the cost of electricity to those communities whose power supply is based on micro-networks with diesel generation; and (iii) develop institutional capacity within the sector for the design, construction, operation and maintenance of these projects.
- 1.38 **Component 1. Development of electricity generation systems in rural off-grid areas (USD5.73 million).** Generation systems with renewable energy distributed with micro-grids will be financed in Brus Laguna and Guanaja to the tune of USD 5.3 million; and domestic photo-voltaic systems in El Corpus and Concepción de María with USD 0.43 million. The Guanaja micro-grid will be built on private land³⁸ and the one at Brus Laguna on municipal land³⁹. The activities include definitive design, construction and supervision of the projects. For the

³⁷ It is estimated to be approved in the second half of 2017.

³⁸ The owner's legal possession has been confirmed.

³⁹ The land will be granted by the Mayor's Office through a transfer adjudication by the Town Council.

- preparation of tender documents and definitive designs for the micro-grids in Brus Laguna and Guanaja, the results from the ATN/NV-14824-HO⁴⁰ TC and the KSP⁴¹ will be taken into consideration.
- 1.39 For the preparation of definitive designs, construction and commissioning of micro-grids and individual systems, the executor will organize international bids for tender in accordance with the Bank's acquisition policies. The executor will contract specialist operators for the management, Operation and Maintenance (O&M) of the micro-grids, and distribution and commercialization, on the lines established in the LGIE and the Component 2 results. For the O&M of the domestic photo-voltaic systems the executor has in mind to contract local firms with a significant complement of women.
- 1.40 **Component 2. Strengthening of management capacities. (US\$0.43 million).** Specialized consultations, workshops and training and experience exchange programs will be undertaken to ensure that management models are adopted that are conducive to the financial and operational sustainability of the isolated electrification systems. Activities will be undertaken aimed at: (i) encouraging community participation, in particular women, in the construction, operation and maintenance of the projects; (ii) identifying and incentivizing participation from private firms in energy distribution and commercialization; and (iii) bolstering the operational and financial capacity of the FOSODE for the management and development of rural electrification through the design, construction and supervision of micro-grids. There will be financing of the supply of specialized tools for the design, supervision and evaluation of experiences of rural electrification, and training in the local languages.
- 1.41 **Administration and evaluation (US\$0.26 million).** Contracting of consultancies for the development of supervisory, evaluation and auditing activities for the program will be financed.
- 1.42 The extra costs associated with these activities is detailed in Table 1

Table 1. Total cost of the Program

Investment categories	US\$
Component 1. Development of electricity generation systems in rural off-grid areas	5,730,000
Micro-grids in Guanaja and Brus laguna	5,300,000
Domestic Photovoltaic Systems	430,000
Component 2. Boosting of management capabilities	430,000
Women's participation strategy	40,000
Implementation of management model and financial and social sustainability assistance	110,000
Strengthening of FOSODE capabilities	280,000
Administration and evaluation	260,000
Supervision	130,000
Evaluation	20,000
Auditing	110,000

⁴⁰ Renewable resource assessment TC in Islas de la Bahía

⁴¹ Through the KSP program, feasibility studies are being done for the use of renewable energy with energy storage systems on Guanaja Island.

TOTAL	6,420,000
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C. Key Results Indicators

1.43 The achievement of the program’s objectives will be measured by taking as a reference the indicators and targets shown in the Matrix of Results. Anticipated project results are: (i) electricity supply to 4.204 new homes; (ii) reduction in the costs of electricity production to levels that allow competitive socio-economic development in the participating areas; (iii) creation of employment, encouraging gender equality and the involvement of the private sector; (iv) capability in the ENEE for the development of micro-grids and its replication in other areas on a national scale⁴².

1.44 Table 2 shows the anticipated results and indicators.

Table 2. Anticipated Results and Indicators

Results	Indicator
Increased energy coverage	Homes benefiting from electricity generated by renewable energy in Guanaja ⁴³
	Homes benefiting from electricity generated by renewable energy in Brus Laguna ⁴⁴
	Homes benefiting from electricity generated by renewable energy in El Corpus
	Homes benefiting from electricity generated by renewable energy in Concepción de María
Improvement in technical, financial and social sustainability of electrification systems in isolated areas	Annual billed electricity consumed by the program’s beneficiaries
	Annual billed electricity consumed by the program’s beneficiaries in Brus Laguna
	Electricity expenditure at domestic level in Guanaja
	Electricity expenditure at domestic level in Brus Laguna
	Energy expenditure level in El Corpus and Concepción de María
	Women trained in construction, operation and supervision of the electricity generation projects in isolated areas.
Capability of the ENEE for the management of improved rural electrification projects.	Training workshops for design, operation and supervision of generation with ER
	Trained personnel

1.45 **Beneficiaries.** The direct beneficiaries of the program will be the inhabitants of the four participating towns whose distribution is shown in Table 3.

⁴² The ENEE has rolled out conventional rural electrification projects through grid extensions and support for stand-alone solutions in isolated areas.

⁴³ Due to it being an area with a predominately English-speaking black population, as far as possible data will be collected from benefiting homes separately according to race/ethnic group.

⁴⁴ Due to it being an area with a predominately Miskita population, as far as possible data will be collected from benefiting homes separately according to race/ethnic group.

Table 3. Direct Beneficiaries Target

Department	Town	no. of homes	Benefiting population
Islas de la Bahía	Guanaja	1,195	4,398
Gracias a Dios	Brus Laguna	2,270	12,719
Choluteca	Concepción de María	350	1,750
Choluteca	El Corpus	300	1,500
Total		4,115	20,367

II. STRUCTURE OF FINANCING AND MAIN RISKS

A. Financing Instruments

- 2.1 **Financing Structure.** The program is structured under the classification of a Grant (*Investment Grant*) with SREP resources of USD6,420,000. The resources will be administered by the Bank, in conformity with the financial procedures agreement agreed between the Bank and the World bank, as administrator of these resources and they are transferred to the country on a non-refundable basis. The resources will be paid out in 3 years, following the payment timeline in Table 4, as detailed in the [Multi-Year Implementation Plan \(PEP\)](#).

Table 4. Payment timeline

Source	Year			Total
	1	2	3	
SREP	1,605,000	3,852,000	963,000	6,420,000
TOTAL	1,605,000	3,852,000	963,000	6,420,000
IDB Payments (%)	25%	60%	15%	100%

B. Feasibility and Sustainability

- 2.2 **Economic Evaluation** The justification for the provision of access to energy in isolated rural areas using Renewable Non-Conventional Energy (ERNC) is based on the argument that access to energy produces economic and social benefits that directly improve the quality of life of the beneficiary. The current public policy in Honduras defined the need to provide the service to these areas. Considering the best cost-effective solutions, the Cost-Effectiveness Analysis (ACE) evaluation methodology is followed, which is based on the information on costs of supply per kWh available in the delimited areas.
- 2.3 The option of coverage by means of extension of the SIN network was discarded because it is the one with the highest cost. The unit cost of the mini-grid photovoltaic solar solution was compared in Brus Laguna and Isla Guanaja, representing 92% of the program investment, with the diesel solution. The levelized cost of the photovoltaic solution offered under the program (Levelized Cost of Energy) was calculated based on investment values and projections of operating costs and long-term maintenance. The analysis shows the cost of the mini-grid photovoltaic solutions between 43% and 43.5% of the cost of the diesel solution, evidencing the advantage of the proposal.
- 2.4 For investments in the two mini-grid systems, a cost-benefit analysis was performed, calculating the net flows of investment, operation and maintenance costs and expected revenues from energy sales, projected at 25 years. It sends

- an Internal Rate of Return of 19.29% for Isla Guanaja and 18.44% for Brus Laguna. Discounting the flows to 12%, you get a Net Present Value of US\$ 1.5 million for Isla Guanaja and US\$1.3 million for Brus Laguna.
- 2.5 The sensitivity analysis to the ACE considers the margin of difference in the unit cost of the alternatives. Considering that the solution offered costs 43% of the cost of the solution with diesel, the margin of movement of prices is quite broad, conserving the robustness of the economic advantage of the mini-grid photovoltaic solution. A sensitivity analysis was performed on key variables in financial flows, such as increase in operating and maintenance costs, and reduction of fees charged. In all cases, the soundness of the results of the financial viability of the investment was maintained.
- 2.6 **Technical Feasibility.** Technological research and development have managed to considerably reduce the price of photovoltaic, wind generation, energy storage and control systems technology (jointly known as micro-grids), reaching levels comparable to or lower than thermal energy in accessible places, and technical and economic viability has been proven for stand-alone systems. The designs and cost calculations for projects to be financed were carried out by ENEE and FOSODE. To ensure compliance with technical specifications, quality, construction time and budget, the ENEE will contract an outside firm to supervise.
- 2.7 **Sustainability.** The program recognizes that the provision of electricity through ERNC in isolated areas, especially on an individual basis where there is no company to administer, operate and maintain the electrical system, presents management difficulties, since there is no regulatory body. The program pays special attention to ensuring the adoption of management models conducive to the operational and financial sustainability of these systems. In an attempt to meet this challenge the following are considered: (i) updating of the tariff lists for isolated systems and revision of the secondary legislation under the current legal system, to be developed with TC resources (¶1.35); and (ii) execution of activities to encourage the early participation of private enterprises and training of local personnel, including women in the O&M of the electrification systems to be installed (¶1.40).
- 2.8 **Institutional feasibility.** The ENEE has 60 years' experience in the generation, transmission, distribution and commercialization of electricity in Honduras and has been responsible, through its engineering division and through FOSODE, for the design, construction, and supervision of works like those planned for the project. The involvement of the ENEE as a strategic player in the execution of this program within the context of its National Public Electrification Plan and its slogan "Moving Forward with Energy for social development in Honduras", is in keeping with the mandate defined in the LGIE to finance rural electrification projects through the FOSODE, administered through the ENEE, which seeks to promote access to electricity at competitive prices and with the required service quality.
- C. Environmental and Social Risks**
- 2.9 This program will have no negative socio-environmental impacts. It is hoped that the clean energy solutions that are to be financed will replace the use of fossil fuels and wood, reducing the risks of soil and water pollution and pressure on woodlands. Similarly, the aspiration is to improve the quality of life for the

impoverished inhabitants of rural areas through the availability of electricity, by opening opportunities for improvements in the local economy through a reduction in the purchases of fuel, and in wellbeing, communications and productivity for the beneficiaries. Social and Environmental Analyses have been carried out together with Environmental and Social Management Plans (ESMP) for each of the four stand-alone solar systems, which include mitigations for the impacts and risks identified with each one, such as the handling of potential battery waste and the correct disposal of panels and batteries at the end of their useful life. To date, a public consultation has been held in the locality of Guanaja Island, and the other two will take place in the next few weeks in Brus Laguna and Concepción de Maria and Tomason Island. Since the populations of Brus Laguna and Guanaja Island are deemed to be indigenous peoples under policy OP-765 of the IDB, the consultations have taken and will take place in accordance with the stipulations of the policy; and socio-cultural assessments were carried out in these two places.

- 2.10 The acting agency has been asked to investigate historical ownership records of the sites for the installations, to ensure their legal viability. A more extensive basic study of natural disaster and climate change risks at the definitive site on Guanaja Island must be included prior to construction. Given the above, and in conformity with the definitions in policy OP-703 on the Environment and Compliance with Safeguards, the program has been classified as Category B.
- 2.11 Special conditions of execution will be that: (i) the ENEE complies with the environmental and social obligations set out in detail in the Environmental and Social Management Report (ESMR), and implements the actions specified in the Environmental and Social Management Plan (ESMP), according to the deadlines stipulated therein; (ii) the ENEE presents to the Bank evidence of acquisition of the land, prior to awarding the construction contract and to the starting-up of the micro-grid projects; and (iii) previous to execution of Component 1, the CREE approves the tariff structure for renewable energy-based isolated systems

D. Fiduciary Risks

- 2.12 Based on the lessons learned during the execution of previous loans with the ENEE, execution of the administration and monitoring of the program was contemplated through the Project Management Unit (UCP), as with loans 3103/BL-HO and 3435/BL-HO, with outside supervision of the execution of the works. The UCP has experience in the execution of projects with the Bank, both in purchases and contracting, as well as in financial execution. It has a very capable technical team in the FOSODE Office of Public Electrification qualified for the development of access to electricity projects, based on network extensions and rural electrification with stand-alone renewable energy systems. The program will provide training for the ENEE staff in micro-grid management.

E. Other Project Risks

- 2.13 The following medium risks were identified: (i) delay in the acquisition/transfer of land; (ii) insufficient budget in the project development; (iii) change of government in the 2017-2018 election year; (iv) lack of executor experience in the execution of electrification projects with micro-grids; and (v) non-granting of the appropriate Fiscal Dispensations. To mitigate these risks the following measures will be put in place: (i) formulation and application of the Action Plan

and definition of responsibilities in the procedure for acquisition/transfer of land; (ii) contracting of a Technical Support Consultant to revise the definitive designs and budget for the systems to be implemented; (iii) suitable publication of the communication plan to the authorities in an appropriate manner; (iv) technical support for the Bank by way of technical assistance and supervision of the project; and (v) correct management of The Secretariat of Income Administration and Finance through ENEE Project Exemption Legal Advice.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary of Implementation Arrangements

- 3.1 **Execution plan.** The responsibility for the execution, administration, monitoring and evaluation of the project will fall to the ENEE with support from the UCP and the FOSODE Social Electrification Office. ENEE will contract an outside supervisory firm to oversee the works. **A special contractual condition prior to the first payment will be the enacting of an agreement between the Beneficiary Country represented by the Secretary of State in the Finance Office and the ENEE for the transfer of resources and program execution obligations.** This agreement will cover: (i) the method of transfer of the donation resources; (ii) the commitment by the ENEE to execute the program activities in conformity with the terms and conditions of the donation; (iii) the commitment to utilize the donation resources solely for the purposes of the project.
- 3.2 The ENEE as executor will be in charge of implementing and supervising the program, defining and approving the Annual Operational Plans (AOP), providing information to allow the Bank to monitor and evaluate the impacts of then program, coordinating and managing the payments and keeping accounting and financial records, including the annual financial statements required for the program.
- 3.3 **Acquisition Management.** For the contracting of works and the acquisition of goods and consultancy services financed by the Bank resources, the Bank's Policies for the Acquisition of Works and Goods Financed by the Bank (GN-2349-9) and the Policies for the Selection and Contracting of Financial Consultants Financed by the Bank (GN-2350-9). will be applied. The method of supervision will be a combination of ex-post and ex-ante as per the Acquisition Plan (AP). Acquisitions must be included in the PA approved by the Bank and follow the methods and rankings established therein. An AP will be agreed for the first 18 months of the execution, which will be monitored, executed and updated using tools agreed with the Bank. UCP personnel may be contracted directly as a continuation of their services provided for operations previously financed by the Bank and executed by ENEE, after positive evaluation of their performance, in accordance with the Bank's Acquisition Policy GN-2350-9.
- 3.4 **Financial Management.** The ENEE, through the UCP, will be responsible for financial management and will present audited financial statements of the IDB financing within 120 days of the close of each financial period. The last of these reports will be presented within the 120 days following the date of the last payment. The ENEE will contract outside auditing services based on the terms of reference previously agreed by the Bank. Payments will be made in accordance with the financial plan, as set out in the Guide to Financial Management for Projects Financed by the Bank (OP-273-6) and its updates.

- 3.5 **Program Operation Manual (MOP).** The execution of the program will be regulated by the conditions contained in its MOP, previously agreed with the Bank. The MOP will contain all the procedures to be followed during execution of the program. During execution, the MOP may be modified on written no-objection notice from the Bank. The MOP will include, among others: (i) detailed execution schematic and institutional and operational roles and responsibilities of the entities involved; (ii) selection criteria for beneficiary communities, the community consultation procedure; (iii) norms and procedures for the selection and contracting of works, goods and services; (iv) investment sustainability strategy: payment scheme for electricity services, maintenance responsibilities, selection criteria for managers of the facilities; (v) norms and procedures for administrative and financial management; (vi) follow-up and monitoring procedures; (vii) measures, actions and procedures established in the Environmental and Social Management Plans (ESMP), which will constitute an Annex to the MOP. **A special contractual condition prior to the first payment will be evidence of the approval and coming into force of the MOP agreed with the Bank.**

B. Summary of Arrangements for Monitoring of Results

- 3.6 **Monitoring and evaluation.** The program has a Monitoring and Evaluation Plan. The monitoring scheme will include: (i) Procurement Plan; (ii) MIP and AOP; (iv) annual check on compliance with targets set out in the RM (Annex II); and (v) half-yearly reports which will contain: (a) activities carried out during that period, progress in their implementation, problems encountered and how to solve them, (b) evaluation of: Results Matrix, AP, AOP and Risk Analysis, and (c) analysis of the Bank's Project Monitoring Report (PMR), which will evaluate the achievement of product indicator goals and the results of the Results Matrix. The works executed in the period will be evaluated and planning for the next half-year will be included.
- 3.7 The Monitoring and Evaluation Plan includes mechanisms for evaluation of the project, with the aim of checking compliance with the targets agreed in the Results Matrix. The ENEE will choose and contract consultancy services to carry out: (i) an intermediate evaluation, on payment and justification of 50% of the project resources, or 24 months into the execution, whichever occurs first. This evaluation will focus on analyzing progress made; aspects of coordination and execution; degree of compliance with contractual obligations; recommendations for the achievement of the targets set and the sustainability of investments; and (ii) a final assessment, no later than 90 days before the date of the last payment, from which the final report must be presented no later than 30 days after the final justification of disbursements, which will determine: the degree of compliance with the targets established in the Results Matrix; an ex-post cost/benefit analysis; the performance of the executor; factors that affected implementation; and recommendations for future operations.

Development Effectiveness Matrix		
Summary		
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Social Inclusion and Equality -Productivity and Innovation -Economic Integration -Climate Change and Environmental Sustainability	
Country Development Results Indicators	-Households with new or improved access to electricity supply (#)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	(i) mejorar la eficiencia, calidad del servicio eléctrico y diversificación de la matriz de generación; y (ii) incrementar el acceso al servicio de electricidad.	(i) mejorar la eficiencia, calidad del servicio eléctrico y diversificación de la matriz de generación; y (ii) incrementar el acceso al servicio de electricidad.
Country Program Results Matrix		The intervention is not included in the 2017 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		Fill in referenced paragraph in the POD
II. Development Outcomes - Evaluability		
3. Evidence-based Assessment & Solution	Evaluable	
3.1 Program Diagnosis	10.0	
3.2 Proposed Interventions or Solutions	3.0	
3.3 Results Matrix Quality	4.0	
3.3 Results Matrix Quality	3.0	
4. Ex ante Economic Analysis	10.0	
4.1 The program has an ERR/NPV, a Cost-Effectiveness Analysis or a General Economic Analysis	4.0	
4.2 Identified and Quantified Benefits	2.4	
4.3 Identified and Quantified Costs	1.2	
4.4 Reasonable Assumptions	1.2	
4.5 Sensitivity Analysis	1.2	
5. Monitoring and Evaluation	7.2	
5.1 Monitoring Mechanisms	2.5	
5.2 Evaluation Plan	4.7	
III. RISKS & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Specify risk rate on risk tab	
Identified risks have been rated for magnitude and likelihood	Yes	
Mitigation measures have been identified for major risks	Yes	
Mitigation measures have indicators for tracking their implementation	Yes	
Environmental & social risk classification	B	
IV. IDB's Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management; Budget. Procurement; Information System.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Gender Equality		
Labor		
Environment		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project		
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan		

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

Evaluability Assessment Note: The purpose of this note is to provide an overall assessment of the project's evaluability based on the standards described in the Evaluability Guidelines, as well as to ensure that the Board understands why scores were or were not given to the project. The following information should be developed in order to achieve this purpose. Assess and summarize the diagnosis and the level of empirical evidence to support it. Assess and summarize the level of empirical evidence (or cost-effectiveness) of the solution proposed. Assess and comment on the Results Matrix Quality. Assess and describe the evaluation methodology ex ante and ex post to be used by the project to demonstrate its results. Describe the main type of risk the operation is subject to and its intensity. Describe whether mitigation measures are in place and whether they can be monitored during the life of the project.

RESULTS MATRIX

Project Objective	The program's general objective is to support the development of the country's rural zones, mainly coastal and island areas, through the implementation of projects relating to decentralized renewable energy generation that is distributed around micro-grids. The specific objectives are: (i) provide access to electricity for those communities which do not have the service; (ii) reduce the cost of electricity to those communities whose power supply is based on micro-networks with diesel generation; and (iii) develop institutional capacity within the sector for the design, construction, operation and maintenance of these projects.
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RESULTS								
Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Project Completion	Comments/Verification Methods
Result 1: Increased energy coverage								
Homes benefiting from electricity generated by renewable energy in Guanaja ¹	#	0	2016	0	0	1,195	1,195	National Electric Energy Company (ENEE) Reports - Municipality of Guanaja
Homes benefiting from electricity generated by renewable energy in Brus Laguna ²	#	0	2016	0	0	2,270	2,270	ENEE reports - Municipality of Brus Laguna
Homes benefiting from electricity generated by renewable energy in El Corpus	#	0	2016	0	300	0	300	ENEE reports
Homes benefiting from electricity generated by renewable energy in Concepción de María	#	0	2016	0	350	0	350	ENEE reports
Result 2: Improvement in technical, financial and social sustainability of electrification systems in isolated areas								
Annual energy billed for consumption by users benefiting from the program in Guanaja	MWh/year	-	2016	-	-	1,300	1,300	ENEE reports - Municipality of Guanaja

¹ Due to it being an area with a predominately English-speaking black population, as far as possible data will be collected from benefiting homes separately according to race/ethnic group.

² Due to it being an area with a predominately Miskita population, as far as possible data will be collected from benefiting homes separately according to race/ethnic group.

RESULTS								
Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Project Completion	Comments/Verification Methods
Annual billed electricity consumed by the program's beneficiaries in Brus Laguna	MWh/year	0	2017	-	-	850	850	ENEE reports- Municipality of Brus Laguna
Electricity expenditure at domestic level in Guanaja	Lemp/-kWh	11	2017	-	-	*	*	The rate calculation will be determined in accordance with component 2 studies. The baseline is based on values for thermal generation using diesel for 2016.
Electricity expenditure at domestic level in Brus Laguna	Lemp/-kWh	> 16	2017	-	-	*	*	The rate calculation will be determined in accordance with component 2 studies. The baseline is based on values for thermal generation used in Puerto Lempira, with diesel generation in 2016.
Energy expenditure level in El Corpus and Concepción de María	Lemp/-kWh	3.85	2017	-	-	*	*	The rate calculation will be determined in accordance with component 2 studies.
Committee formed for the support of technical, financial and social sustainability in el Corpus and Concepción de María	Committee	0	2017	0	2	0	2	ENEE reports
Result 3: Capability of the ENEE for the management of improved rural electrification projects.								
Training workshops for design, operation and supervision of generation with Renewable Energy	Workshop	0	2016	2	3	3	8	Workshops reports
Trained personnel	Individuals	0	2016	6	6	6	18	Training activities reports

*To be determined based on the rate calculation.

Product	Unit of Measurement	Cost (US\$)	Baseline	Year 1	Year 2	Year 3	Project Completion	Comments/Verification Methods
Component 1. Development of electricity generation systems in rural off-grid areas								
Photovoltaic solar plant on Guanaja island, built and operating (MW)	Plant	2,800,000	0	0	0	1	1	Semi-annual progress reports
Photovoltaic solar plant in the municipality of Brus Laguna, built and operating	Plant	2,500,000	0	0	0	1	1	Semi-annual progress reports
Household photovoltaic systems in the municipalities of El Corpus and Concepción de María, installed and operating.	System	430,000	0	0	650	0	650	Semi-annual progress reports
Component 2: Strengthening of management capacities.								
Management models designed and implemented.	Model	40,000	0	1	2	0	3	Semi-annual progress reports
Strategy for financial and social sustainability designed and implemented ³	Strategy	70,000	0	1	1	1	3	Semi-annual progress reports
Strategy for strengthening the Social Fund for Electricity Development designed and implemented.	Strategy	280,000	0	0	1	0	1	Semi-annual progress reports

³ The strategy will include a training plan for at least 25 women in construction, operation and supervision of the electricity generation projects in isolated areas.



Safeguard Policy Filter Report

Operation Information

Operation		
HO-G1247 Rural Electrification Program in Isolated Areas		
Environmental and Social Impact Category	High Risk Rating	
B	{Not Set}	
Country	Executing Agency	
HONDURAS	{Not Set}	
Organizational Unit	IDB Sector/Subsector	
Energy	RURAL ELECTRIFICATION	
Team Leader	ESG Lead Specialist	
CARLOS ALBERTO JACOME MONTENEGRO	ROBERTO LEAL ROSILLO	
Type of Operation	Original IDB Amount	% Disbursed
Investment Grants	\$0	0.000 %
Assessment Date	Author	
5 May 2017	robertole ESG Lead Specialist	
Operation Cycle Stage	Completion Date	
ERM (Estimated)	21 Apr 2017	
QRR (Estimated)	4 May 2017	
Board Approval (Estimated)	{Not Set}	
Safeguard Performance Rating		
{Not Set}		
Rationale		
{Not Set}		

Safeguard Policy Items Identified

[B.1 Bank Policies \(Access to Information Policy– OP-102\)](#)

The Bank will make the relevant project documents available to the public.

[B.1 Bank Policies \(Disaster Risk Management Policy– OP-704\)](#)

The operation is in a geographical area exposed to [natural hazards \(Type 1 Disaster Risk Scenario\)](#). Climate change may increase the frequency and/or intensity of some hazards.



Safeguard Policy Filter Report

B.1 Bank Policies (Disaster Risk Management Policy– OP-704)

The sector of the operation is vulnerable to natural hazards. Climate change may increase the frequency and/or intensity of some hazards.

B.1 Bank Policies (Indigenous People Policy– OP-765)

The operation will offer opportunities for indigenous people

B.2 Country Laws and Regulations

The operation is expected to be in compliance with laws and regulations of the country regarding specific women's rights, the environment, gender and indigenous peoples (including national obligations established under ratified multilateral environmental agreements).

B.3 Screening and Classification

The operation (including [associated facilities](#)) is screened and classified according to its potential environmental impacts.

B.5 Environmental Assessment Requirements

An environmental assessment is required.

B.6 Consultations

Consultations with affected parties will be performed equitably and inclusively with the views of all stakeholders taken into account, including in particular: (a) equal participation by women and men, (b) socio-culturally appropriate participation of indigenous peoples and (c) mechanisms for equitable participation by vulnerable groups.

B.7 Supervision and Compliance

The Bank is expected to monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.

B.10. Hazardous Materials

The operation has the potential to impact the environment and occupational health and safety due to the production, procurement, use, and/or disposal of hazardous material, including organic and inorganic toxic substances, pesticides and persistent organic pollutants (POPs).

B.17. Procurement

Suitable safeguard provisions for the procurement of goods and services in Bank financed operations may be incorporated into project-specific loan agreements, operating regulations and bidding documents, as appropriate, to ensure environmentally responsible procurement.

Potential Safeguard Policy Items

B.4 Other Risk Factors

The borrower/executing agency exhibits weak institutional capacity for managing environmental and social issues.

B.9 Natural Habitats and Cultural Sites

The operation will result in the degradation or conversion of Natural Habitat or Critical Natural Habitat in the project area of influence.



Safeguard Policy Filter Report

B.11. Pollution Prevention and Abatement

The operation has the potential to pollute the environment (e.g. air, soil, water, greenhouse gases).

Recommended Actions

Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.

Additional Comments

[No additional comments]



Safeguard Screening Form

Operation Information

Operation		
HO-G1247 Rural Electrification Program in Isolated Areas		
Environmental and Social Impact Category	High Risk Rating	
B	{Not Set}	
Country	Executing Agency	
HONDURAS	{Not Set}	
Organizational Unit	IDB Sector/Subsector	
Energy	RURAL ELECTRIFICATION	
Team Leader	ESG Lead Specialist	
CARLOS ALBERTO JACOME MONTENEGRO	ROBERTO LEAL ROSILLO	
Type of Operation	Original IDB Amount	% Disbursed
Investment Grants	\$0	0.000 %
Assessment Date	Author	
5 May 2017	robertole ESG Lead Specialist	
Operation Cycle Stage	Completion Date	
ERM (Estimated)	21 Apr 2017	
QRR (Estimated)	4 May 2017	
Board Approval (Estimated)	{Not Set}	
Safeguard Performance Rating		
{Not Set}		
Rationale		
{Not Set}		

Operation Classification Summary



Safeguard Screening Form

Overridden Rating	Overridden Justification
C	Elevate: other (enter details in comments)
Comments	
Since the beneficiaries on the projects in Isla Guanaja and Bruss Laguna are considered indigenous people under the OP-765. There will have to be an sociocultural evaluation and perform public consultations in accordance to the OP-765.	

Conditions / Recommendations

Category "B" operations require an environmental analysis (see Environment Policy Guideline: Directive B.5 for Environmental Analysis requirements)

The Project Team must send to ESR the PP (or equivalent) containing the Environmental and Social Strategy (the requirements for an ESS are described in the Environment Policy Guideline: Directive B.3) as well as the Safeguard Policy Filter and Safeguard Screening Form Reports. These operations will normally require an environmental and/or social impact analysis, according to, and focusing on, the specific issues identified in the screening process, and an environmental and social management plan (ESMP). However, these operations should also establish safeguard, or monitoring requirements to address environmental and other risks (social, disaster, cultural, health and safety etc.) where necessary.

Summary of Impacts / Risks and Potential Solutions

The negative impacts from production, procurement and disposal of [hazardous materials](#) (excluding POPs unacceptable under the Stockholm Convention or toxic pesticides) are [minor](#) and will comply with relevant national legislation, [IDB requirements on hazardous material](#) and all applicable International Standards.

Monitor hazardous materials use: The borrower should document risks relating to use of hazardous materials and prepare a hazardous material management plan that indicates how hazardous materials will be managed (and community risks mitigated). This plan could be part of the ESMP.

The project is located in an area prone to [coastal flooding](#) from [storm surge](#), high wave activity, or erosion and the likely severity of the impacts to the project is [moderate](#).



Safeguard Screening Form

A Disaster Risk Assessment, that includes a Disaster Risk Management Plan (DRMP), may be necessary, depending on the complexity of the project and in cases where the vulnerability of a specific project component may compromise the whole operation. The DRMP should propose measures to manage or mitigate these risks to an acceptable level. The measures should include risk reduction (siting and engineering options), disaster risk preparedness and response (contingency planning, etc.), as well as financial protection (risk transfer, retention) for the project. They should also take into account the country's disaster alert and prevention system, general design standards, coastal retreat and other land use regulations and civil defense recommendations in coastal areas.

The project is located in an area prone to [sea level rise](#) and the likely severity of the impacts to the project is [moderate](#).

A Disaster Risk Assessment, that includes a Disaster Risk Management Plan (DRMP), may be necessary, depending on the complexity of the project and in cases where the vulnerability of a specific project component may compromise the whole operation. The DRMP should propose measures to manage or mitigate these risks to an acceptable level. The measures should consider both the risks to the project, and the potential for the project itself to exacerbate risks to people and the environment during construction and operation. The measures should include risk reduction (siting and engineering options), disaster risk preparedness and response (contingency planning, etc.), as well as financial protection (risk transfer, retention) for the project. They should also take into account the country's disaster alert and prevention system, general design standards and other related regulations.

Disaster Risk Summary

Disaster Risk Level

Moderate

Disaster / Recommendations



Safeguard Screening Form

The reports of the Safeguard Screening Form (i.e., of the Safeguards Policy Filter and the Safeguard Classification) constitute the Disaster Risk Profile to be included in the Environmental and Social Strategy (ESS). The Project Team must send the PP (or equivalent) containing the ESS to the ESR.

The Borrower prepares a Disaster Risk Management Summary, based on pertinent information, focusing on the specific moderate disaster and climate risks associated with the project and the proposed risk management measures. Operations classified to involve moderate disaster risk do not require a full Disaster Risk Assessment (see Directive A-2 of the DRM Policy OP-704).

The Project Team examines and adopts the DRM summary. The team remits the project risk reduction proposals from the DRMP to the engineering review by the sector expert or the independent engineer during project analysis or due diligence, and the financial protection proposals to the insurance review (if this is performed). The potential exacerbation of risks for the environment and population and the proposed risk preparedness or mitigation measures are included in the Environmental and Social Management Report (ESMR), and are reviewed by the ESG expert or environmental consultant. The results of these analyses are reflected in the general risk analysis for the project. Regarding the project implementation, monitoring and evaluation phases, the project team identifies and supervises the DRM approaches being applied by the project executing agency.

Climate change adaptation specialists in INE/CCS may be consulted for information regarding the influence of climate change on existing and new natural hazard risks. If the project requires modification or adjustments to increase its resilience to climate change, consider (i) the possibility of classification as an adaptation project and (ii) additional financing options. Please consult the INE/CCS adaptation group for guidance.

Disaster Summary

Details

The project is classified as moderate disaster risk because of the likely impact of at least one of the natural hazards is average.

Actions

Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK



**HONDURAS
HO-G1247
ELECTRIFICATION PROGRAM IN ISOLATED LOCATIONS IN HONDURAS**

**ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT
(ESMR)
(MAY/04/2017)**

This document was prepared by:
Roberto Leal (VPS/ESG)

ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT (ESMR)	
Name of Operation	Electrification program in isolated locations in Honduras
Operation Number	HO-G1247
Details of the Operation	
IDB Sector	INE/ENE
Type of Operation	Investment Grant
Classification of Impact¹	B
Disaster Risk Indicators	Low
Borrower	Republic of Honduras
Executing Agency	Empresa Nacional de Energía Eléctrica [National Electric Energy Company] (ENEE)
IDB loan US\$ (and total cost of project)	IDB: US\$6,420,000
Relevant Policies/Guidelines	OP-102; OP-704; OP-761; OP-765; OP-703 (B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.9, B.10, B.11, B.17)
Executive Summary <i>(ideally this should not exceed 400 words)</i>	
<p>The aim of this project is to support the development of the rural areas of the country, mainly coastal and island, through the implementation of renewable energy generation projects decentralized and distributed in micro-networks. Specific objectives include: (i) reducing the cost of electric power to levels that promote competitive socioeconomic development in the places of intervention; (ii) increasing access to electricity; and (iii) developing the institutional capacity of the sector for the design, construction, operation and maintenance of these projects, as well as encouraging the generation of employment by promoting gender equity and the participation of the private sector.</p> <p>The project has 4 different places where the isolated systems will be installed. On Guanaja Island (1), in Brus Laguna (2), Concepción María (3) and El Corpus in the Gulf of Fonseca (Tomason Island) (4). The first two systems will be centralized and have a distribution line to the beneficiary community, while the installations of the last two will be private in homes in the isolated communities.</p> <p>Environmental and social analyses have been performed for the 4 operations by the Executing Agency ENEE, and an external consultant hired to provide support and improve their quality and help them with any inquiries, due to the short timeframes for preparing the project since funds from the Climate Investment Fund (CIF) will be used. Sociocultural assessments were also carried out for the Guanaja and Brus Laguna sites since the beneficiaries are considered indigenous peoples, according to the policy (OP-765) of the IDB. An analysis mission was conducted with a visit to Guanaja Island by ESG and also by the team leader. Public consultations were also held on this site, containing stipulations of the indigenous peoples policy so that the remaining consultations are made accordingly prior to OPC on the other sites.</p> <p>The executing agency agreed to carry out a broader climate change risk study once the final site has been chosen on Guanaja Island. The executing agency will have chosen the site prior to going to the Board and now the two alternatives are analyzed within the SEA (Social and Environmental Analysis).</p>	

¹ If the classification is B.13, please indicate the level of risk (F11, F12, or F13).

Description of the Operation *(ideally this should not exceed 400 words)*

To respond to the electrification access challenges of the country, the ENEE with the support of the Bank, will be supporting 4 rural solar isolated systems in the communities of: Guanaja Island, in support of its initiative to be considered a Green Island; Puerto Lempira (or Brus Laguna) in Gracias a Dios; and Concepción María and El Corpus in the Gulf of Fonseca (Tomason Island). The various technology alternatives were analyzed with proven viability in the most remote areas. It was concluded that the generation solutions with renewable sources (photovoltaic), incorporating a system of storage and distribution in micro-networks, are the most appropriate in terms of investment and operation costs and technical feasibility for installation in difficult-to-access locations.

On Guanaja Island the generation system will be 1.2 MW of photovoltaic electric power, benefiting more than 1,500 inhabitants. In Brus Laguna it is 1.2 MW also benefiting 5,500 inhabitants. Both systems work by capturing solar radiation using around 3,000 photovoltaic modules with a capacity of 300 W.

For the Concepción María and El Corpus projects in the Gulf of Fonseca (Tomason Island), each home is expected to have a 65-watt basic photovoltaic solar system, a 12-volt battery and 12/24 controller, and a 450-watt inverter for four 5 watt LEDs, ensuring 4.5 hours of illumination and the use of electronic equipment such as TVs, DVDs, etc.

In all project locations, the electricity supply is very costly due to its isolation with service quality problems also reported. In project locations, the average cost is also much higher varying between cUS\$45/kWh and cUS\$65/kWh. This compared to the average national cost of cUS\$14/kWh. Therefore, a large part of its population cannot access the electricity service, limiting social development and economic and productive activities.

The project consists of: **Component 1: Development of electricity generation systems in isolated areas of the interconnected electrical system (US\$6.3 million).** Four rural electrification projects will be funded in selected isolated areas of the country, from renewable energy generation systems distributed with micro-networks. The activities include the final design, construction and supervision of the projects.

Component 2: Strengthening of management capacities. (US\$0.7 million). Specialized consulting work, workshops and programs for training and exchange of experiences will be provided to ensure the financial and operational sustainability of the isolated electrification systems. Activities designed to achieve the following will be carried out: (i) encourage the participation of women in the construction, operation and supervision phases of the projects; (ii) identify and encourage the participation of private companies in the distribution and commercialization of energy; and (iii) strengthen the operational and financial capacity of the FOSODE for appropriate management in the development of rural electrification projects through the design, construction and supervision of micro-networks. The provision of specialized tools for the design, supervision and assessment of rural electrification experiences will be financed.

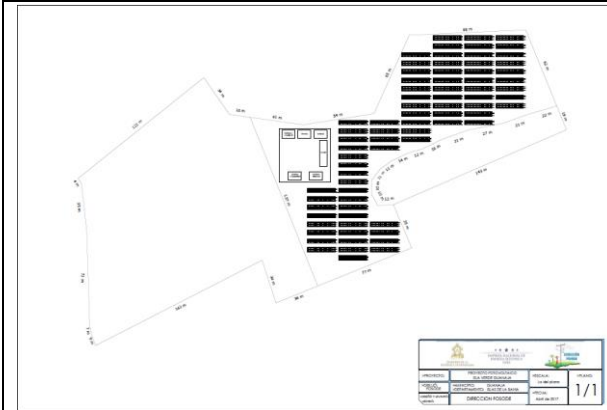


Figure 1 - Guanaja Island solar system

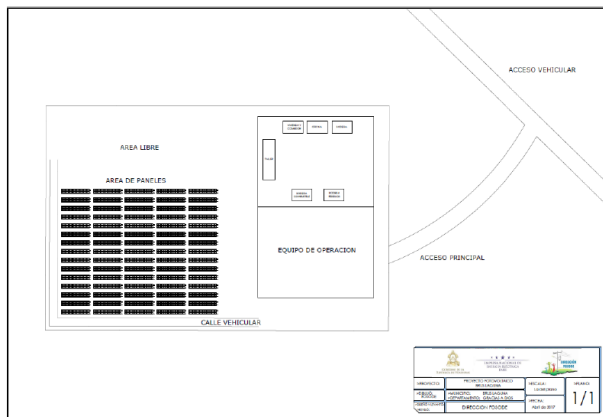


Figure 2 - Brus Laguna solar system

Impacts, Risks and Main Mitigation Measures *(should ideally not exceed 3 pages)*

Each of the following subheadings should be addressed, providing information on the environment and ESHS aspects (e.g., location, significant environmental and social aspects of the area), regarding the ESHS aspects mentioned.

Assessment Requirements²

OP-703 (Environment and Safeguards Compliance Policy): B.3 (Pre-assessment and Classification), B.4 (Other Risk Factors), and B.5 (Assessment Requirements and Environmental Plans)

This program is not expected to generate negative socio-environmental impacts. Clean energy solutions to be financed are expected to reduce or replace as much as possible the use of fossil fuels and wood fuel, reducing the risk of contamination of soil and water bodies and the pressure on forests. This operation has been classified as low risk B.

At the moment, environmental and social analyses have been performed for the 4 systems which also include sufficient environmental information and a description of the sociocultural environment. Environmental and social management plans for the main risks of the project, such as the preparation of the population and the final disposal of waste at the end of the useful life of the

² If B.14 (Multiphase or Repeated Loans), please include the necessary assessment/audit.

batteries and the solar panels, are included as an attachment to the SEA. A public consultation was held according to the provisions of the indigenous peoples policy, presenting the results of the SEA and mentioning the benefits to the beneficiary community on Guanaja Island.

In terms of analyzing alternatives, there are two installation sites available presently on Guanaja Island. Both sites were analyzed respectively with their risks and impacts and are included in the SEA. A third site was rejected as it is located in the buffer and non-construction area on the protected area of the island.

In all the cases of the 4 different sites where the solar systems are to be installed, the Honduran national environmental authority has included the official licensing reports.

It was decided that a more robust plan for the preparation of workshops by the executing agency should be prepared, as well as more detailed supervision of the projects. Better tracing and identification of potential risks and impacts of the distribution line on Guanaja Island. Also, a history of ownership of the sites. That information will be added in the new SEA which will replace the current one before OPC. The sites will be visited once construction begins.

Consultations

OP-703 (Environment and Safeguards Compliance Policy): B.6 (Consultations); and Consultation Requirements of OP-710 (Operational Policy on Involuntary Resettlement), OP-761 (Operational Policy on Gender Equality in Development), and OP-704 (Natural Disaster Risk Management Policy) if applicable.

As established in the regulation (Agreement 08-2015), it is the responsibility of MIAMBIENTE (Ministry of Environment) to promote the public participation of civil society during the environmental assessment process of projects, works or activities considered to be significant from an environmental perspective.

This program must include a consultation process, bearing in mind that the Brus Laguna project is located in a region where indigenous communities are found. Also on Guanaja Island Afro-Honduran groups are considered to be Garifunas. Consultations should be made following the Indigenous Peoples Policy of the Bank (OP-765). To date, only two socialization processes have been carried out with the inhabitants of Guanaja Island.

For the project consultation process, specific consultation will be through targeted and broader community audiences in order to bring together the broadest representation of possible actors, which will serve to hear the main concerns and recommendations of the community on each project. The purpose of this will be to gather input for their improvement, also creating spaces that help establish links for good relationship with the communities. Given that it concerns the construction of a new project, the consultation should focus on presenting the benefits and impacts associated with its development. The stages set out below will be followed in the consultations:

- a. Establishment of background of community relationship
- b. Mapping of actors
- c. Preparation of material for consultation
- d. Coordination meetings with local authorities on Guanaja Island and Brus Laguna
- e. Scheduling of date and venue for socialization meetings (consultation)
- f. Preparation of invitations (one printed, another by more personalized means)

The meetings will follow the structure below:

- a. Presentation of the project by the ENEE
- b. Presentation of the rural electrification project
- c. Round of comments, questions and answers: A moderator is suggested
- d. Closing of the session and signing of minutes with main points

To date two public consultations have been held on the location of Guanaja Island. Both consultations were made in a mixture of Spanish and English according to the local language. The other three consultations will be made in the coming weeks where a consultation plan has been prepared. A first socialization program was held on 20 April on Guanaja Island, with the assistance of the Municipal Mayor of Guanaja Island, Spurgeon Miller; the Director of the Rural Electrification Social Fund, Mario Cardona; the IDB Environmental and Social Consultant, Juan Andrés López; the representative from the ENEE's environmental studies unit, Pamela Arias; the social and technical coordinator from FOSODE; and representatives from the community of Guanaja Island, including business persons, hoteliers, tourism service providers, hardware and transport services. The following matters were addressed in the meeting: presentation of the project, current energy supply problems on the island, potential solutions, location of the generation plant, next steps.

The main problems of the island concerning electric power supply and consumption were discussed. The main points that the community discussed were: The biggest problem is its high cost for users, considering that a significant part of the local commercial and production activity depends on electricity (i.e. for ice production, air conditioning and cold chains, and for tourist and food services); the relatively high cost of electricity (around USD0.11/kWh) is very burdensome and represents a high percentage of local costs. The cost issue is aggravated by the fact that the island's sewage treatment service depends on the islanders paying for energy, which has ceased happening because of the high cost. Another problem stated by participants is the lack of reliability of the system, since there are outages and variations in the voltage, causing damage to the electrical equipment connected to the network. This and the high cost of energy has necessitated own generation plants. Complaints have also been made regarding the company currently providing the energy service, due to the high costs and lack of efficiency. The Mayor commented that the contract is going to be canceled or terminated and that there will be a new operation contract for the new system installed as part of the IDB program.

During the analysis mission, there was also a second consultation very similar to the first, but with different actors. Owners of hardware stores, hotels and supply stores. The concerns were the same and the community is very excited that the project is going to become a reality to lower the cost of energy and ensure that the island receives the title of "Green Island".

Dissemination of Information

OP-703 Environment and Safeguards Compliance Policy: B.5 (Assessment Requirements and Environmental Plans);

OP-102 (Access to Information Policy)

Environmental and social analyses have been disseminated online, in accordance with the access to information policy on the IDB's website and the website of the executing agency ENEE. Those

environmental and social analyses were considered “fit for disclosure”; a version with missing information that was identified during the analysis mission will be replaced prior to the project going to OPC and the Board.

Environmental and Social Impacts and Risks

OP-703 (Environment and Safeguards Compliance Policy): B.8 (Transboundary Impacts), B.9 (Natural Habitats and Cultural Sites), B.10 (Hazardous Materials), B.11 (Prevention and Reduction of Pollution), and B.12 (Projects in Construction)

OP-710 (Operational Policy on Involuntary Resettlement)

OP-765 (Operational Policy on Indigenous Peoples)

OP-761 (Operational Policy on Gender Equality in Development)

OP-704 (Natural Disaster Risk Management Policy)

Environmental and Occupational Health and Safety Aspects

- The main implementation risks are associated with logistical difficulties, given the complexities of access to remote locations and the involvement of other key players, such as the communities and the private sector. To mitigate this risk, the Bank, in coordination with the ENEE and the municipalities, will define an intervention strategy, seeking strategic alliances to ensure successful implementation. During the preparation, a Risk Management Workshop will be held with the actors involved.
- The main impact of construction will be on the landscape, that is, on the ecosystem in terms of a reduction in its natural regeneration capacity, although it should be mentioned that in Guanaja and Brus Laguna both sites have already been heavily affected by human activity, so the removal of flora is limited to scrub and a few trees, with each being replaced by four trees instead of one in neighboring areas.
- The main contamination risk from the generation of waste associated with construction refers to the generation of solid waste and common liquids from construction activities. During the operation, this is related to the correct disposal of batteries in the final phase of their life, delivering them to a recycling company that must have an environmental license, or, if not, returning them to their supplier; the batteries sent for disposal must be under a roof and on a container, that prevents leaks from reaching the drainage system. Do not dispose of them in household waste or empty their content.
- The same applies for solar panels at the end of their life. Plans for the correct handling of this type of waste have been included in the SEMP, since these types of waste are characterized by being recyclable and hazardous, having been produced from the dismantling of equipment.
- Impacts on the health and safety of workers and residents in the area of influence of the project refer to risks of accidents at work from construction work and the operation of machinery and electromechanical equipment. They also refer to risks to the physical safety of the population as a result of moving vehicles and machinery. This is particularly the case during the transport of equipment, which involves the use of vans and small boats. Also, due to the proximity to the sea of one of the proposed sites on Guanaja Island, workers will have to complete a swimming course if this site is finally chosen.
- As for B9, the project will not affect national nature reserves or other protected areas. In any case, special attention will be paid to the impacts on neighboring areas. These will be mitigated with the installation of towers and high cables without easement, and with permits for forestry land use which will be limited to connect to the existing distribution network. In addition, for connection to the key of Guanaja Island it will be ensured that it passes adjacent over the current distribution cable, where there are no coral reefs. Since both of the proposed sites on Guanaja Island are on the side of the Guanaja National Marine Park, of which the

project is located in the area in which it is permitted to build and where there are human settlements (see photo 1), national park land would not be affected. As for Brus Laguna, the location of the site is located within the biosphere of the Rio Platano, which it is one of the largest biospheres in Honduras and has been declared a UNESCO heritage site; the solar plant will be located in the town of Brus Laguna, where there has already been intervention on the site and where there will be no removal of trees or any other flora apart from grass and scrub. It is worth mentioning that this is an established community.

Social Aspects - Impacts and Risks

- There are few social impacts and risks as the project will benefit the community, providing energy at a more affordable price. A public consultation plan was drawn up in which a sociocultural assessment was considered for the communities of Brus Laguna and Guanaja Island.
- The Environmental Management Plan also contains a social management plan that ensures permanent and timely communication between social and institutional actors. There will also be a complaint and grievance mechanism.
- The plan is to hire local personnel for the construction, but because the local population is limited in technical matters, personnel with mainland experience will also be brought. It is expected that there will be 3 people per site for the operation of the solar systems in Guanaja and on Tomason Island.
- A risk that was identified in some communities, particularly in the two southern projects on Tomason Island and Concepción Maria where the systems are individual and mounted on homes, was that part of the community would not benefit in full, so it was confirmed that the communities chosen were based on a study that ensured that the populations would be concentrated and within a short radius.

The SEMP has the following plans:

Construction

- Removal of trees
- Cutting of soil and clearing of vegetation
- Reforestation
- Movement of soil
- Waste management plan
- Air management
- Water management
- Mobilization of machinery (backhoe, dump truck, transport and heavy load vehicles)
- Project management
- Industrial safety and occupational health
- Communication plan
- Social management
- Scientific and/or anthropological findings

Operation

- Contingency plan

- Industrial safety and occupational health
- Waste management plan
- Hazardous Waste Management Plan
- Signage
- Community training
- Monitoring

Closing

- Solid waste management



**EMPRESA NACIONAL DE ENERGÍA ELÉCTRICA
[NATIONAL ELECTRIC ENERGY COMPANY] (ENEE)**

**Environmental Unit.
Map of Protected Areas.**

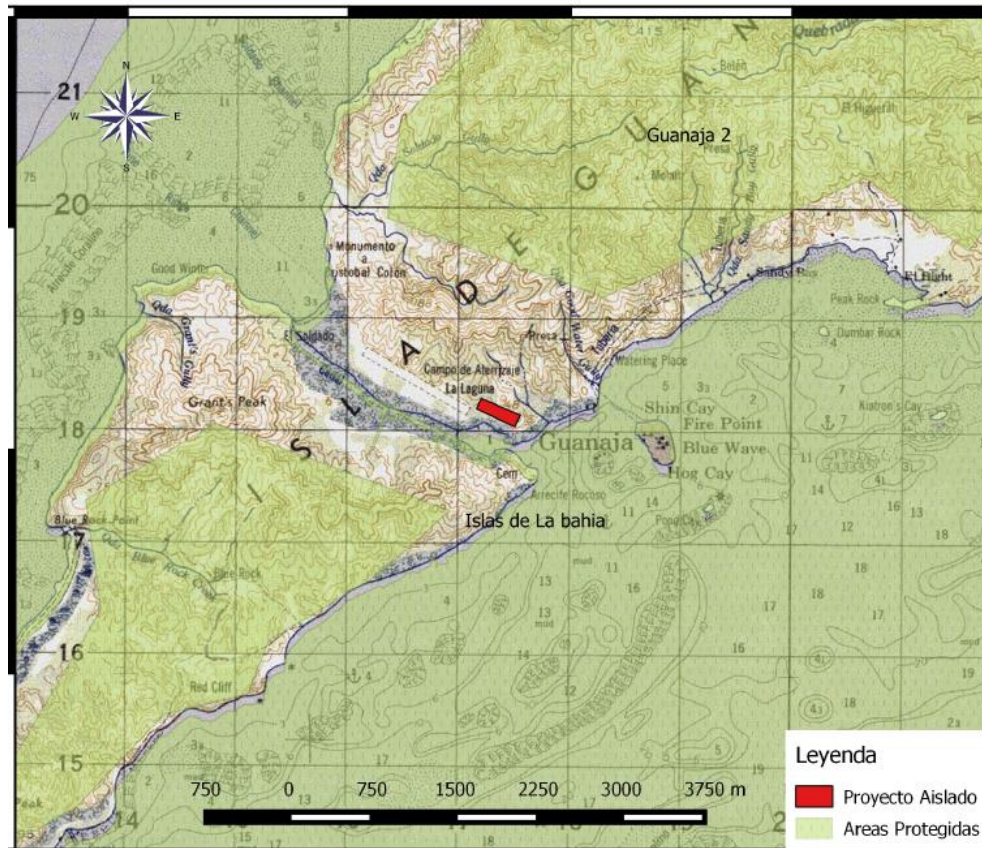


Figure 3- Guanaja Island and neighboring protected areas

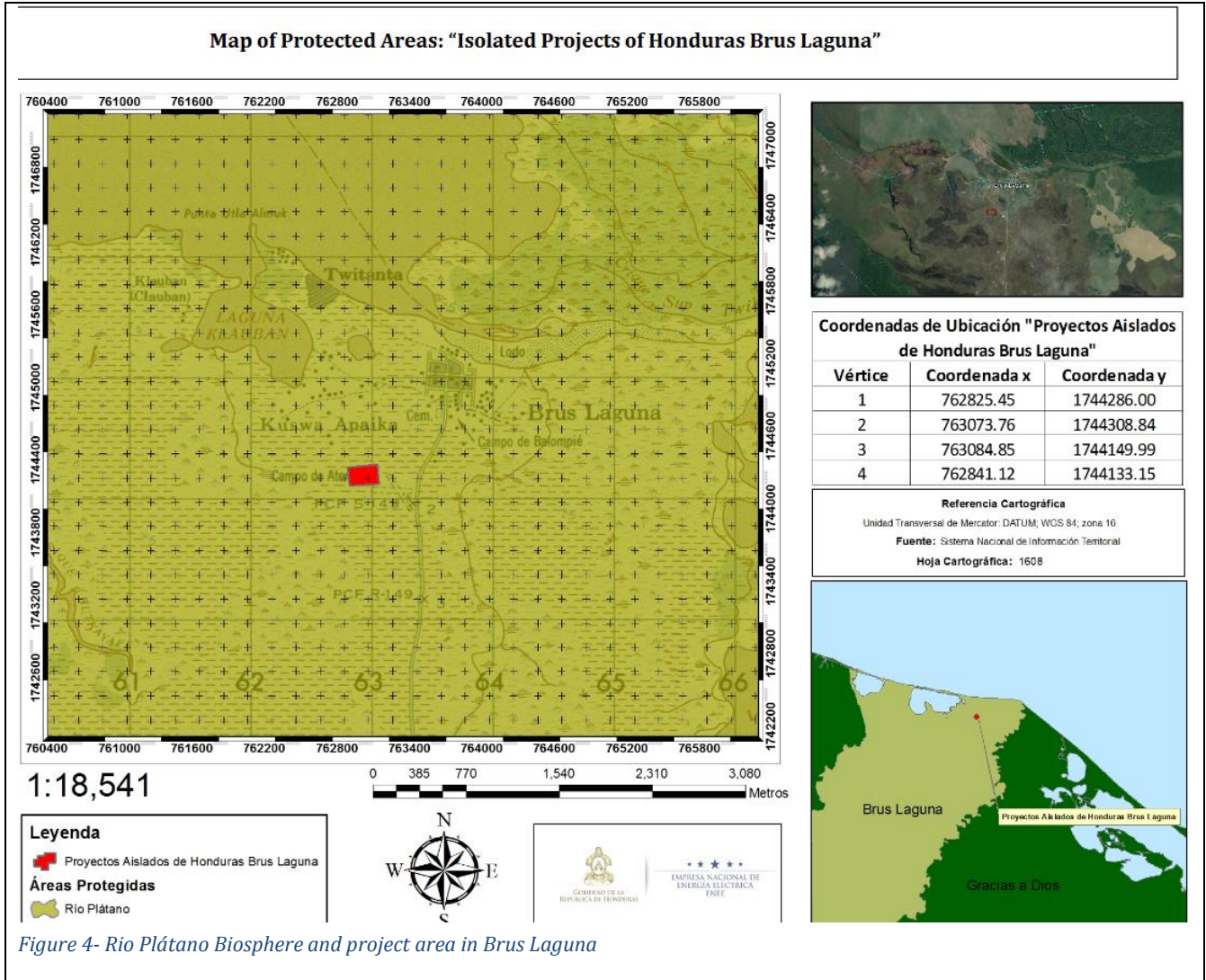


Figure 4- Rio Plátano Biosphere and project area in Brus Laguna



Figure 5 - Project area in Brus Laguna



Figure 6 - land where the solar system in Brus Laguna will be located

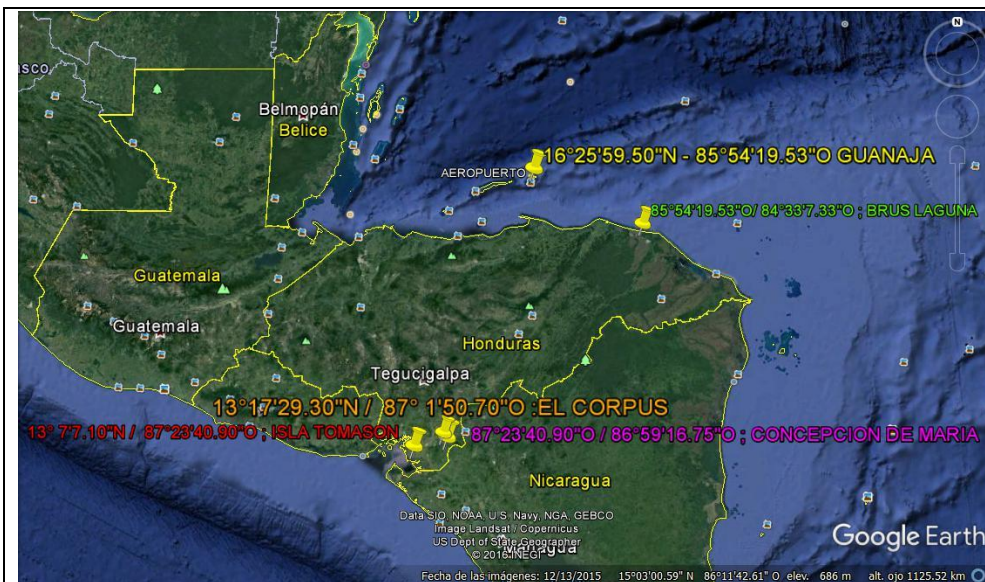


Figure 7 - Location of the systems

Policy Loans and Flexible Loan Instruments

OP-703 (Environment and Safeguards Compliance Policy): B.13 (Policy Loans and Flexible Loan Instruments)

- Not Applicable

Lifestyle and Resettlement

OP-710 (Operational Policy on Involuntary Resettlement)

Not Applicable, the project does not provide for involuntary resettlement or socioeconomic impact.

Indigenous Peoples

OP-765 (Operational Policy on Indigenous Peoples)

It was decided to activate the indigenous peoples policy since two of the beneficiary communities are considered indigenous communities under the IDB policy. For this it was decided to perform a sociocultural assessment and carry out the public consultations according to the parameters indicated by the policy.

It was identified that the communities of Brus Laguna and Guanaja Island would not be affected by the project; on the contrary, they would benefit. It should be added that the sites are owned by the municipality and are private. It is not communal land. Irrespective of this, the executing agency has been requested to provide a history of ownership of the sites to ensure that the sites where the solar systems are to be installed do not have any ownership problem.

On Guanaja Island the population is concentrated on the Key and in the other communities included in this area. This population is characterized by its strong ethnic diversity, mixing English blacks, English whites, Miskitos, Ladinos and foreigners. On Guanaja there is a strong migratory flow from the mainland, caused by the demand for labor, mainly female personnel in the seafood processing plants. At present, the inhabitants of the Bay Islands or islanders as they are called, “are not a phenotypically homogeneous group. Besides those that have a European phenotype, there are those of mixed black and English ancestry who characterize themselves in their own language as ‘browns’ (coffee-colored or dark skin) and those who are less mixed as ‘colored’ (Caracoles). The

proportions of these diverse racial groups are not uniformly distributed over island territory, showing that no racial segregation exists on the islands. However, this is recognized socially.

As for Brus Laguna, it is the municipal head of the municipality of the same name in the department of Gracias a Dios in Honduras. The current population is 10,183 inhabitants. This department historically known as La Moskitia is the present territory of the Miskitos, Pech and Tawahkas indigenous peoples.

The economy of the municipality is based on fishing and agriculture production. There are more than 200 artisanal fishermen on whom approximately 7,250 people depend for their livelihood. Most do not have appropriate equipment to take advantage of the resources of the Rapa, Zakatá and Bismuta lagoons, which are part of this municipality. Lobster fishing by Miskito divers in the Caribbean Sea is the most important in terms of resource value. There is no chance that the livelihood of the population would be affected. In fact, households will have more resources because they won't have to spend on diesel for electricity generation.

Over the last 3 years, people from the coastal communities of Barra Patuca, Brus Laguna, Cocobila, Nueva Jerusalén and Ibans have been working as day laborers and fishermen catching jellyfish with the Chinese or Eastern fishing companies that are settled along the coastal strip of the Municipalities of Puerto Lempira and Brus Laguna.

Gender Equality

OP-761 (Operational Policy on Gender Equality in Development)

The operation does not foresee any impacts that this could have on access to benefit or due to disproportionate distribution of adverse impacts on the operation. gender

For the individual installations on homes of the southern projects in Cholulteca, specifically for the communities of Tomason Island and Concepción María, system administration support workshops are planned by the executing agency, as most of the male population work in fishing so most of the solar system administrators will be women.

Disaster Risk Management

OP-704 (Natural Disaster Risk Management Policy)

The disaster risk classification for the project was moderate. In any case, ENEE was asked to include in the Environmental Analyses a risk assessment of coastal flooding for the sites of Guanaja Island and Brus Laguna based on the literature available in the area.

This is because the Guanaja Island project is located in a hurricane zone. It was decided that once the plant location has been completed, a more in-depth study on climate change and hurricane risk will need to be carried out.

Supervision

OP-703 (Environment and Safeguards Compliance Policy): B.5 (Assessment Requirements and Environmental Plans) and B.7 (Supervision and Compliance)

OP-710 (Operational Policy on Involuntary Resettlement)

OP-765 (Operational Policy on Indigenous Peoples)

OP-761 (Operational Policy on Gender Equality in Development)

OP-704 (Natural Disaster Risk Management Policy)

Biannual environmental reports will be submitted that must reflect the environmental performance in the project during the period established. These reports must be signed by the Environmental Officer and must include at least the following:

- Summary of the construction tasks performed
- Evolution of environmental management indicators
- Control sheet of planned actions in the SEMP
- Indicators
- Contingencies produced
- Training provided
- Identification of unforeseen environmental difficulties or problems
- Corrective measures applied and preventive measures to be applied.
- Proposed modification or expansion of the SEMP.
- Record of meetings, workshops or meetings with residents.
- Reports associated with the monitoring and processing of the archaeological impact.

An annual final environmental report will be submitted which must be signed by the Environmental Specialist. It will provide a synthesis of the biannual reports and evaluation of the environmental management of the contract.

The ESG team will carry out an annual monitoring mission.

Legal Requirements *(ideally this should not exceed 3 pages)*

The Borrower undertakes to deliver, before each individual project of the Program goes to the Board, through the Executing Agency, for the review and non-objection of the Bank, the following: i) complete sociocultural assessment with the missing points in Brus Laguna; ii) history of the site and title of the sites where the systems will be installed in Brus Laguna and on Guanaja Island; iii) include disaster risk according to current available information (something more substantial must be included later once the land in Guanaja is defined; iv) more detail on the workshop preparing women to operate the solar system; v) environmental analysis including a report on consultations and everything mentioned above; vi) have the site defined on Guanaja Island ensuring it does not interfere with protected areas and is of low disaster risk.

The Borrower undertakes to submit to the Bank, through the Executing Agency and prior to physically starting any work, evidence that all environmental and social permits have been granted, including environmental permits and consultations and/or outreach workshops in accordance with the provisions of the Environmental and Social Management Report.

Summary of Compliance with IDB Safeguards Policies

Table: Summary of Compliance with IDB Safeguards Policies³

Policies / Guidelines	Pertinent Aspects of Policies / Guidelines	Status of Compliance with Policy / Guideline Requirements and Justification	Requirements / Actions / Plans
OP-703 Environment and Safeguards Compliance Policy:			
B.2 Legislation and National Regulations	Environmental license National law	Compliance of the site prior to the start of construction. Honduran Legal Framework and IDB requirements	Provide the bank with a copy of the environmental licenses Applies for this Program. Where the law requires less than the IDB safeguard standards, the latter will also apply. It will be verified that the solar installations and solar connections comply with national law.
B.3 Pre-Assessment and Classification	Classification	The operation has been classified as B according to the information available.	If the borrower wants to change the site for installation on Guanaja, the impacts and risks will be reassessed according to the new site and an updated SEA will have to be submitted.
B.4 Other Risk Factors	Associated Installations Social experts in La Mosquitia	There are no associated installations ENEE must count on experts in the Miskito language to carry out the consultation as set out in OP-765 and B6.	The right-of-way of the current distribution line will be used. The analysis of this line must have more substance prior to OPC in the updated version of the SEA. The Brus Laguna consultation report must include social support results.
B.5 Assessment Requirements and Environmental Plans	Environmental and Social Analysis	The SEA drafts have been completed. However, the additional information requested must be included in terms of the	Prior to OPC, the new SEA must be ready to be replaced on the pages of the Bank and ENEE.

³ Please note that the ESG is preparing a conformity checklist.

		distribution line, history of sites and natural disasters and climate change risk.	
B.5 Assessment Requirements and Social Plans	Environmental and Social Analysis	The SEA drafts have been completed. However, the additional information requested together with the updated sociocultural assessment and consultation report must be included.	Prior to OPC, the new SEA must be ready to be replaced on the pages of the Bank and ENEE.
B.6 Consultations (including consultations with women, indigenous peoples and/or minorities)	<p>Consultations with beneficiaries and actors</p> <p>Consultation including the provisions of OP-765</p>	<p>The project will hold prior consultations with territorial ethnic communities and affected communities.</p> <p>Applies to this Program. Participation and consultation activities must be carried out, as part of a Participation Plan (including a complaint management mechanism). The methodology applied must be aligned with the indigenous peoples' policy.</p>	Prior to OPC, the new SEA must be ready to be replaced on the pages of the Bank and ENEE. These SEAs must include the consultation reports.
B.7 Supervision and Compliance	Annual monitoring and supervision	The bank will monitor compliance by the executing agency/borrower with all safeguards requirements stipulated in the loan agreement and during project execution. The local implementation agencies will carry out an audit of construction work and implementation with the help of appropriate environmental and social specialists.	Biannual monitoring report and annual monitoring report. The IDB will carry out annual supervision.
B.8 Transboundary Impacts	N/A	There are no transboundary impacts	

B.9 Natural Habitats	Conservation Areas and Protected Areas	<p>The project will not affect national nature reserves or other protected areas. In any case, special care of the impacts on neighboring areas will be taken, with the installation of towers and cables. It will be ensured that they use the existing right-of-way.</p> <p>It will also be ensured that they do not build in the protected area of Guanaja. Brus Laguna is located within the Rio Plátano biosphere conservation area. However, the project will not affect the conservation area as it will be installed in a village that has already experienced major anthropogenic impact.</p> <p>A better analysis of the possible layout of the distribution lines has been requested to ensure that there is no intersection with the buffer zone of the Guanaja marine park.</p>	The project will not affect the adjacent reserves on Guanaja Island. It will be monitored during construction to ensure that they are not affected.
B.9 Invasive Species	N/A		
B.9 Cultural Sites	N/A	Although not applicable for the project, a response plan was included in the SEMP to archaeological findings, in case of any.	It is already included in the SEMP.
B.10 Hazardous Materials	Battery and panel waste	The program has the potential to contaminate if batteries and solar panels at the end of their useful life are not handled and disposed of appropriately.	A management plan has been included in the SEMP for the proper disposal of batteries and solar panels at the end of their useful life.
B.11 Prevention and Reduction of Pollution	Construction Materials	The implementation of the Program has the potential to contaminate the environment in particular in relation to the management of construction materials.	The program will not create any type of waste other than that generated during the construction and normal operation of the infrastructure (cleaning and special or hazardous waste). Management programs have been included in the SEMP for this.

B.12 Construction projects underway	N/A	The construction phase of the project has not yet begun.	
B.13 Policy Loans and Flexible Loan Instruments	N/A		
B.14 Multiphase or Repeated Loans	N/A		
B.15 Cofinancing Operations			No other banks or funds are cofinancing the operation. There is no local contribution at the moment.
B.16 National Systems	N/A		
B.17 Acquisitions	Suppliers and contractors	Ensure that contractors, operators and suppliers adhere to the program's environmental and social management plan and also comply with IDB safeguards.	A monitoring and supervision program is specified by ENEE in the SEMP to ensure compliance with the environmental and social management plan described in the program.
OP-704 Natural Disaster Risk Management Policy			
Disaster Risk Assessment	Coastal floods and strong winds	A brief analysis of the history of floods and strong winds in the area has been included for Guanaja Island.	. A basic risk analysis of climate change and hurricanes must be carried out prior to the start of construction.
Disaster Risk Action Plan	Contingency plan	Correct actions to be taken in case the plant stops operating due to a disaster risk.	A contingency plan has been included. If a high risk is identified in the more in-depth climate change disaster risk analysis, a contingency plan will also be included.
OP-710 Operational Policy on Involuntary Resettlement			
Minimization of Resettlement	N/A		No resettlement or socioeconomic impact is anticipated.
Resettlement Plan Consultations	N/A		
Impoverishment Risk Analysis	N/A		
Resettlement Plan or Resettlement Framework (Prior to the Analysis Mission / Board Approval)	N/A		

Lifestyle Restoration Program	N/A		
Consent (Indigenous Peoples and other Rural Ethnic Minorities)	N/A		
OP-765 Operational Policy on Indigenous Peoples			
Sociocultural Assessment	Yes	Indigenous peoples will not be affected; they are beneficiary communities. A sociocultural assessment has been included in the environmental analyses as indicated by the indigenous peoples' policy. This is because on Guanaja Island some inhabitants are considered Garifunas and in Brus Laguna some are considered Muskitios. Consultations must include the provisions of OP-765.	Cultural assessments must be expanded and updated. They must also be integrated with the consultation report in the SEA prior to OPC.
Good Faith Negotiations	N/A		
Agreements with Affected Indigenous Peoples	N/A		
Plan or Protection Framework, Compensation and Development of Indigenous Peoples prior to Board Approval	N/A		
Evaluation and Treatment of Discrimination-Related Issues	N/A		
Transboundary Impacts Faced	N/A		
Impacts on Isolated Indigenous Peoples	N/A		
OP-761 Operational Policy on Gender Equality in Development			

Unequal access to project benefits / compensation measures	Administration of use in individual solar system by women	Because in the southern projects (Tomason Island and Concepción Maria) much of the main economic activity is fishing. A course will be given to women on administration of the system.	The course is mentioned, but the ENEE has been asked for more detail and to provide the IDB with this program prior to program execution.
Unequal introduction of unpaid work	N/A		
Increased risk of gender-based violence, including sexual exploitation, trafficking in persons and sexually transmitted diseases	N/A		
Breakdown of Information on Gender Impact	N/A		
OP-102 Access to Information Policy			
Dissemination of Environmental and Social Assessments ⁴ Prior to the Analysis Mission, QRR and sending of documents to the Board ⁵	Dissemination	The environmental analyses and environmental strategy have been published on the IDB website. The SEA has also been published on the ENEE website.	They are now online.
Provisions for the Dissemination of Environmental and Social Documents during the Implementation of the Project	Provision and Dissemination	The environmental analyses and environmental strategy have been published on the IDB website. The SEA has also been published on the ENEE website. However, an updated version will be produced with the missing information and the final consultations report.	This updated SEA must replace the previous one before the project goes to OPC.

⁴ Environmental and Social Assessments include EIAS, SEMP, PRI, MRI and ESMF

⁵ Please refer to the Protocols for the Documentation and Dissemination of Environmental, Social and Health and Safety Information for more details on the dissemination of the different Environmental and Social Assessments.

Technical Cooperation Document

Support for the Use of Climate Finance Instruments for Low-Carbon Cook-stoves

I. Basic Information on the Technical Cooperation (TC)

▪ Country/Region:	Honduras
▪ Name of the TC:	Support for the Use of Climate Finance Instruments for Low-Carbon Cook-stoves ¹
▪ Number of the TC:	HO-TXXXX
▪ Team Leader/Members:	Omar Samayoa (CCS/CGU) (Team Leader); Carlos Jacome (INE/ENE) Alternate Leader, Claudio Alatorre (CCS/CSD) Scarleth Núñez (CID/CHO), Cecilia del Puerto (FMP/CHO), Nadia Rauschert (FMP/CHO) and Fausto Castillo (FOMIN/CHO)
▪ Taxonomy:	Client Support
▪ Abstract authorization date	May 2017
▪ Beneficiary:	Honduras
▪ Executing agency and contact name:	Inter-American Development Bank (IDB)
▪ IDB funding requested:	US\$131,000.00
▪ Local counterpart funding:	US\$ XXXX
▪ Disbursement Period (including implementation period):	Implementation: 24 months. Disbursement: 18 months.
▪ Required Start Date:	August 2017
▪ Consultant Types:	Firms and individual consultants
▪ Prepared by the Unit:	CSD/CCS, INE/ENE
▪ Unit Responsible for Disbursement	Honduras Country Office (CHO)
▪ TC included in the country strategy:	Yes
▪ TC included in the Country Program Document (CPD):	No
▪ Sectoral Priority of GCI-9 ² No. 5:	Environmental protection, response to climate change and promotion of renewable energy

II. Objective and Justification

2.1 **Objective:** Support the preparation of a proposal for the Use of Climate Finance Instruments for Low-Carbon Cook-stoves, e.g. through the design of a National Appropriate Mitigation Action -NAMA

2.2 **Justification:** In April 2017, the Climate Investment Fund (CIF) approved the proposal for Honduras to access SREP funds intended to strengthen the regulatory, institutional and energy policy framework in Honduras, to facilitate the development of renewable energy,

¹ Low-carbon Cook-stoves are devices used for cooking food that are more efficient in energy consumption, including from biomass, propane gas, etc.

² Ninth General Increase of Resources

in accordance with national objectives for country development (Investment Plan of Honduras). Specifically, this TC seeks to support the development of policies, laws, regulations, rules, standards and incentive plans, while promoting the technical capacity to improve the integration of renewable energy in the sector energy. The Government of Honduras (GoH) is implementing actions to expand the use of eco-stoves through the “Vida Mejor” Program, which includes in the healthy housing component the distribution of Envirofit model energy efficient biomass stoves. The Foundation for Comprehensive Development of Honduras (FUNDEIH) is responsible for the distribution and the installation of the Envirofit eco-stoves. They have managed to install a total of approximately 210,000 eco-stoves, divided into the following technological models: 40,000 Justa model, 85,000 Justa 2x3 model and 80,000 Envirofit model. A reduction of 2.7 tons of CO₂e/year per stove and an operating life of 5 years is estimated. In addition, the Cook-stove Program funded by SREP through Fundación Vida is currently in implementation.

2.3 Firewood represents the main energy source in Honduras, accounting for 77% of primary energy consumption. 54.46% of the population consumes firewood nationwide and 88% of the population consumes firewood at the rural level, which has an impact on the environment through the degradation caused by its unsustainable use, and also on health, especially for women and children.

2.4 Given the relevance in emissions that the consumption firewood has, the GoH included in its Nationally Determined Contribution -NDC- a reduction of 39% in firewood consumption and a 15% reduction of emissions relative to the BAU scenario in the energy, agriculture, industrial process and solid waste sectors.

Honduras recently had approved its Revised Investment Plan for the SREP, which includes in one of its components USD 150,000.00 (reduced to 131,000) for the preparation of a NAMA to seek financial support at climate change windows. At the request of the GoH, the IDB will be the execution agency of these resources. The SREP was launched in 2009; its aim is to catalyze expanded investment in renewable energy markets in low-income countries, allowing government support for market creation and private sector implementation.

2.5 The SREP Subcommittee approved its Investment Plan for Honduras on November 4, 2011, updated in March 2017. The update considers three components to be implemented by the Bank: (i) Strengthening of policies and regulatory framework for ER - \$ 850,000; (ii) Sustainable Rural Electrification - US \$ 10,195,000; and (iii) Support for the development of the ER connected to the grid- US \$ 18,645,000.

2.6 In this context, this current technical cooperation is prepared, which seeks to generate an information base that allows the country to generate a tool for the management of financial resources for climate change, as well as to complement and catalyze actions in this sector for their contribution to the reduction of GHG emissions as part of its NDC.

III. Component Description and Budget

A. Component 1. Coordination and Preparation of the NAMA (Amount USD 81,000.00).

- 3.1 To facilitate stakeholder participation in the development of the NAMA, the project will include resources to finance a consultant who will have the responsibility of managing the formulation process of the document and inter-institutional coordination, as well as the alignment of the proposal with the country's institutional framework and policies, especially that related to the National Climate Change Law, energy policy, Nationally Determined Contribution -NDC, the poverty reduction strategy, the National Mitigation Plan, among others. Likewise, this component will finance the development of workshops, meetings, exchange activities, etc., to facilitate the involvement of stakeholders involved in this activity.
- 3.2 The institutional coordination process for the NAMA will use platforms developed in the technical committee of the climate change direction in the Ministry of Energy, Natural Resources, Environment and Mines (Miambiente) and the Honduran Normalization Agency, in coordination with the Presidential Office for Change Climate (Clima+).
- 3.3 The reactivation of the NAMA Eco-Stove national group, created in 2014, is contemplated. It will be conformed of different stakeholders in the investment lines, with multisector representation, including local authorities, indigenous groups, local communities, NGOs, the private sector, academia and other members of civil society. The coordination of this will be promoted through of the Presidential Office for Change Climate (Clima+).
- 3.4 The proposal will be aligned with the National Plan, the National Vision, the 20/20 Plan, the Poverty Reduction Strategy, the "Vida Mejor" Government Plan, the National Climate Change Law, etc.
- 3.5 Along with these institutions and governance platforms, an activity will be carried out to gather existing secondary of information that will serve as a basis for the identification of investment opportunities to address the identified barriers for the implementation of the NAMA.

B. Component 2. Generation of technical and methodological information (USD 50,000.00).

- 3.6 Resources will be used for the development of a proposed National Appropriate Mitigation Action -NAMA- on eco-stoves, which could be prepared in some format used by climate financing funds that responds to the requirements of the United Nations Framework Convention Climate Change on Climate Change. This would include information on the sector's background, current governance arrangements, the legal and institutional framework related to the subject (including alignment and coordination with the NDC of the country), institutional capacities for monitoring the

implementation, estimates of potential mitigation, activities and technologies to achieve emission reduction, funding opportunities with the public, private, and international sectors, among other. Similarly, to collect and generate a base line of available information as input for the preparation of a system for Monitoring, Reporting and Verification -MRV-, according to guidelines established by the United Nations Framework Convention Climate Change on Climate Change -UNFCC- for the NAMAs. Taking into account the specificity of the subject, the experience and work that has been done by a non-governmental organization, the Netherlands Development Organization (SNV) on this issue in Honduras, and the continuity that the NAMA design of eco-stoves represents, is expected to select the Netherlands Development Organization SNV through the single source method.

Table 1. Indicative Result Matrix

Component	Result	Indicator
Component 1. Coordination and preparation of the proposed NAMA for Eco-Stoves.	Institutional arrangements for the FIP established and a Proposal of the NAMA for eco-stoves developed.	Minutes of meetings; Proposal document for a NAMA of eco-stoves.
Component 2 Generation of technical and methodological information	Baseline information, systems and/or platforms for MRV.	Document with technical and methodological information for the implementation of the NAMA.

Table 2. Indicative Budget (US\$)

Component	Description	IDB Financing (US\$)	Counterpart	Total
Component 1	Coordination and preparation of the proposal of the NAMA for eco-stoves.	80,000.00		
Component 2	Generation of technical and methodological information	51,000.00		
Total		131,00.00		131,000.00

IV. Executing Agency and Execution Structure

- 4.1 The executing agency will be the IDB, who will hire consultants to support the secondary information gathering activities, the development of workshops and the formulation of the Investment Plan, as well as conceptual notes on prioritized projects. Considering that the Government of Honduras, the Ministry of the Environment selected the Netherlands Development Organization (SNV) to support the design of the NAMAS of eco-stoves, this TC consider to contract the Netherlands Development Organization SNV for the technical methodological consultancies.
- 4.2 The Presidential Climate Change Office will be the governance mechanism the project will use to present, discuss and agree on any decision related to formulation of the proposal for the NAMA.

V. Project Risks

- 5.1 Limited participation by the stakeholders. This risk is mitigated through the conformation of governance structures for the preparation and implementation of the Investment Plan.
- 5.2 Difficulty in accessing the information for the generation of a monitoring, reporting and verification system. To mitigate this risk, the Clima+ (Presidential Climate Change Office) platform will be used, which in its coordinating role in supporting access to this information.

VI. Social and Environmental Classification

- 6.1 According to an analysis of the environmental and social safeguards of the Bank, this operation has received the classification 'C'.

VII. Annexes

- Annex I: Request letter from the government (pending)
- Annex II: Terms of reference (pending)
- Annex III: Procurement Plan (available upon request)