

Cover Page for Project/Program Approval Request			
1. Country/Region:	Honduras	2. CIF Project ID#:	XSREHN007A
3. Source of Funding:	<input type="checkbox"/> FIP	<input type="checkbox"/> PPCR	<input checked="" type="checkbox"/> SREP
4. Project/Program Title:	ADERC – Transmission (Phase 1)		
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> 7.000 <sup>1</sup>	<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><b>Fit with the Investment Plan of Honduras</b></p> <p>The original <a href="#">SREP Investment Plan</a> (IP) for Honduras, endorsed by the SREP Sub-Committee on November 4<sup>th</sup>, 2011, included the <a href="#">Grid-Connected RE Development Support Component</a> (<i>Apoyo al Desarrollo de las Energías Renovables en Conexión con la Red</i>, ADERC), with a total resource allocation of USD16.7 million. This component was in turn divided into generation and transmission subcomponents. A Project Preparation Grant of USD 0.5 million was approved by the SREP Sub-Committee in June 2015.</p> <p>The <a href="#">Revised SREP Investment Plan for Honduras</a>, endorsed by the SREP Sub-Committee on April 28, 2017, explained that Honduras has experienced an accelerated development of grid-connected non-conventional RE capacity (partly with the support of SREP and CTF resources), and that, in the current context, transmission has become a bottleneck for further RE development. The GoH proposed therefore reallocating resources previously allocated to RE generation and policy development to focus on this strategic priority.</p> <p>The ADERC transmission project has a total indicative allocation of USD 12.5 million. This includes: (i) the USD 0.5 million PPG that was approved in 2015; (ii) USD 7 million in grant resources for Phase 1 (the project hereby submitted), and (iii) USD 5 million in reimbursable resources for Phase 2 (to be submitted in the coming months).</p>			

<sup>1</sup> As explained on page 16 and 17 the Revised SREP IP, these USD 7 million include USD 6.297 million of new SREP grant resources plus USD 703,000 from previously approved projects that have been cancelled for various reasons. The cancelled resources include: (i) the component previously titled SREP Honduras Operation Expenses for Investment Implementation, with an amount of USD 512,000, which was approved by the SREP Sub-Committee (as a component of XSREHN011A), but not by the IDBG; (ii) a balance of USD 65,000 that remains after the execution of the IPPG, (iii) USD 105,000 that were approved by the SREP Sub-Committee as part of the PPG for the ADERC-Generation project (XSREHN008A) but where not approved by the IDBG, and finally (iv) a balance of USD 21,000 that remains after the execution of the same PPG for the ADERC-Generation project (XSREHN008A).

## **Program Description**

The IDB approved in December 2013 the loan “Support for the Integration of Honduras into the Regional Electricity Market (HO-L1039)”, with an amount of USD 22.93 million of IDB resources, aimed at strengthening the transmission infrastructure of the country.

Given the alignment of the type of investments, the SREP Phase 1 grant (HO-G1006) will be approved within the IDB as “complementary resources” to the previous project (HO-L1039). Therefore, the internal IDB title for this ADERC Phase 1 project is “Support for the Integration of Honduras into the Regional Electricity Market and the Connectivity of Renewable Energy to the Grid”.

In addition, due to the need for further investments in power transmission, the Government of Honduras has requested a further IDB loan with a total amount of USD 80 million (HO-L1186), which is expected to be approved in the last quarter of this year. The USD 5 million of reimbursable SREP resources (Phase 2) will be part of this operation and will be focused again on supporting the increase in RE capacity in the grid.

The works to be financed with this Phase 1 include the construction of additional SIEPAC reinforcements in the northern part of the country. These investments will support the national transmission system to increase the energy commercialization in the regional electricity market and increase the share of renewable energy in the generation matrix.

The SREP grant resources will allow the following additional results to program HO-L1039. The Program’s Results Matrix (RM) is unchanged in terms of its objective and focus. The conceptual and technical continuity is, therefore, maintained. The added changes which will be financed with the additional resources provided by the SREP that reflect increases in the following outputs and outcomes: (i) increased participation of RE in the generation matrix and increased reliability of the national electricity system; (ii) reduction in the average load of the transmission transformers in the El Progreso Substation (SS); and (iii) reduction in the load of the transmission transformer in the Toncontín SS.

The complementary funding aims to continue supporting the entry into operation of one of the sections of the SIEPAC. It also aims to improve the physical infrastructure of Honduras allowing its effective participation in the Regional Electricity Market (MER). The additional resources will be used to maintain the outline of the program’s components, in the following manner:

### **Component 1. Investment in works related to the integration of Honduras into the SIEPAC.**

Including:

- a. **Expansion of the El Progreso SS (USD4.3 million).** Consisting of installing and start-up of a new 150 MVA 230/138 kV power transformer, construction of a complete 230kV switch bay and switch system, and connection of the current 50 MVA 230/34.5 kV power transformer to the low voltage side of the new transformer in the existing 138 kV bay. All works will be carried out within the area of the current SS, owned by ENEE. The El Progreso SS is currently part of the 230kV national network (SIN) and a strategic link in the electricity distribution system connecting the central and southern area with the north area and the Atlantic coast<sup>2</sup>. It has four transformers (one 50 MVA 230/34.5 kV distribution transformer,

one 50 MVA 138/69 kV transformer, two 150 MVA 230/138 kV transmission transformers), located in the city of El Progreso, Department of Yoro. Due to the increasing demand for energy in the areas serviced by the El Progreso SS, the 230/138 kV transformers are currently overloaded, and any damage to them could compromise the power supply.

- b. **Expansion of the Toncontín Stage I SS (USD 2.5 million).** This consists of installing and starting up a new transformer with 150 MVA 230/138 kV capacity, and its associated equipment in the Toncontín SS. The works will be carried out within the area of the current SS, which is owned by ENEE. The Toncontín SS currently has two power transformers. Of these, one is for 44.8 MVA 230/13.8 kV distribution and it feeds the areas surrounding this substation. The other is for 84 MVA 230/138 kV distribution and it interconnects to the La Cañada “LCD” and Santa Fe “SFE” SS, which in turn feeds the strategic supplies from the Central District, Tegucigalpa and Comayaguera. The Toncontín SS is in the city of Tegucigalpa in the Department of Francisco Morazán.

**Engineering, administration, audit and evaluations.** A total of USD 0.2 million will be allocated to the activities of tracking, environmental monitoring, auditing and evaluation of proposed new investments.

#### **Update about the FOMPIER Component.**

The SREP IP for Honduras includes as well the component “Strengthening the RE Policy and Institutional Framework (*Fortalecimiento del Marco de Políticas e Institucional para Energías Renovables*, FOMPIER)”. The FOMPIER project, submitted by the GoH and the IDB, with an amount of USD 850,000, was approved by the SREP Sub-Committee on 29 October 2012, and by the IDBG on 12 December 2012.

Some initial activities were carried out under this technical cooperation. However, rapid changes in the Honduran context—in particular the approval and implementation of the Power Sector Framework Law—asked for a revision of the activities that were originally planned.

The new FOMPIER Technical Cooperation activity will seek to support the reform process of the sector energy sector with emphasis on projects connected to the National Interconnected System (SIN) and in isolated areas. The main expected products are:

1. An impact analysis on the financial and operational sustainability of the electricity sector by the incentives granted to electricity generation from Non-Conventional Renewable Energy (NCRE) projects prior to the approval of the LGIE. The assessment will include recommendations to the Government to mitigate the impacts.
2. Support to strengthening of sector institutions for the elaboration of the National Energy Policy aimed at achieving national targets to increase the participation of renewable energy in the generation matrix (including projects connected to the SIN and in isolated systems).

---

<sup>2</sup> The country’s northern and Atlantic coast regions have greater industrial and tourist development and, there, a greater demand for electricity. To meet this demand, it is necessary to transport the energy produced in the central and southern part of the country. Within the transmission system the El Progreso substation represents a key hub in the interconnection of the electricity distribution system.

<p>3. Support to the sector regulator to develop the following secondary legislation: (i) guidelines for the integration of NCRE projects into the SIN; ii) sustainable rate structure for isolated systems using NCRE; and iii) distributed generation and net metering, and</p> <p>4. Support to the Government for: (i) preparation of tender documents for the purchase of energy generated from NCRE in projects connected to the SIN and in isolated areas; and ii) assessment of renewable energy sources.</p>	
<p><b>11. Consistency with SREP Investment Criteria:</b></p>	
<p>(a) Increased installed capacity from RE sources</p>	<p>The project will facilitate access of 380 MW of clean renewable energy sources (PV, wind, and biomass)</p>
<p>(b) Increased access to energy through RE sources</p>	<p>N/A</p>
<p>(c) Low Emission Development</p>	<p>The <a href="#">Nationally-Determined Contribution (NDC) of Honduras</a> to the UNFCCC includes the energy sector as part of its mitigation objectives.</p>
<p>(d) Affordability and competitiveness of renewable sources:</p>	<p>Strengthening of the transmission system will allow lower cost energy to be dispatched in an optimal fashion. It will also allow RE generation located in various parts of the country to be connected to the SIN. It will facilitate integration of RE generation projects located in the center and north of the country that have prices that do not affect ENEE’s finances.</p>
<p>(e) Productive use of energy</p>	<p>N/A</p>
<p>(f) Economic, social and environmental development impact</p>	<p>The main development impacts of this operation will be:</p> <ul style="list-style-type: none"> <li>• Technical and Institutional capacity allowing Honduras to effectively participate in the SIEPAC/MER.</li> <li>• Supporting the operational and financial recovery of ENEE.</li> </ul>
<p>(g) Economic and financial viability</p>	<p>An economic and financial analysis update was performed, to include the additional USD 7 million financing. Several alternative technical solutions were identified and assessed by ENEE. The best options were selected for each SS, based on their technical complexities, risks and financial viability, and their adequacy to solve the current bottlenecks faced by the SS to satisfy increased demand and their capacity to offer reliable and quality electricity service and reduce transmission losses. These options offered the best financial returns. SS El Progreso presented an Internal rate of Return (IRR) of 48% and Net Present Value (NPV) of USD 17 million. The NPV of SS Toncontín is USD6,2 million and its IRR is 35%.</p> <p>Based on the selected option, an economic evaluation was performed. Results for each project verified the economic benefits of the selections made to strengthen the transmission system, making it more robust and reliable, which in turn allows improvements in productivity and improvements in quality of life. The consolidated economic assessment results in an Economic Rate of Return of 55% and a Net Present Economic value of USD20 million.</p>

(h) Leveraging of additional resources	See below (section 15)
(i) Gender	See below (section 13)
(j) Co-benefits of renewable energy scale-up	See paragraphs above

### 12. Stakeholder engagement:

An Environmental and Social Analysis (ESA) and an Environmental and Social Management Plan (ESMP) for the expansion works of the El Progreso and Toncontín SSs were prepared. They are both published on the IDB’s website. The proposed works will be carried out within areas already developed with infrastructure and will not require additional land acquisition. They are considered of low complexity and will not affect natural habitats or indigenous peoples. However, being close to residential areas, there may be disturbances to the neighborhood due to noise and movement of machinery. For this reason, following an appropriate mapping of stakeholders, consultations will be held with the communities of San Juan in El Progreso and Las Uvas in Tegucigalpa, during which the main content of the Environmental Assessment will be shared. This consultation must be carried out before the operation is sent to the Bank’s Board of Directors for approval. The ESMP has been included in the ESA, along with the mitigation measures recommended for the works, responsible parties, estimated budget, as well as some additional measures identified to adapt the current infrastructure operation to reduce risks to workers and to promote sustainability of the investments in terms of environmental management and occupational health and safety. These measures must be fulfilled before the works are awarded. Risks from hurricanes have been identified, so both the contractor and ENEE must include this risk within the SS’s contingency plans, to prevent and reduce potential damage and incidents related to electrical failures, fires or explosions resulting from these events.

### 13. Gender considerations:

Equal access opportunities to men and women will be promoted during recruitment of labor for works for the expansion of El Progreso SS and Toncontín SS. Likewise, equitable access in management, and participation in consultation and complaints spaces will be ensured. Specific gender components are also being designed as part of the Phase 2 operation (HO-L1186).

### 14. Indicators and Targets (consistent with results framework):

Core Indicators (including Phase 1 and Phase 2)	Target
(a) GHG emissions reduced or avoided over lifetime (tons of CO <sub>2</sub> -eq)	10.8 M <sup>3</sup>
(b) Annual GHG emissions reduced or avoided (tons of CO <sub>2</sub> -eq/year)	540,000 <sup>4</sup>
(c) Feasible capacity of renewable energy (MW)	380
<i>Development Indicator(s):</i>	
Marketing of electricity in the MER (GWh/year)	1,000

### 15. Co-Financing (including Phase 1 and Phase 2):

	Amount (in USD million):	Type of contribution:
• Government		
• MDB (IDB)	70	loan
• Private Sector (please specify)		

<sup>3</sup> Assumes a lifetime of 20 years.

<sup>4</sup> GHG emissions reductions assuming an installed capacity of 120MW from wind, 18MW from Biomass, and 242MW from solar PV; capacity factors of 25% for solar PV and wind, and 50% for biomass. Combined margin grid emissions factor of 0.67 tCO<sub>2</sub>e /MWh for Honduras based on Clean Development Mechanism estimates.

• Bilateral (please specify)		
• Others (please specify)		
<b>Co-Financing Total:</b>	70	
<b>16. Expected Board approval date:</b>		
September 2017		

INTER-AMERICAN DEVELOPMENT BANK DOCUMENT

**SUPPORT FOR THE INTEGRATION OF HONDURAS INTO THE REGIONAL ELECTRICITY  
MARKET  
(HO-L1039) (3103/BL-HO)**

**SUPPORT FOR THE INTEGRATION OF HONDURAS INTO THE REGIONAL ELECTRICITY  
MARKET AND THE CONNECTIVITY OF RENEWABLE ENERGY TO THE GRID**

**SUPPLEMENTARY FINANCING  
NON-REFUNDABLE INVESTMENT FINANCING  
(HO-G1006)**

**DRAFT PROPOSAL FOR MODIFICATION OF RESOLUTIONS  
DE-177/13 AND DE-178/13**

This document was prepared by the project team consisting of: Carlos Jacome (ENE/CHO) Team Leader; Sylvia Larrea, Deputy Team Leader; Wilkferg Vanegas; Rodrigo Aragon; Stephanie Suber (INE/ENE); Claudio Alatorre (CSD/CCS); Nadia Rouschert (FMP/CHO); María Cecilia del Puerto (FMP/CHO); Ana Paz (CID/CHO); Milagros Cecilia Aime (VPS/ESG); and María Cristina Landázuri (LEG/SGO).

## CONTENTS

### PROJECT SUMMARY

<b>I.</b>	<b>REQUEST FROM THE GOVERNMENT OF HONDURAS FOR SUPPLEMENTARY FINANCING FOR THE PROGRAM TO SUPPORT THE INTEGRATION OF HONDURAS INTO THE REGIONAL ELECTRICITY MARKET (HO-L1039) (3103/BL-HO)</b> .....	<b>7</b>
<b>II.</b>	<b>DESCRIPTION OF PROPOSED CHANGE</b> .....	<b>7</b>
<b>III.</b>	<b>DESCRIPTION OF LOAN 3103/BL-HO</b> .....	<b>8</b>
	A. Description .....	8
	B. Progress of the program .....	9
<b>IV.</b>	<b>RATIONALE AND DESCRIPTION OF THE SUPPLEMENTARY FINANCING</b> .....	<b>11</b>
	A. Rationale .....	11
	B. Objectives and Components .....	15
	C. Outcome Indicators.....	16
	D. Financing Instruments.....	16
	E. Implementation scheme.....	16
	F. Supplementary Financing Development Risks .....	17
<b>V.</b>	<b>RECOMMENDATION OF THE PROJECT TEAM</b> .....	<b>19</b>



<b>ANNEXES</b>	
Annex I	Results Matrix
Annex II	Safeguard Policy Filter (SPF) and Safeguards Screening Forms (SSF)
Annex III	Environmental and Social Management Report (ESMR)

<b>Other documents available upon request (most of them in Spanish)</b>
<ol style="list-style-type: none"><li>1. Comments from the SPD Department</li><li>2. Updated Procurement Plan</li><li>3. Multi-year Implementation Plan (MIP)</li><li>4. Monitoring and Evaluation Plan (MEP)</li><li>5. Technical Annex I – Profile of the EI Progreso Substation expansion project</li><li>6. Technical Annex II – Profile of the Toncontín Stage I Substation expansion project</li><li>7. Analysis of the Contribution to Competitive Regional Integration</li><li>8. Analysis of Compliance with the Public Utilities Policy</li><li>9. Financial evaluation.</li><li>10. Loan proposal for the project “Support for the Integration of Honduras into the Regional Electricity Market”</li></ol>

### ABBREVIATIONS

BCIE	Banco Centroamericano de Integración Económica [Central American Bank for Economic Integration]
IDB	Inter-American Development Bank
MERBD	MER Board of Directors
CIF	Climate Investment Fund
NDC	National Dispatch Center
CNE	Comisión Nacional de Energía [National Energy Commission]
CRIE	Comisión Regional de Interconexión Eléctrica [Regional Electricity Interconnection Commission]
ENEE	Empresa Nacional de Energía Eléctrica [National Electric Power Company]
ERNC	Energía Renovable no convencional [Non-conventional Renewable Energy]
GoH	Government of Honduras
ESMR	Environmental and Social Management Report
LGIE	Ley General de la Industria Eléctrica [Electricity Industry General Act]
kV	Kilovolts
MER	Mercado Eléctrico Regional [Regional Electricity Market]
RM	Results Matrix
MVA	Megavolt ampere
MWh	Megawatt-hour
EA	Executing Agency
SO	System Operator
MO	Market Operator
PP	Procurement Plan
AOP	Annual Operational Program
ODP	Operation Development Proposal
MAP	Monitoring and Assessment Plan
SS	Substation
SIN	Sistema Interconectado Nacional [National Grid]
SREP	Scaling up Renewable Energy Program
SIEPAC	Sistema de Interconexión Eléctrica para América Central [Central American Electricity Interconnection System]
PCU	Project Coordination Unit

## EXECUTIVE SUMMARY<sup>1</sup>

- Project Name:** Support for the Integration of Honduras in the Regional Electricity Market (HO-L1039) (3103/BL-HO).  
Complementary Financing; Non-Reimbursable Investment (HO-G1006)
- Executing Agency:** Empresa Nacional de Energía Eléctrica [National Electric Energy Company] (ENEE)
- Beneficiary:** Republic of Honduras
- Direct Beneficiaries:** ENEE
- Funding Source:** The *Climate Investment Fund's* (CIF) *Scaling up Renewable Energy Program*– (SREP)<sup>2</sup>: USD 7 million under the SREP Investment Plan for Honduras Framework<sup>3</sup>. Non-reimbursable financing.
- Objective:** The objective of the supplementary financing is to improve the physical infrastructure in Honduras to allow it to participate effectively in the Regional Electricity Market (MER). This will be achieved by expanding two existing and operational substations that are part of the Honduras national transmission system. This will, in turn, promote the use of the Central American Electricity Interconnection System (SIEPAC) and facilitate the incorporation of Non-Conventional Renewable Energy (ERNC) into the National Grid (SIN). The works will be undertaken under Component I of the Program (3103/BL-HO). The additional resources of USD 7 million represent 30.5% of the original amount and will come in full from SREP donation resources.
- Implementation and Disbursement Period:** 36 months
- Procurement:** The procurement financed wholly or partly with supplementary financing resources will be carried out in accordance with the Policies for the Procurement of Goods and Works financed by the Bank (GN-2349-9) and the Policies for the Selection and Contracting of Consultants financed by the Bank (GN-2350-9).
- Special conditions:** **Conditions precedent to the first disbursement:** (i) see [ESMR](#); and (ii) that a resource transfer agreement is signed between the Republic of Honduras and the ICE establishing the resource transfer and the execution obligations for each of the parties.

---

<sup>1</sup> This proposal has been prepared in accordance with the guidelines established in the document "*Procedures for Processing Sovereign Guaranteed Operations*" dated June 2017.

<sup>2</sup> The Climate Investment Fund was approved through document GN-2604-3 and its Financial Procedure Agreement was signed with the World Bank on February 17, 2011. The SREP subcommittee will approve the use of CIF resources for this operation prior to proceeding to the OPC, in accordance with CIF procedures.

<sup>3</sup> [SREP Subcommittee Honduras Investment Plan, 2017](#).

**Special performance conditions:** (i) see [ESMR](#); and (ii) that the PCU maintains as a minimum the staff currently in charge of executing loans 3103/BL-HO and 3435/BL-HO.

**Exceptions to  
Policies and  
Procedures:**

There are no exceptions to Bank policies and procedures.

## **I. REQUEST FROM THE GOVERNMENT OF HONDURAS FOR SUPPLEMENTARY FINANCING FOR THE PROGRAM TO SUPPORT THE INTEGRATION OF HONDURAS INTO THE REGIONAL ELECTRICITY MARKET (HO-L1039) (3103/BL-HO)**

- 1.1 Through GG-478-2017 of May 2, 2017, the ENEE requested the IDB's support for the mobilization of a resource donation of USD 7 million stipulated in the Investment Plan for Honduras, under the *Climate Investment Fund's (CIF) Scaling up Renewable Energy Program*– (SREP) (¶10.8).
- 1.2 The grant (donation) resources are part of the “Support for the Development of Networked Renewable Energies (ADERC)” under the SREP's Investment Plan for Honduras.
- 1.3 The objective of the supplementary financing is to provide resources for the expansion of two existing and operational substations owned by ENEE. The expansion of these substations is necessary to facilitate the incorporation of non-conventional renewable energy (ERNC) into the National Grid (SIN). These works are part of the national reinforcement of the Honduras transmission system to promote the use of the Central American Electricity Interconnection System (SIEPAC).

## **II. DESCRIPTION OF PROPOSED CHANGE**

- 2.1 A USD 7 million increase is proposed in the financing for loan operation HO-L1039 (3103/BL-HO). This increase represents 30.5% of the original amount of USD 22.93 million. All the funds will come from non-reimbursable resources from the Climate Investment Fund, specifically from its SREP program.
- 2.2 The additional resources will finance the expansion of the El Progreso and Toncontín SSs, which are owned by ENEE, under Component I of the original program. The work to be carried out constitutes a national reinforcement of the SIEPAC transmission system. Tracking, environmental monitoring, audit and evaluation activities will also be financed.
- 2.3 The activities planned for the tendering, construction and commissioning will require 48 months from the effective date of the non-refundable investment financing agreement. The executing agency, the ENEE, already has the designs, quotations and tender documents prepared to begin the works contracting process<sup>4</sup>. The Program results financed under loan 3103/BL-HO will be those originally proposed. A large part of these results will be fulfilled this year. It is not expected that the substation expansions will generate significant negative impacts. This is the conclusion reached by the environmental analysis of the proposed works carried out by ENEE and the Environmental and Social Analysis prepared by an independent consultant hired by the Bank in compliance with IDB's environmental and social safeguards. The program's Environmental and Social Management Report (ESMR) has been updated to incorporate the assessments related to these additional works. The update also analyzes the progress of the management plans for the works in progress, as detailed below.

---

<sup>4</sup> The Executing Agency has the requisite and necessary capacity that it has demonstrated in similar works. The Executing Agency has a demonstrated ability in similar work and has developed similar processes in Bank-financed investment projects in the transmission sector including the original project.

### III. DESCRIPTION OF LOAN 3103/BL-HO

#### A. Description

- 3.1 The Program to Support the Integration of Honduras into the Regional Electricity Market (3103/BL-HO) was approved by the Inter-American Development Bank (IDB) on December 4, 2013. The total amount for the operation is USD 22.93 million, of which USD 16.05 million comes from Ordinary Capital (OC) resources and USD 6.88 million from the Special Operations Fund (SOF). The general objective of the program is to support the entry into commercial operation of one of the SIEPAC sections and improve the physical infrastructure of Honduras. This will facilitate its effective participation in the Regional Electricity Market (MER). The specific objectives are: (i) to re-establish the operational conditions of the sole SIEPAC electrical interconnection between Guatemala and Honduras, one of SIEPAC's main axes; and (ii) the operational and management strengthening of Empresa Nacional de Energía Eléctrica (ENEE) to maximize the benefits of electricity marketing in the MER<sup>5</sup>. The program is being implemented by ENEE and consists of the following components:
- 3.2 **Component I. Investment in works related to the integration of Honduras into SIEPAC (USD 19.7 million).** This component finances the following transmission works: (i) La Entrada SS, including the construction and commissioning of a substation with a transformation capacity of 50 MVA 230/34.5 kV with its associated output lines, to create a link between SIEPAC and the Honduras transmission network; the installation of three pylons for the incoming transmission lines; improvements in associated distribution lines; and the acquisition of land for the construction of the substation; and
- 3.3 (ii) Completion of works for: (a) 69 kV transmission lines: Las Flores-Erandique (62 km) and Danli-Chichicaste (33 km); (b) a 138-kV transmission line: San Pedro Sula Sur-Naco (23 km); (c) the expansion of the Las Flores and Danli substations; and (d) the Amarateca SS with a transformation capacity of 150 MVA at 230kV
- 3.4 **Component II. Strengthening of ENEE in marketing in the MER (USD 1.7 million).** Support ENEE to improve its management capacity, including: (i) creation of the Electricity Marketing/Transactions Unit in the National Dispatch Center (NDC) for ENEE energy, with the aim of promoting the benefits of energy marketing in the MER; and (ii) improving financial management of ENEE to ensure proper handling of information relating to business transactions in the MER.
- 3.5 **Engineering, administration, audit and evaluation (USD 1.49 million).** Support for supervision of the program, including environmental monitoring, auditing and evaluation.

---

<sup>5</sup> This operation was structured to address the problems identified by the action plan to improve the energy service in the west of the country, which has been declared as being in energetic emergency by ENEE. The plan involved temporary use of a section of the SIEPAC line between Panaluya (GU) and San Buenaventura (HO) with the connection of a 50 Mega Volt Ampere (MVA) mobile substation to 230/34.5 kV. However, this caused problems with the regional regulator, the CRIE, as the connection did not comply with current regional norms and regulations. The CRIE did not, therefore, approve the connection. The lack of a commercial operation in the Panaluya (GU) to San Buenaventura (HO) section hindered electricity transactions and the gaining of benefits from the regional electricity market, causing economic damages to the Network Owner Company –(EPR) as well as to the ENEE. It also put the financial sustainability and smooth functioning of SIEPAC and ENEE at risk.

## B. Progress of the program

- 3.6 A total of USD 20.9 million will have been disbursed to May 3, 2017, amounting to 91.15% of the loan resources. The main advances in the execution of the operation are described below:
- 3.7 **Component I. Funding of transmission works.** Significant progress has been made in the construction of the La Entrada SS, the most significant work under the loan, which involves 57% of the resources, physical progress of 95% and 83% financial are reported<sup>6</sup>. The assembly of the La Entrada SS is completed and its connection with the regional transmission network is being tested. Its entry into commercial operation is scheduled for June 2017. This will strengthen the marketing of power in the region in the section Panaluya, Guatemala– San Buenaventura, Honduras and will comply with the requirements of Regional Electricity Interconnection Commission – (CRIE) for the temporary connection, originally performed by ENEE.
- 3.8 The SS will increase the reliability of the energy supply in the western part of the country, strengthening the area’s electricity transmission and distribution capacity. There is growing demand for electricity in the area, resulting from the growth in tourism in the department of Copan<sup>7</sup>, as well as due to the development of the commercial and industrial sector, the latter mainly associated with the expansion of small and medium-sized coffee producers<sup>8</sup>. The SS will also facilitate the interconnection of generation projects based on renewable sources, under ENEE’s standardized quality and reliability criteria<sup>9</sup>.
- 3.9 The works mentioned in 3.2 were finished in their entirety and payments associated with financial closings have been made. The entry into commercial operation of the works has helped strengthen the national transmission system, optimize network operations, reduce congestion and improve the quality of the electricity service in certain of the country’s geographic areas. Specifically, the Amaratéca SS, the largest in the country, has improved the regulation of voltage and reactive power in the south-central area, mainly in the departments of Olancho and Paraíso<sup>10</sup>. This has reduced the overloading of several transformers at the national level. It has improved regulation, allowing energy flowing from Cañaveral and Río Lindo, the second largest hydroelectric complex in the country, to send power to the northern area. This has, in turn, avoided increasing the overloading of the El Progreso SS, which is strategic for the supply of electricity to the north of the country. The completion of the works at Las Flores – Erandique, San Pedro Sur – Naco have facilitated increased access to electricity in the north-west of the country<sup>11</sup>.
- 3.10 **Component II. Strengthening ENEE in energy marketing.** Various activities have been undertaken over the period 2013-2017 to strengthen ENEE’s capacities in the marketing of energy in the region. The component has a physical progress

---

<sup>6</sup> The difference in the percentage of financial and physical execution originates from the payment method specified in the construction and testing contract, which establishes final payments for installed equipment against the results of tests for correct operation of the substation.

<sup>7</sup> Report on electricity needs of the tourism sector

<sup>8</sup> SNV reports within the framework of the FOMIN program for sustainable coffee production.

<sup>9</sup> Hydro and geothermal projects are among those being connected.

<sup>10</sup> The improvement in the area of Paraíso with the arrival of the Danli – Chicicasté line was evident.

<sup>11</sup> Through the CABEI-financed rural electrification project.

- of 62% and financial progress of 46%. This component is less advanced than the first as the improvements in the NDC will be made between 2017-2018 and the activities were postponed by the reform of ENEE. In terms of the country's energy supply, during the cited period, Honduras has been the second-largest purchaser of energy from the MER. The average energy bought in the MER both in the contracts and opportunity markets in the period 2014-2016 increased by 90% in comparison with 2013, despite ENEE's limited transmission infrastructure.
- 3.11 The electricity marketing capacity with the MER could be higher, but it is limited by the absence of national investment in the national transmission system<sup>12</sup> resulting from the delicate financial situation in the electricity sector. This is one reasons why the GoH initiated a sectoral reform process to recover financial sustainability and promote the participation of the private sector in the electrical industry chain. The details of progress in the reform process are reported in Annex 1. However, given that most of the financial recovery in the electricity industry chain depends on the results of the distribution subsector, the GoH has decided to invest in the transmission sector. As the program to reduce losses in the distribution sector progresses this will help improve ENEE's finances.
- 3.12 As part of the main advances it has been provided with tools and knowledge to improve its marketing capacity. It has also exchanged experiences with counterpart companies in the region to optimize the system's operation and to market energy. The telecommunications and telemetry network has also been strengthened with the National Grid (SIN). As part of the process of reforming the electricity sector and restructuring ENEE, the electricity marketing and transactions units that are planned to be part of the NDC, form part of the new structure for generation and operational management. The formation of the System Operator (SO) has been undertaken in compliance with the Electricity Industry General Act (LGIE). The SO is a non-profit organization with technical ability that is independent of the bodies involved in generation, transmission, distribution and marketing. The SO has been assigned functions that include supervising and monitoring the operation of the SIN. ENEE's NDC will provide services to the SO under a remuneration scheme until the SO is capitalized and can carry out the functions assigned in the LGIE.
- 3.13 **Engineering, administration, audit and evaluations.** The engineering and construction supervision services have supported the executing agency in the effective performance of the works comprising Component I. The Project Coordination Unit (PCU) has been instrumental in executing the portfolio of IDB-financed projects and it has facilitated the support for ENEE in the execution of the JICA-financed Cañaveral-Rio Lindo generation project. The PCU has become strengthened over time and enjoys the credibility of a national institution. The results from audits of the program report a "Clean Opinion".
- 3.14 An Environmental Social Audit (ESA) has been performed on the progress of the works in the 3103/BL-HO program, to determine the degree of compliance to date with the work's SEMP. According to the audit, the works presented a satisfactory performance level, although some measures are pending execution for which an Action Plan has been designed to ensure compliance prior to the first disbursement of this supplementary financing. The measures awaiting action include plans for reforestation, installation of bird deterrents and the completion of the compensation

---

<sup>12</sup> Honduras needs to invest in the order of USD 90 million to strengthen SIEPAC's capacity and, according to reports from CDMER, it is the country with the greatest need for funding in the region.



process for the acquisition of land easements for: i) 69 kV Danlí-Chichicaste sub transmission line and ii) 69 kV Las Flores-Erandique sub transmission line. According to the information provided, this process has not finished due to cases in which the property is not yet formalized with property titles. In this context, the negotiated amount is left pending effect for when the owner has completed the corresponding legalization procedures. Further information and records have been requested from ENEE, which will be received and analyzed prior to this program being sent to the Board.

- 3.15 **Main results achieved:** To date and taking 2012 as a baseline, the program has achieved the following results: (i) increase in the marketing of energy in the MER from 310 GWh to 1,000 GWh taking into consideration the temporary approved entry into commercial operation of the Panaluya – San Buenaventura section following loan approval and completion of the required control and metering modifications to the mobile substation; (ii) increase of the installed capacity from renewable sources in the western part of the country from 22.5 MV to 85 MV; (iii) reduction in equivalent interruption time in the western area from 77 hours/year to 25 hours/year; (iii) reduction in the average percentage loading in the western substations from 90% to 60%; and (iv) ENEE staff hired and trained in marketing and electricity transactions.

#### IV. RATIONALE AND DESCRIPTION OF THE SUPPLEMENTARY FINANCING

##### A. Rationale

- 10.1 The works to be carried out are fully framed within the objectives of project 3103/BL-HO (Support for the Integration of Honduras into the Regional Electricity Market) namely “to improve the condition of Honduras’ physical infrastructure thereby allowing it effective participation in the regional electrical integration, to improve reliability and the quality of the service and support the strengthening of ENEE’s institutional capacity allowing Honduras to effectively participate in the SIEPAC/MER; supporting the operational and financial recovery of ENEE”.
- 10.2 The extension of the ENEE-owned El Progreso SS and Toncontín Stage I SS are part of the national<sup>13</sup> reinforcement commitments the country has agreed with the MER, within the framework of the SIEPAC. These commitments were ratified at the 16th Summit of Heads of State and Government of the Tuxtla Mechanism for Dialogue and Consultation, held in San José, Costa Rica on March 29, 2017. These works will improve electricity exchanges by recovering SIEPAC’s capacity in the interconnection *via* Honduras and the regional electricity transmission system’s availability. At the national level, the expected benefits are to: (i) properly meet the country’s increasing demand; (ii) reduce the transformer saturation level at the Toncontín and El Progreso<sup>14</sup> substations; (iii) facilitate the incorporation of non-conventional renewable energy (ERNC) electricity generation plants (solar, water, wind and biomass) into the SIN and economically optimize the distribution of electricity; which will also contribute to improving ENEE’s finances; and (iv) interconnect the national transmission system with the new generation plants using

---

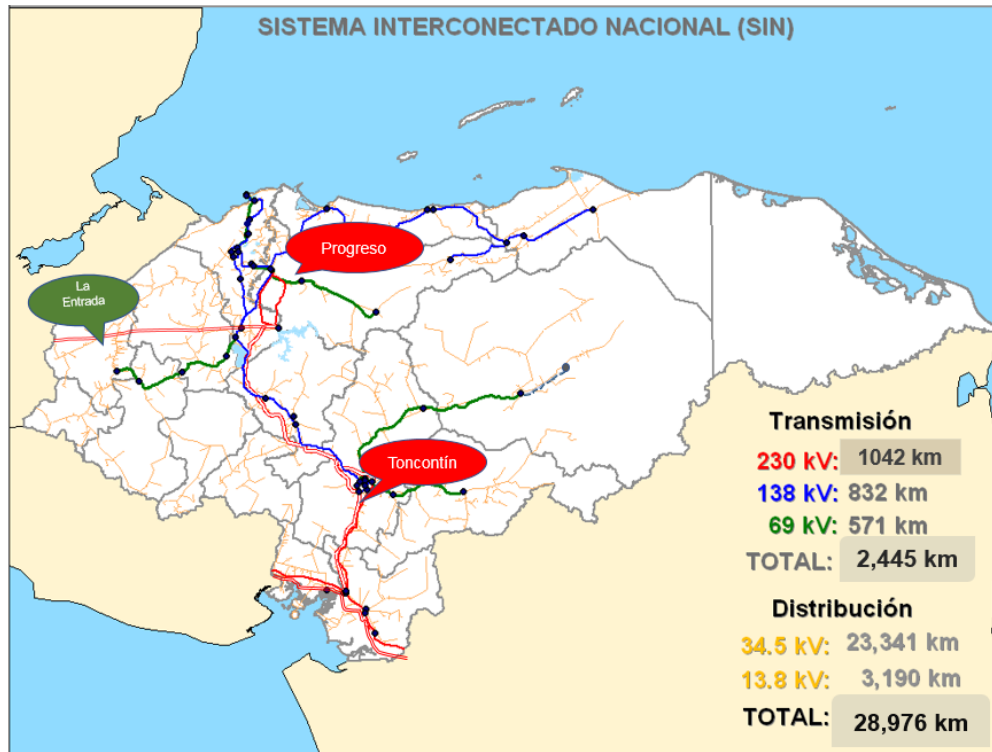
<sup>13</sup> National reinforcements are the works included in the national transmission system needed in a country to allow the transport of the electricity internationally through the SIEPAC in accordance with the conditions set. In Honduras’ current conditions due to the lack of completion of reinforcements that capacity is lower than 50%.

<sup>14</sup> Short Term Transmission and Generation Expansion Plan 2017-2023. ENEE. 2017

ERNC sources that are being developed within the substations' area of influence of the SS<sup>15</sup>.

- 10.3 It is important to note that the configuration of Honduras national grid is such that the transmission system links the southern part of the country, where the non-conventional thermal and renewable generation is mostly concentrated, with the northern part and the Atlantic coast, which is the area of greatest demand from industry and tourism. Bottlenecks have formed in the SIN owing to delays in investment in transmission. These include the Progreso SS that feeds the north and the Atlantic coast and the Toncontín SS that feeds Tegucigalpa.

**Fig. 1 Transmission projects financed with Operation HO-L1039**



- 10.4 The Toncontín Substation is strategically important for the national transmission system because it connects the electricity generated in the center and south of the country with the Sula Valley and the Atlantic coast. The Sula Valley is home to the greatest concentration of industrial and commercial activity in the country; while there is tourism development on the Atlantic coast. Under the present conditions, the 230/138 kV transformers in the Progreso substation are saturated, affecting the reliability of the electricity service in places it covers. The lack of reliability in the electricity service causes interruptions in the electricity supply with the knock-on effect that the industries and businesses served by the substation are forced to

<sup>15</sup> The increase in participation and in renewable energy is a significant challenge for the country's transmission system. This was demonstrated by the "Study on power balance reserves and voltage control for the integration of renewable resources in Honduras" prepared by the United States Department of State in 2016. This study found that voltage problems in the northern part of the Honduras network worsened when solar power generation increases. Even though this part of the network is far from the solar power generation, it is affected because the solar power generation displaces more expensive generation in the north. This results in the network losing some of the vitally important voltage support that these displaced resources provide. Another factor that affects the voltage levels in the north is that the generation of solar power in the south increases the power flow through the south-north corridor from Agua Caliente (AGC) with 230kV up to El Progreso (PGR) with 230kV and through a 138-kV network to San Pedro Sula (SPS) which reduces the voltage even more in the north.

have costly and inefficient individual thermal generators for their power supply. This practice negatively affects the competitiveness of the industrial, commercial and tourist sectors.

- 10.5 The expansion of the Toncontín substation is essential to close the central 230 kV ring that supplies the metropolitan district (Tegucigalpa and Comayaguela) and is essential for the transport of energy to other parts of the country with high demand.
- 10.6 Additionally, SIEPAC’s topographic layout in Honduras does not extend through the whole of the country, therefore, transmission by the national transmission circuits still must be relied on.
- 10.7 The strengthening of the transmission system will not only allow lower cost energy to be dispatched in an optimal way. It will also mean that ERNC generation produced in distinct parts of the country is incorporated into the SIN. Specifically, it facilitates the incorporation of renewable generation projects located in the center and north of the country that have prices that do not affect ENEE’s finances<sup>16</sup>. El crecimiento de generación de ERNC se ha incrementado en los últimos años, logrando reducir la participación del parque de generación térmico del 62% en el 2010 a 40% en el 2016 y se visualiza se seguirá reduciendo en los próximos años.

**Figure 2. SIEPAC Line**



- 10.8 The SREP Program’s investment plan<sup>17</sup> considers 3 components executed by the IDB: (i) Strengthening of policies and regulatory framework for renewable energy

<sup>16</sup> The lack of investment in transmission between Pavana and Santa Lucia means that the investments will not facilitate an increase in the marketing of photovoltaic energy in the south of the country.

<sup>17</sup> Reference is made to the investment plan that SREP’s fiduciary subcommittee has approved to channel the Fund’s resources through implementing entities. The Bank, as an implementing entity for this Fund, established a Fund Trustee (CIF) through which it receives and manages the resources being transferred to the Bank under the Financial Procedures Agreement.

- USD 850,000<sup>18</sup>; (ii) Sustainable Rural Energization – USD 10,216,000<sup>19</sup>; and (iii) ADERC –USD 18,624,000<sup>20</sup>.
- 10.9 The additional works are part of Component 3 of SREP’s Investment Plan for Honduras and contribute to its objectives to: (i) ensure the connection of NCRE projects to the SIN; (ii) diversify the energy matrix; and (iii) comply with commitments to strengthening the national transmission system.
- 10.10 As part of the Bank’s interventions in the country it intends to approve transmission investment operation HO-L1186 in the last quarter of this year. The operation is for USD 75 million and it finances the construction of additional transmission reinforcements for SIEPAC in the northern part of the country. These reinforcements will promote the marketing of energy in MER and increase the participation of renewable energy in the generation matrix. In addition to the environmental benefits that have already been indicated for this year’s transmission investments they will also help reduce the emissions of greenhouse gases by approximately 765 thousand Ton CO<sub>2</sub>/year<sup>21</sup>.
- 10.11 **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. It also falls within the Alliance Plan’s productive sector stimulation axis for the Prosperity of the Northern Triangle by promoting strategic investment sectors; modernizing and expanding infrastructure; and facilitating a reduction in energy costs and an improvement in the reliability of the electricity service.
- 10.12 **Strategic Alignment.** The program is consistent with the Updating of the Institutional Strategy 2010-2020 (AB-3008) and aligns with the development challenges relating to: (i) productivity and innovation, promoting improvements in productive opportunities to increase reliability in the electricity supply<sup>22</sup>; and (ii) economic integration: to modernize existing energy infrastructure facilitating interregional marketing of electricity. The complementary financing is aligned with the transversal areas of: climate change and environmental sustainability, using renewable energy with low CO<sub>2</sub> emissions.
- 10.13 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 Document (GN-2830-3)

---

<sup>18</sup> It operates through a non-reimbursable technical cooperation,

<sup>19</sup> It finances cooking activities for the replacement of conventional stoves thereby saving on firewood and operation HO-G1247 for rural electrification. All the resources are non-reimbursable.

<sup>20</sup> ERNC generation projects are funded along with transmission projects that provide access for ERNC sources to the national grid. The resources for the generating activities are refundable while the transmission projects are both reimbursable and non-reimbursable.

<sup>21</sup> Estimated value in the updated the SREP Program Investment Plan. Value subject to revision based on the validation results from the national emission factor, financed with resources from Technical Cooperation HO-T1210.

<sup>22</sup> A survey conducted by the World Bank in Honduras found that at least 31% of companies consider the quality and continuity of the energy service to be one of the main constraints to the development of their activities. [Enterprise Surveys data for Honduras 2010, World Bank](#) The [National Competitiveness Strategy for Economic Growth and Social Welfare](#), in the 2010-2022 National Plan, establishes the following strategic areas: (i) increase the percentage of renewable electricity participating in the generation matrix through the efficient use of available resources and thus reduce the environmental impact; (ii) reduce power losses in transmission and distribution, ensuring reliable, safe and economic operations in the delivery of electricity; and (iii) broaden electricity coverage at the national level on the basis of a planned sectoral development.

- and with areas related to energy security and sustainability, by promoting: (i) regional integration through new infrastructure and inter-regional exchanges in electricity purchase/sale; and (ii) the 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 GHG emissions. All 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<sup>23</sup>. 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.
- 10.14 The investments proposed under this supplementary funding are consistent with the aims of the Domestic Public Services Policy (PSP) (GN-2716-6). The investments will contribute to the technical, operational and financial sustainability of the energy sector by: (i) improving the country's physical infrastructure by ensuring effective participation in the integration of the region's electricity; improving service reliability and quality and supporting the strengthening of ENEE's institutional capacity; and (iii) facilitating the incorporation of ERNC into the SIN. The program is also consistent with the PSP's aims and the proposed investments promote the conditions for economic evaluation and financial sustainability.

## **B. Objectives and Components**

- 10.15 The objective of the supplementary financing is to improve Honduras' physical infrastructure allowing it to effectively participate in the MER. This will be achieved through the expansion of two existing and operational substations that are part of the Honduras transmission system's national resources to promote the use of SIEPAC and facilitate the incorporation of ERNC into the SIN.
- 10.16 The additional resources will be used to maintain the outline of the program's components, in the following manner:
- 10.17 **Component I. Investment in works related to the integration of Honduras into SIEPAC.** The following works are included:
- a. **Expansion of the EI Progreso SS (USD 4.3 million).** Consisting of installing and commissioning a new 150 MVA 230/138 kV power transformer, the construction of a complete 230kV switch bay and half of one, and connection of the current 50 MVA 230/34.5 kV power transformer to the low voltage side of the new transformer in the existing 138 kV bay. All the works will be carried out within the area of the current SS, which is owned by ENEE. The EI Progreso SS is currently part of the 230kV SIN and it is the strategic link in the electricity distribution system connecting the central and southern area with the north and Atlantic coast<sup>24</sup>. It has four transformers (one 50 MVA 230/34,5kV distribution transformer, one 50 MVA 138/69 kV transformer, two 150 MVA 230/138 kV transmission transformers) and is in the city of EI Progreso, in the department of Yoro. Due to the increasing demand for energy in the areas

---

<sup>23</sup> [2015 Joint Report On Multilateral Development Banks' Climate Finance.](#)

<sup>24</sup> The country's northern and Atlantic coast regions have greater industrial and tourist development and, there, a greater demand for electricity. To meet this demand, it is necessary to transport the energy produced in the central and southern part of the country. Within the transmission system the EI Progreso substation represents a key hub in the interconnection of the electricity distribution system.

serviced by the El Progreso SS the 230/138 kV transformers are very overloaded, and any damage to them could compromise the power supply in these areas.

- b. **Expansion of the Toncontín Stage I SS (USD 2.5 million).** This consists of installing and commissioning a new transformer with a capacity of 150 MVA 230/138 kV and its associated equipment in the Toncontín SS. The works will be carried out within the area of the current SS, which is owned by ENEE. The Toncontín SS currently has two power transformers. Of these, one is for 44.8 MVA 230/13.8 kV distribution and it feeds the areas surrounding this substation. The other is for 84 MVA 230/138 kV distribution and it interconnects to the La Cañada “LCD” and Santa Fe “SFE” substations and in turn feeds the strategic supplies from the Central District, Tegucigalpa and Comayagua. The Toncontín SS is in the city of Tegucigalpa in the department of Francisco Morazán.

- 10.18 **Engineering, administration, audit and evaluations.** A total of USD 0.2 million will be allocated to the activities of tracking, environmental monitoring, auditing and evaluation of proposed new investments.

### C. Outcome Indicators

- 10.19 The Results Matrix (RM) is unchanged in terms of the objective and the focus of the operation and the conceptual and technical continuity is, therefore, maintained. The supplementary financing will allow the following results to be added to the program, these will reflect the products and results to be financed with additional resources coming from the CIF/SREP: (i) increase in the participation of renewable energy in the generation matrix and increase in the reliability of the national electricity system; (ii) reduction in the average loading on the transmission transformers in the El Progreso SS; and (iii) reduction in the percentage loading for the transmission transformer in the Toncontín SS.

### D. Financing Instruments

- 10.20 This project is financed from the resources of Climate Investment Fund (CIF) document GN-2604-3, specifically as part of the Fund's SREP program. The financing will be non-refundable. In accordance with the Financial Procedures Agreement entered into by the Bank, as an implementing entity, and the World Bank, as trustee of the climate fund resources established in said institution, the SREP program subcommittee would approve the use of resources for this project. Such approval will be gained prior to distribution to the OPC. As mentioned, this supplementary financing is part of the Investment Plan for Honduras approved by the sub Committee. In accordance with the provisions of the proposal for the establishment of the Strategic Climate Fund (GN-2604-3), the non-reimbursable investment agreement will include a provision that is signed with the beneficiary, establishing that CIF/SREP's resources will be disbursed to the extent they are available in the Fund.

### E. Implementation scheme

- 10.21 The beneficiary of the funding will be the Republic of Honduras and the executing agency (EA) will be ENEE. The implementation of the activities to be financed with additional resources coming from the SREP will follow the same scheme used

- within the framework of Loan No. 3103/BL-HO, through the Project Coordination Unit (PCU) The PCU will be composed of at least the following personnel: a general coordinator, a technical coordinator, a monitoring specialist, a financial specialist, a procurement specialist and an environmental specialist.
- 10.22 The Program Disbursements Plan (PDP) is included in the corresponding Management Agreement. In relation to the execution, the flow of expenditures is organized for a period of 36 months.
- 10.23 **Monitoring and evaluation of the supplementary financing.** The supplementary financing will follow the Monitoring and Evaluation Plan (MEP) for program 3103/BL-HO, adjusted to reflect the application of additional resources. The monitoring scheme will include: (i) Acquisitions Plan (AP); (ii) Multi-year Implementation Plan; (iii) Annual Operating Plans (AOP); (iv) annual verification of the fulfillment of the goals established in the RM (Annex II); and (v) semi-annual reports containing: (a) activities carried out during that period, progress in their implementation, problems encountered and how to solve them, (b) evaluation of: RM, 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 RM. The works executed in the period will be evaluated and planning for the next half-year will be included. The MEP includes the project evaluation mechanisms, which aim to verify the achievement of the goals agreed in the Results Matrix. This is expected to rely on reports from semi-annual monitoring and a final evaluation 6 months after execution is finished<sup>25</sup>.
- 10.24 **Acquisitions** Review of the acquisitions both wholly and partially funded with the supplementary financing resources will be made on an "ex-ante" basis and in accordance with Policies for the Procurement of Goods and Works Financed by the Bank (GN-2349-9) and Policies for the Selection and Contracting of Consultants Financed by the Bank (GN-2350-9).

## F. Supplementary Financing Development Risks

- 10.25 **Fiduciary aspects.** The ENEE has experience in executing projects with the Bank and it has a team that is trained in fiduciary matters, with a background of acting as EA for loans 1584/SF-HO (closed), 2016/BL-HO (closed), 3103/BL-HO (which this supplementary funding supports) and 3435/BL-HO, in execution. In addition, the risk analysis following the GRP methodology carried out in May this year was also taken as an input. The ENEE will be able to count on the PCU to facilitate the execution of the supplementary financing. The PCU is currently in charge of implementing loans 3103/BL-HO and 3435/BL-HO, and it has extensive experience and a verified capacity.
- 10.26 **Environmental and social aspects.** A Social and Environmental Analysis (SEA) and a Social and Environmental Management Plan (SEMP) have been carried out for the expansion works of the EI Progreso and Toncontín SSs, they are both published on the Bank's<sup>26</sup> website. The works will be carried out within areas already developed with infrastructure and will not require additional land acquisition. They will not affect natural habitats or indigenous peoples and are, therefore, considered of low complexity. However, being close to residential areas,

---

<sup>25</sup> See the Monitoring and Evaluation Plan (available upon request)

<sup>26</sup> [HO-G1006: Transmission Program for Renewable Energy in the Western and Northern Regions.](#)

there may be disturbances to the neighborhood due to noise and movement of machinery. For this reason, consultations should be held with the communities of San Juan in El Progreso and Las Uvas in Tegucigalpa (following an appropriate mapping of stakeholders) in which the main contents of the Environmental Assessment will be reported. This consultation must be carried out before this operation is sent to the Bank's Board of Directors. The SEMP has been included in the SEA along with the mitigation measures for the works, its implementation manager and estimated budget, as well as some measures to adapt the current infrastructure operation in terms of environmental management and occupational health and safety to reduce risks to workers and promote the sustainability of the investments. These measures must be fulfilled before the works are awarded. A risk from hurricanes has also been identified, so both the contractor and ENEE must include this risk within the substations' contingency plans, to prevent and reduce potential damage and incidents related to electrical failures, fires or explosions resulting from these events.

- 10.27 **Financial and economic viability.** The ex-ante financial and economic analysis for the Program was updated to include an evaluation of the use of the USD 7 million that will be available as supplementary financing. An evaluation was carried out on the technical options identified as possible solutions to the limits in the considered SSs. This evaluation analyzed the complexities and risks of each possible solution that had the following aims: create the necessary infrastructure to satisfy the increased demand in the area; provide a reliable and high quality service to the users; and reduce transmission losses in the system. A financial evaluation was carried out on the options that provided information on the best alternative from the point of view of return and recovery of the investment and in relation to the cost/benefit ratio. The selected solution for El Progreso SS shows a financial profitability with a IRR of 49% and a NPV of USD 417 million. The NPV of the selected solution for the Toncontín SS is USD 6.2 million with a 35% IRR.
- 10.28 An economic evaluation of the investments to be made was carried out on the selected alternative. The economic analysis corroborated the validity of the technically and financially most efficient selection. The analysis demonstrates the high financial and economic soundness of strengthening the transmission system and making it more robust and reliable. This will, in turn, impact on improving the quality of the transmission network in a way that maintains the operational conditions and availability of the electricity network and making possible a greater volume of exchanges through the MER. The consolidated economic results for the two projects result in an IRER of 55% and a VPNE of USD 20.4 million. Table IV-1 summarizes the results of the economic evaluation for each project and its sensitivity analysis.

**Table IV-1 Economic Assessment and Sensitivity Summary**

	Progreso SS		Toncontín SS	
	VPNE (USD million)	IRER (%)	VPNE (USD million)	IRER (%)
Base Case	18.58	70.9	1.8	24.2
↑ 20% Investment cost	17.64	59.6	1.3	19.3



↑ 20% O&M cost	18.41	70.3	1.7	23.6
↓ 10% Reduction in faults	16.23	63.7	1.4	21.3
↓ 20% Fault cost	13.93	57.3	0.9	18.3

## **V. RECOMMENDATION OF THE PROJECT TEAM**

- 5.1 Based on the contents of this document and taking into consideration that the supplementary financing resources were not provided for in the formulation of Loan 3103/BL-HO as originally approved by the Bank's Executive Board and that these resources come from the Climate Investment Fund, it is recommended that the Executive Board, based on DR-398-17 (Rules of the Inter-American Development Bank Executive Board) as well as Paragraph 6 of CS-3953-2 (List of issues that the Executive Board can consider by Short Procedure), approve, through short procedure, the draft resolution included as Annex I to this report. The aim of this approval is to modify resolutions DE-177/13 y DE-178/13 and supplement the funding provided in them with the resources of the supplementary financing from the Climate Investment Fund's SREP. It is also recommended that the Board authorize the President of the Bank to;
- (i) sign the necessary agreements with the Republic of Honduras as Beneficiary to grant it supplementary financing drawn from CIF/SREP resources for the execution of the activities planned in this document; and
  - (ii) take other measures necessary for the implementation of the program with the supplementary financing resources referred to in part (i) of this paragraph.

## RESULTS MATRIX

<b>Program Objective</b>	The objective of the supplementary financing is to improve the physical infrastructure in Honduras so as to allow it to participate effectively in the Regional Electricity Market (MER). This will be achieved by expanding two existing and operational substations that are part of the Honduras national transmission system. This will, in turn, promote the use of the Central American Electricity Interconnection System (SIEPAC) and facilitate the incorporation of Non-Conventional Renewable Energy (ERNC) into the National Grid (SIN).
--------------------------	--

Outcome Indicators	Unit of Measurement	Baseline 2017	Target End of the project	Source of information	Verification Frequency
Average percentage load on the Transmission Transformers in the EI Progreso SS	Percentage %	98.93%	76.63% <sup>1</sup>	Energy Office management	Annual
Percentage load on the Transmission Transformer in the Toncontín SS	Percentage %	112%	56% <sup>2</sup>	Energy Office management	Annual

Product Indicators	Baseline 2017	Year 1	Year 2	Year 3	End of the project	Information Source
<b>Component I. Investment in works related to the integration of Honduras into SIEPAC</b>						
EI Progreso substation expanded from 300 MVA to 450 MVA.	-	-	-	1	1	System Operations management/SO MO, ENEE Engineering Division
Toncontín Stage I substation expanded from 75 MVA to 150 MVA.	-	-	-	1	1	Report from supervising company/ENEE

<sup>1</sup> Confirm with the management of the Energy Office the maximum load to which the transformer bank will be subjected to, including the new 150 MVA transformer, giving a total transformation capacity of 450 MVA.

<sup>2</sup> Confirm with the management of the Energy Office the maximum load to which the new 150 MVA transformer will be subjected.



# Safeguard Policy Filter Report

## Operation Information

Operation		
<b>HO-G1006</b> Transmission Program for Renewable Energy in West and North Zones		
Environmental and Social Impact Category	High Risk Rating	
B	{Not Set}	
Country	Executing Agency	
HONDURAS	{Not Set}	
Organizational Unit	IDB Sector/Subsector	
Country Office Honduras	ENERGY EFFICIENCY AND RENEWABLE ENERGY IN END USE	
Team Leader	ESG Lead Specialist	
CARLOS ALBERTO JACOME MONTENEGRO	MILAGROS CECILIA AIME	
Type of Operation	Original IDB Amount	% Disbursed
Investment Grants	\$0	0.000 %
Assessment Date	Author	
11 May 2017	milagrosa ESG Lead Specialist	
Operation Cycle Stage	Completion Date	
ERM (Estimated)	26 Jan 2015	
QRR (Estimated)	9 May 2017	
Board Approval (Estimated)	{Not Set}	
Safeguard Performance Rating		
{Not Set}		
Rationale		
{Not Set}		

## Potential Safeguard Policy Items

[No potential issues identified]

## Safeguard Policy Items Identified

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



# Safeguard Policy Filter Report

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.

## 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 (Resettlement Policy– OP-710)

The operation has the potential to disrupt the livelihoods of people living in the project area of influence (not limited to involuntary displacement, see also Resettlement Policy)

## 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.11. Pollution Prevention and Abatement

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

## B.14. Multiple Phase and Repeat Loans



# Safeguard Policy Filter Report

The operation is a repeat or second phase loan.

## 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.

## 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		
<b>HO-G1006</b> Transmission Program for Renewable Energy in West and North Zones		
Environmental and Social Impact Category	High Risk Rating	
B	{Not Set}	
Country	Executing Agency	
HONDURAS	{Not Set}	
Organizational Unit	IDB Sector/Subsector	
Country Office Honduras	ENERGY EFFICIENCY AND RENEWABLE ENERGY IN END USE	
Team Leader	ESG Lead Specialist	
CARLOS ALBERTO JACOME MONTENEGRO	MILAGROS CECILIA AIME	
Type of Operation	Original IDB Amount	% Disbursed
Investment Grants	\$0	0.000 %
Assessment Date	Author	
11 May 2017	milagrosa ESG Lead Specialist	
Operation Cycle Stage	Completion Date	
ERM (Estimated)	26 Jan 2015	
QRR (Estimated)	9 May 2017	
Board Approval (Estimated)	{Not Set}	
Safeguard Performance Rating		
{Not Set}		
Rationale		
{Not Set}		

## Operation Classification Summary

Overriden Rating	Overriden Justification
Comments	



# Safeguard Screening Form

## 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

Generation of solid waste is [moderate](#) in volume, does not include [hazardous materials](#) and follows standards recognized by multilateral development banks.

**Solid Waste Management:** The borrower should monitor and report on waste reduction, management and disposal and may also need to develop a Waste Management Plan (which could be included in the ESMP). Effort should be placed on reducing and re-cycling solid wastes. Specifically (if applicable) in the case that national legislations have no provisions for the disposal and destruction of hazardous materials, the applicable procedures established within the Rotterdam Convention, the Stockholm Convention, the Basel Convention, the WHO List on Banned Pesticides, and the Pollution Prevention and Abatement Handbook (PPAH), should be taken into consideration.

Likely to have [minor](#) to [moderate](#) emission or discharges that would negatively affect [ambient environmental conditions](#).



## Safeguard Screening Form

**Management of Ambient Environmental Conditions:** The borrower should be required to prepare an action plan (and include it in the ESMP) that indicates how risks and impacts to ambient environmental conditions can be managed and mitigated consistent with relevant national and/or international standards. The borrower should (a) consider a number of factors, including the finite assimilative capacity of the environment, existing and future land use, existing ambient conditions, the project's proximity to ecologically sensitive or protected areas, and the potential for cumulative impacts with uncertain and irreversible consequences; and (b) promote strategies that avoid or, where avoidance is not feasible, minimize or reduce the release of pollutants, including strategies that contribute to the improvement of ambient conditions when the project has the potential to constitute a significant source of emissions in an already degraded area. The plan should be subject to review by qualified independent experts. Depending on the financial product, this information should be referenced in appropriate legal documentation (covenants, conditions of disbursement, etc.).

Project construction activities are likely to lead to localized and temporary impacts (such as dust, noise, traffic etc) that will affect local communities and [workers](#) but these are [minor](#) to [moderate](#) in nature.

**Construction:** The borrower should demonstrate how the construction impacts will be mitigated. Appropriate management plans and procedures should be incorporated into the ESMP. Review of implementation as well as reporting on the plan should be part of the legal documentation (covenants, conditions of disbursement, etc).

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.

### Disaster Risk Summary

Disaster Risk Level

**Low**

Disaster / Recommendations

No specific disaster risk management measures are required.

### Disaster Summary





## Safeguard Screening Form

### Details

The project is classified as low disaster risk because the occurrence of the hazard event does not impact in the achievement of project outcomes.

### 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.

**INTER-AMERICAN DEVELOPMENT BANK DOCUMENT**



**SUPPORT FOR THE INTEGRATION OF HONDURAS INTO THE REGIONAL ELECTRICITY MARKET  
(HO-L1039) (3103/BL-HO)**

**SUPPORT FOR THE INTEGRATION OF HONDURAS INTO THE REGIONAL ELECTRICITY MARKET  
AND THE CONNECTIVITY OF RENEWABLE ENERGY TO THE GRID**

**SUPPLEMENTARY FINANCING  
NON-REFUNDABLE INVESTMENT FINANCING  
(HO-G1006)**

**ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT  
(ESMR)  
MAY 2, 2017**

This document was prepared by:  
Milagros Aime (VPS /ESG)

<b>ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT (ESMR)</b>	
<b>Name of Operation</b>	Support for the Integration of Honduras into the Regional Electricity Market
<b>Operation Number</b>	HO-L1039 (3103/BL-HO), HO-G1006
<b>Details of the Operation</b>	
<b>IDB Sector</b>	Energy Division
<b>Type of Operation</b>	Specific works
<b>Impact Classification</b>	B
<b>Disaster Risk Indicators</b>	Low
<b>Borrower</b>	Republic of Honduras
<b>Executing Agency</b>	Empresa Nacional de Energía Eléctrica [National Electric Energy Company] (ENEE)
<b>IDB loan US\$ (and total cost of project)</b>	IDB Financing: US\$22.93 million CIF Donation: US\$7 million
<b>Relevant Policies/Guidelines</b>	OP-703, guidelines B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.9, B.11, B.14, B.17, OP-704, OP-102, OP-761, OP-710
<b>Executive Summary</b>	
<p>The Honduras Integration Support Program for the Regional Electricity Market (HO-L1039) was approved by the Executive Board of the IDB on December 4, 2013. The total amount of the operation was US\$22.93 million. Currently, an increase of US\$7 million in funding is proposed (HO-G1006), and additional resources will be used to finance the expansion of two existing and operational substations owned by the ENEE in the cities of Progreso and Tegucigalpa. The works will be carried out within areas already affected by the ENEE infrastructure, which do not require acquisition, will not affect natural habitats or indigenous peoples, nor are they close to any archaeological site registered at the Honduran Institute of Anthropology and History (IHAH). Both SSs are close to urban areas.</p> <p>An Environmental and Social Analysis (AAS) and an Environmental and Social Management Plan (PGAS) were carried out for these works, which are published on the Bank's website. Within the PGAS, some measures have been included to adjust the current operation of the infrastructure in terms of environmental management and occupational safety and health in order to reduce risks to workers and promote the sustainability of investments. A hurricane disaster risk has also been identified, so both the contractor and ENEE should include this risk within the contingency plan of the substations, in conjunction with the Fire Department, Red Cross and National Police to prevent and reduce potential damage and incidents related to electrical failures, fires or explosions during these events.</p> <p>Additionally, a Socio-Environmental Audit (ASA) has been carried out on the progress of the Program works (HO-L1039), and the Action Plan to be carried out to complete the operation's mitigation measures has been determined.</p> <p>The Environmental Unit of ENEE has a group of environmental engineers who follow up the environmental authorizations and environmental and social management plans of the Project works. Likewise, the Executing Unit, through a specialized professional, oversees the relations with the communities of all the projects of the program and of monitoring the implementation of the measures of social mitigation and other related activities.</p>	

## Operation Description

The overall objective of the HO-L1039 Program is to improve the country's physical infrastructure conditions that allow it to participate effectively in regional electrical integration and improve service reliability and quality. Likewise, the Program also seeks to support the strengthening of ENEE's institutional capacity to enable Honduras to effectively participate in SIEPAC/MER1. ENEE is an autonomous state-owned company that is responsible for the production, marketing, transmission and distribution of electricity in the country. ENEE is a key entity of Honduras in the SIEPAC/MER project, it is a partner of the EPR and Operator of the National Market System.

To achieve the objectives of the approved Program in 2013, the following components were available.

- 1.1. **Component I: Investment in works related to the integration of Honduras into SIEPAC (US\$19.7 million).** Component I is divided into 2 parts:
  - 1.1.1. **Construction of the La Entrada Substation (US\$14.9 million).** Which includes: (i) the construction of a substation with a transformation capacity of 50 MVA at 230 kV/34.5 kV, with its associated output lines, to create a link between SIEPAC and the transmission network of Honduras; (ii) installation of three towers for the entry of transmission lines; (iii) improvements in associated distribution lines; and (iv) the acquisition of land for the construction of the substation.
  - 1.1.2. **Investments in works to finalize operations 1584/SF-HO and 2016/BL-HO (US\$4.8 million).** It will allow the completion of the projects contemplated and achieve the results of the ASE Program. The works to be completed under these loans are: (i) two transmission lines of 69 kV: Las Flores–Erandique (60 km) and Danlí–Chichicaste (34 km) (both under 1584/SF-HO); (ii) the Amarateca substation with a transformation capacity of 150 MVA at 230 kV (2016/BL-HO) and will also recognize expenses for final payments of the works i) 138 kV transmission line San Pedro Sula Sur – Naco; and ii) expansion of Las Flores and Danli Substations.
- 1.2. **Component II: Strengthening of ENEE in commercialization in the MER (US\$1.7 million).** Component II will support ENEE to improve its management capacity, including: (i) creation of the Electric Marketing/Transactions Unit at ENEE's National Energy Dispatch Center with the objective of enhancing the energy marketing benefits of ENEE in the MER; and (ii) improvement in the financial management of ENEE for the proper handling of commercial transaction information in the MER.
- 1.3. **Engineering, administration, audit and evaluation (US\$1.49 million).** This part will support the implementation of the Program through resources to carry out program supervision, including environmental monitoring, auditing and evaluation

Currently, it is proposed to increase funding for operation HO-L1039, under HO-G1006, for US\$7 million that will come from donation resources of the Scaling Up Renewable Energy Program (SREP) of the Climate Investment Fund –(CIF). The additional resources will be used for the financing of the expansion of two substations under Component I of the Program. Both projects to expand the SSs have environmental licenses.

- 1.4. **Expansion of the El Progreso Substation in the City of Progreso, Department of Yoro (US\$4.3 million).** It consists of the installation of a new power transformer of 230/138kV of 150MVA, the construction of a complete switch bay and via 230kV, and the connection of the current distribution transformer 230/34.5kV of 50MVA, on the underside of the new

---

<sup>1</sup> Electrical Interconnection System for Central American Countries (SIEPAC) and Regional Electric Market (MER)

transformer in the existing bay at 138kV. At present, the Progreso Substation is part of the National Grid at 230kV, and it has four transformers.

- 1.5. **Extension of the Toncontín Stage I Substation in the City of Tegucigalpa, Department of Francisco Morazán (US\$2.5 million).** It consists of installing a new transformer with a capacity of 150MVA in 230/138kV and its associated equipment. At present, the Toncontín substation has two power transformers.
- 1.6. In addition, US\$0.2 million will be allocated for the activities of monitoring, environmental monitoring, auditing and evaluation of proposed new investments.

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

### **Evaluation Requirements.**

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)

The HO-L1039 Program has been classified as category B according to its potential impacts. Due to the expansion of the Program, i) a Socio-Environmental Audit (ASA) to advance the works to date has been carried out; and ii) an Environmental and Social Analysis (AAS) for the two new expansion works of the Transformer Substations (SS):

#### Socio-Environmental Audit (ASA) to advance works to date

The ASA has focused on verifying the compliance of PGAS with the works contemplated during the preparation of the HO-L1039 operation. According to this audit, the works have a satisfactory level of compliance, with some measures pending execution as specified below.

In relation to other risks of the Program, the limited institutional capacity of the ENEE executing unit was originally identified as a risk. To mitigate this risk, the recruitment of the necessary personnel was requested, and to date an Environmental Specialist is in charge of the monitoring of the PGASs.

In addition, contractors are required to have an Environmental Regency on site. According to the results of the Audit, this scheme has worked satisfactorily.

#### Environmental and Social Analysis (AAS) for the expansion works of the EI Progreso and Toncontín.

For its part, the AAS of the two works to be incorporated has included the evaluation of the current operating conditions of both SSs, as well as the analysis of impacts of the works to be financed. In this sense, the necessary mitigation measures have been determined in the PGAS as described below. It should be noted that both works currently have an environmental license, although public consultations have not yet been carried out.

Hurricanes have also been identified as a risk factor in the area in which action is to be taken. In this sense, it is necessary to include provisions for this event in the contingency plan prepared in conjunction with the Fire Department, Red Cross and National Police to prevent and reduce potential damages related to electrical failures, fires or explosions during these events, both for the construction stage and that of operation.

Finally, there are aspects to be improved in the current operation of the SSs to be worked on. Some of these may pose a safety hazard to workers such as terminals to the ground that have been removed by vandalism and breakages in cable ducts, and others are related to deficiencies in the environmental management of the site, such as spills of unattended oil. ENEE must regularize these aspects prior to the beginning of the works. It should be noted that, to date, both works have an environmental license.

### **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.

### **Works under implementation under Program HO-L1039**

As part of the ASA, the completion of the public consultation regarding the construction project for the La Entrada SS was verified, which was pending compliance. This activity was carried out on September 26, 2013, in the Municipality of San Nicolás, Department of Copán, under the coordination of the Environmental Studies Unit of ENEE. On that occasion, representatives of the Municipality of San Nicolás, owners of the project lands, representatives of several councils, Water Boards, Women's Bureau, members of civil society, Rural Savings Banks, the Library, Health Committee, Catholic Church, Free Forces Inspired by God (FLUID), CCT, AHPROCAFE Local Board, Parents' Society, Transparency Commission, a representative of the Farmers' Fair and Alderman. As a result, requirements such as the hiring of unskilled local labor and the connection of several sites as a school were met.

### **Progreso SS and Toncontín SS**

Expansion works for the Progreso and Toncontín SSs will be carried out within areas already affected by infrastructure, which do not require acquisition of additional land, will not affect natural habitats or indigenous peoples, and are therefore not considered very complex. However, being close to residential areas, there may be disturbances to the neighborhood due to noise and movement of machinery. For this reason, consultations must be held before this operation goes to the Bank's Board of Directors, with the communities of San Juan in El Progreso and Las Uvas in Tegucigalpa (prior to the completion of an appropriate mapping of stakeholders). Main contents of the Environmental Assessment carried out, collecting perceptions, inputs and proposals for eventual inclusion in the project. Prior to the commencement of the works, the contractor must inform the neighbors about the intervention schedules and indicate the means of communicating queries or complaints, if any.

### **Dissemination of Information**

OP-703 Environment and Safeguards Compliance Policy: B.5 (Assessment Requirements and Environmental Plans);  
OP-102 (Access to Information Policy)

The AAS of the expansion works of the Toncontín and El Progreso substations and the ASA of the progress of the works of the program have been made available to the public on the Bank's website<sup>2</sup>.

### **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)

<sup>2</sup> <http://www.iadb.org/es/proyectos/project-information-page.1303.html?id=HO-G1006>

The main positive impacts and benefits of the Program are related to the expansion of the coverage and reliability of the National Grid (SIN) and the stimulation of the local economy by generating temporary employment for the local population.

### **Progreso SS and Toncontín SS**

- The environmental impacts of the works proposed for the expansion of the two SSs will be of a low magnitude. They will not be carried out on ecologically sensitive areas or critical natural habitats, or close to any archaeological site registered in the Honduran Institute of Anthropology and History (IAAH). The area of action is on ENEE land where the two SSs are already in operation and have already been subject to heavy anthropogenic intervention, as shown in the photographs below. No resettlement of inhabitants or impact on indigenous peoples is expected. The El Progreso SS is in an urban area, while the SE Toncontín is located on the outskirts of an urban area, with the nearest inhabitants being 400 meters away. Because it is within the urban area (in the case of El Progreso) and the urban growth of Toncontín, significant consultations with the inhabitants should be made, taking their proposals into consideration in order to mitigate possible social impacts (such as the one already proposed to create a perimeter of protection in the case of Toncontín).



**Image 1. Location Progreso SS**



**Image 2. Location Toncontín SS**

- During the construction phase, the environmental impacts will be localized and temporary, mainly related to the movements of earth and excavations, typical for interventions involving this type of infrastructure. The main possible effects are the following: (i) the temporary increase in the concentration of dust and particulate matter, (ii) the rise in the levels of noise and vibrations, (iii) the emissions of greenhouse gases, (iv) the generation of debris, (v) the generation of common and dangerous solid waste, (vi) the contamination of soil and water by probable spills of fuel and lubricants, (vii) impacts on road infrastructure and discomfort in the transit of the transport of electromechanical equipment of great weight, (viii) risks of accidents as a result of the construction operations. These impacts will be minimized and mitigated with proper execution of the PGAS and the Occupational/Labor Safety Plan, whose implementation will be required of the contractor.
- It has been verified that neither SS has equipment containing Polychloro-Biphenyl (PCB).
- The PGAS has been included in PGAS with the mitigation measures for the works, its implementation officer and the estimated budget. Among the most important measures are:
  - The adequacy of the current operation of both SSs, which have aspects to improve on in order to reduce occupational health and safety risks for workers, such as the absence of terminals on the ground and breaks in cable ducts. Existing oil spills should also be cleaned, and emergency protocols should be established for spills. ENEE must regularize these aspects prior to the beginning of the works, as it has been included in the PGAS of the works.
  - The construction of oil collection traps to prevent soil contamination by oil spills from electromechanical equipment.
  - The elaboration of contingency plans for cases of electrical failures, fires or explosions during the construction phase, and in case of the occurrence of hurricanes.
  - Social management measures, such as encouraging the hiring of local labor, establishing a system of attention regarding complaints and conducting an early consultation with communities neighboring the SS.



- Hygiene and safety measures: establishment of protocols for electrical hazards, fires or explosions and development of drills, installation of properly equipped kits for emergency work and first aid, provision of a suitable place to eat food and provision of drinking water.

### **Works under implementation under Program HO-L1039**

Because of the ASA, the level of progress of the mitigation measures that had been designed for the works has been established and the action plan, which is presented in Annex I, has been updated. The most important measures that are pending implementation are related to the reforestation plan and the installation of bird rescue devices. These measures must be completed in the short term.

According to the program, an archaeological survey was carried out prior to the start of the construction of La Entrada SS and the technical report of the IHAH concluded that no archaeological remains were detected on the land. However, in the archaeological survey for the 34.5 kV distribution circuits of July 2016, it was found that post No. 23 is located on an archaeological structure of the site known as CP-PLE501 (Tepemehín). This caused the layout to be adjusted and that the distribution section only reached structure No. 22 so as not to damage the archaeological mound already identified.

In relation to the freeing up of passage regarding the 69 Kv Danlí-Chichicaste Sub-Transmission Line and Las Flores-Erandique 69 kV Sub-Transmission Line, the audit determined that negotiation is already taking place on compensation for all the easements. However, in those cases where property is not yet formalized in titles, the amount negotiated is left pending, to be effective when the owner has the corresponding legal papers. Once the title of property is made known, the payment of the negotiated compensation will be made effective. More information has been requested in this respect from ENEE, which will be received and analyzed before the sending of this Program to the Board of Directors.

### **Lifestyle and Resettlement**

OP-710 (Operational Policy on Involuntary Resettlement)

#### **Progreso SS and Toncontín SS**

The works do not involve the involuntary physical displacement or economic displacement of people.

#### **Works under implementation under Program HO-L1039**

As specified in the previous section, in relation to the freeing up of the easement of passage in the Danlí-Chichicaste 69 kV Sub-Transmission Line and Las Flores-Erandique 69 kV Sub-Transmission Line, it is still pending to make effective the compensation of the amount negotiated in those cases where ownership is not yet formalized in titles. Once the title of property is made known, the payment of the negotiated compensation will be made effective. More information has been requested in this respect from ENEE, which will be received and analyzed before the sending of this Program to the Board of Directors.

### **Indigenous Peoples**

OP-765 (Operational Policy on Indigenous Peoples)

The operation will not have potential adverse impacts on Indigenous Peoples, because the works are within the premises of the substations.

### **Gender Equality**

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

For the projects to be built for the extension of El Progreso SS and Toncontín SS, equal access for men and women must be promoted during the recruitment of labor. Likewise, equitable access in management, consultation and complaints spaces will be ensured.

### **Disaster Risk Management**

OP-704 (Natural Disaster Risk Management Policy)

In the area of direct and indirect influence of the project there is a risk of a disaster due to hurricanes, which could generate risks to the infrastructure or personnel if the necessary contingency measures are not available to deal with this type of event. The history of this type of disaster dates back to October 1998, when Hurricane Mitch passed through Tegucigalpa (the region where the Toncontín SS project will be carried out). As defined in the PGAs, the contractor and ENEE must include provisions for such events in the Contingency Plan prepared in conjunction with the Fire Department, Red Cross and National Police to prevent and reduce potential damages and incidents related with electric faults, fires or explosions. It should include the identification of contingency plan coordinators (such as contingency chiefs, operational leaders, environmental squads and emergency brigades), signaling, evacuation routes and meeting points, as well as the establishment of protocols, levels and emergency communication systems. This plan must be socialized with the workers and the nearby population, especially in the case of the El Progreso TSS.

### **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)

Supervision missions will be carried out specifically focused on verifying the compliance with the actions to comply with the safeguards included in the PGAS, as well as in the Socio-Environmental Audit's Action Plan regarding the progress of the operation.

The Executing Agency (OE) must submit in the semester reports an environmental and social performance report on the program's works. It should include the compliance table of the agreed mitigation measures for the works.

### **Legal Requirements**

The following recommendations are intended to ensure the appropriate environmental and social management of the Program:

#### **Conditions precedent to the first disbursement:**

The OE will present evidence of compliance with the Action Plan determined in the Social and Environmental Audit for the works in the final stage of execution with the Program.

#### **Conditions precedent to the call for tenders for the expansion works of El Progreso SS and Toncontín SS:**

- a) The Bank's lack of objection to the environmental and social conditions contained in the documents for the tender must be taken into account.
- b) The OE must present the plan and schedule in order to adapt the operating conditions in both SSs.

#### **Conditions prior to the award of the works:**

The OE must present evidence of the adequacy of the operating conditions, safety and environmental management of the substations, as well as the inclusion in the contingency plan of the risk of disasters by hurricanes.

**General performance conditions:**

- a. Information concerning the progress of the SEMP for the program's works will be included as part of the project's semi-annual report.
- b. The Executing Unit must have an environmental specialist on its staff at all times.
- c. The Bank must be notified within no more than five working days of any non-compliance with any environmental, social, labor or health and safety requirement, as well as of any accident, impact, event, complaint or claim of an environmental, social, labor or health and safety nature.

**Summary of Compliance with IDB Safeguards Policies**

**Table: Summary of Compliance with IDB Safeguards Policies<sup>3</sup>**

Policies / Guidelines	Pertinent Aspects of Policies / Guidelines	Status of Compliance with Policy / Guideline Requirements and Justification	Requirements / Actions / Plans
<b>OP-703 Environment and Safeguards Compliance Policy:</b>			
B.2 Legislation and National Regulations	Preparation of Environmental Analysis.	Full compliance has been achieved. Both SS expansion works have featured a Qualitative Environmental Diagnosis, based on which environmental licenses have been obtained in compliance with local legislation.	N/A
	Environmental Permit	Full compliance has been achieved. The expansion works at El Progreso SS and Toncontín SS have environmental licenses.	N/A
B.3 Pre-Assessment and Classification	Pre-evaluation and classification of the operation.	Full compliance has been achieved. Operation HO-L1039 has been categorized as B. The works to be included with the enlargement present low environmental and social complexity.	N/A
B.4 Other Risk Factors	Existing installations	Compliance is achievable through specific conditions established in legal documents. There are aspects to be improved in the current operation of the SSs that are going to be worked on, which may represent a risk to the safety of workers or are related to deficiencies in environmental management.	It is established as a precondition to the call for tenders of the works that the OE presents the plan and schedule to adjust the operating conditions in both SSs. In addition, it will be a precondition for the award of the works that the OE presents evidence of the adequacy of the operating conditions, safety and environmental management of the substations, as well as the contingency plan that includes considerations for the risk of disasters due to hurricanes.
	Vulnerability to disasters.	Fulfillment expected during program implementation. The risk of hurricane disasters has been identified.	There should be a contingency plan prepared in conjunction with the Fire Department, Red Cross and National Police for cases of electrical failures, fires or explosions before these events, both for the construction and operational stages.
	Institutional capacity.	Full compliance has been achieved. The executing unit has hired an Environmental Specialist.	N/A

<sup>3</sup> Please note that the ESG is preparing a conformity checklist.

B.5 Assessment Requirements and Environmental Plans	Environmental Analysis.	Full compliance has been achieved. An AAS and PGAS has been developed for the extension work proposals, as well as an ASA for the works in progress with the program.	
B.5 Assessment Requirements and Social Plans	N/A	No significant socio-cultural impacts are envisaged as the environmental and social complexity of these projects are low and they are within areas relevant to ENEE. However, the proposals made by the communities as part of the consultation activities should be taken into consideration (and, if feasible, included in the final projects).	N/A
B.6 Consultations (including consultations with women, indigenous peoples and/or minorities)	Consultations	Compliance prior to Board approval is expected The completion of the public consultation of the construction project for La Entrada SS, which was pending execution, has been verified.	For the expansion works, consultations will be implemented prior to approval by the Board.
B.7 Supervision and Compliance	Monitoring and supervision.	Fulfillment expected during program implementation.	Compliance with PGAS and the ASA findings will be monitored. Progress in PGAS compliance will be reported in the semi-annual reports, as well as in the Environmental Compliance Reports (ICA), prepared by the supervision of the works, with the support of ENEE.
B.8 Transboundary Impacts	N/A	The operation is not expected to generate cross-border impacts.	N/A
B.9 Natural Habitats	N/A	The projects are not in critical natural habitats.	N/A
B.9 Invasive Species	Use of native species for reforestation.	Fulfillment expected during program implementation. It is planned to use native and non-invasive species in reforestation plans.	As indicated in the ASA Action Plan, the execution of the reforestation Plans of La Entrada substation, Danlí – Chichicaste Transmission Lines, and San Pedro Sula Sur – Naco Transmission Lines should be completed.
B.9 Cultural Sites	Archaeological sites	Fulfilled An archaeological survey was conducted prior to the start of the construction works of La Entrada SS and the 34.5 kV distribution circuits. A mound was found in structure No. 23, so the design was adjusted so as not to affect the same. The new works will be carried out in previously affected areas where there is no reference of cultural sites.	In the case of finding uncovered archaeological and/or unanticipated historical remains, in the execution of the project, the contractor must follow the procedure indicated by IHAH.
B.10 Hazardous Materials	Use and disposal of hazardous materials.	Expected compliance during program implementation.	The design foresees the construction of oil traps in the installation enclosures of the new transformers. In addition, the operating conditions of the SS in

		The works will involve the handling of equipment containing oils (transformers). They will not have PCBs, nor is there any presence of such a substance in the facilities to be worked on.	which untreated oil spills were detected should be regularized, also updating the protocol for action against spills.
B.11 Prevention and Reduction of Pollution	Prevention of pollution	Expected compliance during program implementation. A PGAS was designed with measures to prevent contamination during the expansion works of the SSs.	The areas of SSs to work on will also be regularized, the ones in which oil spills were detected during the carrying out of the AAS.
B.12 Construction projects underway	N/A	The projects are not under construction because they are outside the Bank Programs.	N/A
B.13 Policy Loans and Flexible Loan Instruments	N/A	The operation will not be a policy-based loan, financial intermediation operation (FI), performance-based or sector-based loan.	N/A
B.14 Multiphase or Repeated Loans	Environmental liabilities	Compliance achievable through specific conditions established in legal documents according to the Social and Environmental Audit that was carried out, some mitigation measures are still pending compliance.	Compliance with the Action Plan developed in the Social and Environmental Audit and indicated in this document is established as a condition precedent to the first disbursement.
B.15 Cofinancing Operations	N/A	N/A	N/A
B.16 National Systems	N/A	This operation will not use the national safeguard systems.	N/A
B.17 Acquisitions	Environmentally and socially responsible acquisition process Person(s) responsible	Expected compliance during program implementation.	Environmental, social and health and safety requirements should be included in construction company contracts.
<b>OP-704 Natural Disaster Risk Management Policy</b>			
Disaster Risk Assessment	Identification and evaluation of risks of natural disasters.	Full compliance has been achieved The risk of occurrence of hurricanes in the project areas has been identified.	N/A
Disaster Risk Action Plan	Contingency plans.	Expected compliance during program implementation.	The contractor and ENEE must prepare a Contingency Plan in conjunction with the Fire Department, Red Cross and National Police to prevent and reduce potential damages and incidents related to electrical failures, fires or explosions in the face of these events.
<b>OP-710 Operational Policy on Involuntary Resettlement</b>			
Minimization of Resettlement	N/A		

Resettlement Plan Consultations	N/A		N/A
Impoverishment Risk Analysis	N/A		N/A
Resettlement Plan or Resettlement Framework (Prior to the Analysis Mission / Board Approval)	N/A		N/A
Lifestyle Restoration Program	Acquisition of plots	Compliance achievable through specific conditions established in legal documents. Finalization of the compensation process for easements on the Danlí-Chichicaste and Las Flores-Erandique Transmission Lines (1584/SF-HO and 2016/BL-HO) is still pending subject to the formalization of the property.	Compliance with the Action Plan developed in the Social and Environmental Audit and indicated in this document has been established as a condition precedent to the first disbursement. This includes the completion of the compensation process.
Consent (Indigenous Peoples and other Rural Ethnic Minorities)	N/A		N/A
<b>OP-765 Operational Policy on Indigenous Peoples</b>			
Sociocultural Assessment	N/A	The Operation will have no potential adverse impacts on Indigenous Peoples.	N/A
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
<b>OP-761 Operational Policy on Gender Equality in Development</b>			
Unequal access to project benefits / compensation measures	Equitable Access to Project Benefits	Expected compliance during program implementation. The benefits of the project (improvements in the national electricity system) will benefit the population as a whole.	Equal access for men and women should be promoted during labor recruitment. Likewise, equitable access in management, consultation and complaints spaces will be ensured.
Unequal introduction of unpaid work	N/A	N/A	N/A
Increased risk of gender-based violence, including sexual exploitation, trafficking in persons and sexually transmitted diseases	N/A	N/A	N/A
Breakdown of Information on Gender Impact	N/A	N/A	N/A
<b>OP-102 Access to Information Policy</b>			
Dissemination of Environmental and Social Assessments <sup>4</sup> Prior to the Analysis Mission, QRR and sending of documents to the Board <sup>5</sup>	Dissemination of Environmental and Social Analysis.	Full compliance has been achieved The Environmental Analysis and Socio-environmental Audit are published on the Bank's website.	N/A
Provisions for the Dissemination of Environmental and Social Documents during the Implementation of the Project	Provisions for the Dissemination of Environmental and Social Documents during the Implementation of the Project.	Expected compliance during Program implementation.	If new environmental and social documents are generated during the execution, they will be published.

<sup>4</sup> Environmental and Social Assessments include EIAS, SEMP, PRI, MRI and ESMF

<sup>5</sup> 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.



**Annex I - Action Plan for Compliance with Environmental and Social Mitigation Activities**

Pending Mitigation Action		Compliance with the Measure / Comments	Indicators	Action to perform	Person(s) responsible for the action	Implementation Term	Cost of the Action
<b>LA ENTRADA SUBSTATION</b>							
1	The removed organic layer should be dispersed, trying to carry out the re-vegetation of the affected area as much as possible, and the area's native species will be planted in the zone of its perimeter and interior.	This measure is scheduled for the start of planting of native species in the perimeter zone of the project.	Trees planted	Planting of trees in perimeter area	ENEE	Beginning of May 2017	USD 3,000
2	Planting offset trees in the 34.5kV LTs	The offset trees have already been planted in the SS area and loan areas	Trees planted	Planting of trees in LT areas	ENEE	May 2017	USD 10,000
<b>AMARATECA SUBSTATION</b>							
3	The establishment staff must have a contingency plan in case of fire and/or explosion, which must be reviewed and approved by the Fire Department of Tegucigalpa	<ul style="list-style-type: none"> <li>The Contingency Plan is in the process of certification by the Fire Department</li> </ul>	Certified Contingency Plan	Socialize with Plant staff	Fire Brigade ENEE	1 Month	USD 500
<b>LAS FLORES-ERANDIQUE TRANSMISSION LINES</b>							
4	Implement the installation of deterrent elements (Bird Rescue Devices)	<ul style="list-style-type: none"> <li>Hire expert to design system</li> <li>Manage purchase and installation of deterrent elements</li> </ul>	Expert hired  Equipment installed	The purchase of the elements with the UEA/ENEE will be managed and the installation of the elements will be scheduled	The Environmental Studies Unit (UEA/ENEE).	3 Months	USD 5,000 per SS + cost of the devices
<b>DANLÍ - CHICHICASTE TRANSMISSION LINES</b>							
5	Implement a program of reforestation in the area surrounding the project, as well as in the forest offsetting plan for the	<ul style="list-style-type: none"> <li>Progress has been made in obtaining agricultural inputs from the ICF for the</li> </ul>	The planting of trees	The supply of plants that this department handles in its nursery for their respective planting will be managed	UEA/ENEE.	2 Months	USD 10,000

	transmission lines. Also, maintenance to ensure satisfactory survival	establishment of nurseries		with ENEE's Engineering Department. UEA/ENEE has scheduled this activity for September.			
6	Implement the installation of deterrent elements (Bird Rescue Devices)	<ul style="list-style-type: none"> <li>Hire expert to design system</li> <li>Manage purchase and installation of deterrent elements</li> </ul>	Expert hired Equipment installed	The purchase of the elements with the UEA/ENEE will be managed and the installation of the elements will be scheduled	The Environmental Studies Unit (UEA/ENEE).	3 Months	USD 5,000 per SS + cost of the devices
<b>SAN PEDRO SULA SUR - NACO TRANSMISSION LINES</b>							
7	Implement a program of reforestation in the area surrounding the project, as well as in the forest offsetting plan for the transmission lines. Also, maintenance to ensure satisfactory survival	<ul style="list-style-type: none"> <li>Authorization to use Villanueva nursery so that living forces, institutions reforest</li> </ul>	Trees planted	The supply of the plants for their respective planting, in co-ordination with DIMAVI, will be managed with ENEE's Engineering Department.	Environmental Studies Unit (UEA/ENEE).	2 Months	USD 10,000
8	Implement the installation of deterrent elements (Bird Rescue Devices)	<ul style="list-style-type: none"> <li>Hire expert to design system</li> <li>Manage purchase and installation of deterrent elements</li> </ul>	Expert hired Equipment installed	The purchase of the elements with the UEA/ENEE will be managed and the installation of the elements will be scheduled	The Environmental Studies Unit (UEA/ENEE).	3 Months	USD 5,000 per SS + cost of the devices
9	Removal of empty oil drums	Pollution can be generated	Removal drums	Safely remove and safely transport hazardous waste in accordance with safety protocols	ENEE	3 months	USD 3,000
10	Payment of compensation for owners who obtain title deeds pending from easement areas	Easements have been freed up and all compensation paid in land with titles	Payment of compensation	Follow the process of the formalization of outstanding plots (duly listed), and make outstanding payments and sign proof statements of no balance due	ENEE	2 years	USD 5,000
	<b>TOTAL</b>						USD 61,500

This table updates the action plan that was in the IGAs of the program, which was carried out based on an audit of previous programs