

**INTEGRATED SAFEGUARDS DATA SHEET  
APPRAISAL STAGE**

**Report No.: ISDSA17161**

**Date ISDS Prepared/Updated:** 17-Jun-2016

**Date ISDS Approved/Disclosed:** 21-Jun-2016

**I. BASIC INFORMATION**

**1. Basic Project Data**

<b>Country:</b>	Belize	<b>Project ID:</b>	P149522
<b>Project Name:</b>	Energy Resilience for Climate Adaptation (GEF/SCCF) (P149522)		
<b>Task Team Leader(s):</b>	Migara Jayawardena		
<b>Estimated Appraisal Date:</b>	25-Apr-2016	<b>Estimated Board Date:</b>	31-Aug-2016
<b>Managing Unit:</b>	GEE04	<b>Lending Instrument:</b>	Investment Project Financing
<b>GEF Focal Area:</b>	Climate change		
<b>Sector(s):</b>	General energy sector (100%)		
<b>Theme(s):</b>	Climate change (100%)		
<b>Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?</b>			No
<b>Financing (In USD Million)</b>			
Total Project Cost:	11.98	Total Bank Financing:	0.00
Financing Gap:	0.00		
<b>Financing Source</b>			<b>Amount</b>
Borrower			3.98
Global Environment Facility (GEF)			8.00
Total			11.98
<b>Environmental Category:</b>	B - Partial Assessment		
<b>Is this a Repeater project?</b>	No		

**2. Global Environmental Objective(s)**

The development objective of the proposed Energy Resilience for Climate Adaptation Project is to demonstrate solutions that enhance the resilience of the energy system to adverse weather and climate change impacts.

This will be collectively achieved by implementing a wide-ranging and complementary set of activities that include pilot initiatives, infrastructure hardening, and analytical and planning efforts.

### 3. Project Description

Better adaptation to adverse weather that is likely to be exacerbated due to climate change impacts requires enhancing energy resilience through (a) strengthening existing infrastructure (hardening) and operational capabilities in the sector to limit damages and minimize service disruptions; and, (b) improving the capabilities to respond rapidly and recover efficiently from the residual damages that will occur. This integrated risk management framework could also include financial instruments/mechanisms for better allocation of risks and for compensation. This framework for resilience, as illustrated in figure 4, was applied to identify key risks and a set of priority investments and technical assistance activities that are included in the ERCAP. They form a wide-ranging and complimentary set of solutions that will help immediately enhance and sustain the resilience of the energy sector over the long term. The ERCAP also provides a learning opportunity through piloting and demonstration that will better inform additional future actions for progressively and continuously enhancing the resilience of the energy system.

The ERCAP's primary focus will be on the power sector due to its risk exposure and significance, but the overall scope will include the broader energy sector. The project will be implemented by the Ministry of Finance, Public Service, Energy and Public Utilities (MFPSEPU) (including the National Meteorological Service, [NMS]) and Belize Electricity Limited (BEL). The ERCAP includes three components (with the following activities with the respective implementing agencies noted in brackets):

#### Component 1: Long-Term Energy Planning and Capacity Building for Adaptation

- Develop the capacity in Belize to carry out long-term energy and climate adaptation planning to identify policies, investments, and capabilities that are necessary to achieve the GoB's objectives in addressing the vulnerabilities in the energy sector, including the introduction of climate change impacts. This will include addressing significant gaps in socioeconomic and energy data, systemic collection of localized climatic and weather information, developing a predictive model for the energy sector to test the impact of policies and investments, and strengthening capacity to periodically update and refine the model. It will have input from multiple stakeholders and citizens. (MFPSEPU)
- Enhance the collection of meteorological and hydrological data through the installation of 23 meteorological and 6 hydro-meteorological monitoring stations, and the hydrological modeling of the Macal Catchment Area where the Becol hydropower station is located. The information collected will be made available to BEL in real time to improve its dispatch and operational capabilities, and serve as an input into integrating more accurate weather information and localized climatic impacts in long-term planning. (MFPSEPU/NMS)
- Design and implement an Emergency Response and Recovery Plan for the energy sector. This will include the assessment of BEL's current Hurricane Preparedness Plan, development of protocols and procedures for rapid response and efficient reconstruction from damages, and strengthening of the institutional capabilities for implementation. (BEL)

#### Component 2: Demonstration of Measures to Enhance Resilience of Energy Sector

- Segment the transmission network to isolate faults and limit the impact of system failures to minimize cascading blackouts across the system. This will include upgrading of key substations with adequate protections that will help contain faults enabling all generation sources to be available for dispatch to parts of the system that are operational. (BEL)

- Strengthen transmission network structures to withstand extreme weather events with minimal damages. This will include evaluating the suitability of different materials for identified terrain types; and demonstrating their application through the rehabilitation and replacement of transmission poles and associated infrastructure in line segments that are identified as being weakest. (BEL)
- Implement measures to enhance resilience of distribution substations for maintaining system operations. This will include structural improvements to damaged control buildings at existing distribution substations, and the relocation and securing of battery banks within premises of substations that are susceptible to flooding. (BEL)
- Enhance the capabilities for better systems operation and management to increase adaptive capacity. This will include the establishment of a backup load control and dispatch center that can substitute if BEL's main location in Belize City becomes inoperable; development of an outage management system; piloting Advanced Metering Infrastructure (AMI) that, among other things, enables enhanced awareness of customer outages; and access to real-time meteorological and hydrological information (via NMS/Component 1). These measures will enable improved system operations and response following storms. (BEL)
- Improve the communication network for better command and control coordination during response and recovery operations. This will include the upgrade to a digital very-high frequency (VHF) system; and the identification of dead spots that will be fortified through the installation of additional relays with the aim of providing full coverage to all transmission and distribution network locations. (BEL)
- Develop a strategy for better vegetation management practices for reducing potential damages to the transmission and distribution infrastructure from fallen trees and broken branches, and improving access to sites during emergencies. This will include the incorporation of good vegetation management practices that are applied by other utilities, customized for application in BEL's operations under the conditions in Belize. (BEL)

### Component 3: Project Implementation Support and Information Dissemination for Knowledge Sharing

- Disseminate information and engage citizenry on lessons learned and potential for replication of approaches to resilience demonstrated through ERCAP, by carrying out national and regional citizen/stakeholder workshops. (MFPSEPU)
- Support incremental coordination and implementation activities. (MFPSEPU/BEL)

#### **4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)**

The small civil works proposed to be constructed country-wide under Component 1 (installation of 29 meteorological and hydro-meteorological monitors) and Component 2 (minor works to improve power sector transmission and distribution systems and infrastructure), potential adverse environmental impacts are minor, and will be mitigated through implementation of Environmental Codes of Practice (ECOPs) that have been developed for the Project. Although six of the twenty nine hydro-meteorological weather and/or meteorological monitors are located in the Macal River Catchment Area in either Forest Reserves or National Parks, the ecological footprint of these stations is very small. It is understood that no access roads will be constructed to access these sites.

The reasons why OP 4.12, Involuntary Resettlement, was not triggered is as follows. The small works to be carried out under the project, such as installing meteorological and hydrological monitors, testing new materials for the poles for transmission lines, and upgrading existing distribution sub-stations, will not involve physical relocation of persons nor land acquisition. Of the

29 very small hydro-meteorological and/or meteorological monitors (seven which exist and will be upgraded and 22 new ones), a total of six will be located in the Macal River Catchment Area in either Forest Reserves or National Park. The remaining 23 weather stations will be on to be selected sites throughout the country on either uninhabited public land, or in the cases of private land only with the voluntary donation of the site (approximately four square feet in size) by the owner as documented by a Memorandum of Understanding with the National Meteorological Service. Gaining a weather station is viewed positively in Belize, and in cases where an owner might not agree, another location will be selected. With respect to small works to be carried out for improving transmission lines and transmission and distribution sub-stations, these will occur on uninhabited land already in the Right-of-Way or existing easements of the implementing agency, BEL, or agencies where it has a 15-year commercial cooperative agreement (BELCOGEN and BAPCOL).

## 5. Environmental and Social Safeguards Specialists

Bernard Baratz (GEEDR)

Noreen Beg (GEN04)

Norval Stanley Peabody (GEEDR)

Peter F. B. A. Lafere (GSU01)

6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>Part of Component 1 of the Project, includes installation of a total of twenty three meteorological (MET), six hydrological-meteorological (HYDRO-MET) and rainfall monitors. Installation of the meteorological monitors primarily consists of equipment installation in an area of about four square feet with possible anchoring with guide wires.</p> <p>The rehabilitation works under Component 2 include the upgrade of existing substation infrastructure in proximity to the BELCOGEN (biomass) and Bapcol (stand-by diesel) power plants and the upgrade of the existing transmission line connection from the BELCOGEN substation to the associated power plant. Other Component 2 works include the upgrade and replacement of damaged or weakened pole structures on existing transmission lines.</p> <p>Environmental Codes of Practice (ECOPs) have been prepared which will serve as Environmental Management Plans for the Component 1 and 2 activities described above and the Borrower will be required to provide bi-annual progress reports on the environmental management of these works.</p>
Natural Habitats OP/BP 4.04	Yes	<p>With regard to Component 1 works, although six of the twenty nine hydro-meteorological weather and/or meteorological stations are located in the Macal River Catchment Area in either Forest Reserves or National</p>

		Parks, the ecological footprint of these stations is very small. It is understood that no access roads will be constructed to access these sites, and any sites that may require the construction of an access road will not be included in the Project.
Forests OP/BP 4.36	No	Although several of the Hydro-Met stations will be located within Forest Reserves, there are no Project activities that would lead to the significant degradation and conversion of critical forest areas and forest ecosystems.
Pest Management OP 4.09	Yes	<p>Given the importance of effective vegetation management in proximity of infrastructure in order to maintain power system reliability, a study will be carried out under component 2 to review the power company's (BEL's) current practices and identify ways in which they can be improved. It will help BEL reduce potential for sustaining damages to transmission and distribution network and improve access to sites during emergencies.</p> <p>The Project does not involve the purchase or use of significant quantities of pesticides. However, this policy is triggered on a precautionary basis in the case that one of the proposed recommendation from the vegetation management study recommends the use of pesticides (e. g., herbicides). In such a case, the plan shall develop this option to be compliant with the Bank Policy on Pest Management. Note that this activity only involves the review and recommendations for improving BEL's vegetation management plan; and it does not involve the implementation of the plan.</p>
Physical Cultural Resources OP/BP 4.11	No	Given that there will be no excavation under the project, OP 4.11 is not triggered. Nevertheless, a chance finds procedure shall be inserted into all construction contracts and is discussed in the ECOPs.
Indigenous Peoples OP/ BP 4.10	No	A screening was carried out that concluded that the project activities will not affect indigenous peoples, although overall they will likely benefit together with all Belizeans from improved national energy resilience
Involuntary Resettlement OP/BP 4.12	No	A screening was carried out and concluded that the small works to be carried out under the project, such as installing meteorological and hydrological monitoring stations, testing new materials for the poles for transmission lines, and upgrading existing distribution sub-stations, will not involve physical relocation of persons nor land acquisition. Most project works will occur in uninhabited public land with the only exception

		being small weather monitors which may occasionally be located on private land but only where owners have voluntarily agreed, as documented by a MOU with the National Meteorological Service.
Safety of Dams OP/BP 4.37	No	The project does not include activities that are directly related to dams.
Projects on International Waterways OP/BP 7.50	No	The hydro-meteorological monitors under Component 1 that will be placed in the Macal Catchment area connected to the Macal River. The Macal River flows into the Belize river which runs eastwards through Belize and empties into the Caribbean sea. The Macal River is fed by the Mopan River, which is an international waterway. The hydro-metrological monitors will utilize a sensor to measure hydrological flows in the Macal catchment area. The project will therefore not involve the use or potential pollution of the water in the Macal River or other international waterways. Therefore, the policy is not triggered.
Projects in Disputed Areas OP/BP 7.60	Yes	The Bank is aware of the long-standing territorial dispute between Guatemala and Belize and the fact that on December 8, 2008, both parties signed a Special Agreement to submit to the International Court of Justice "any and all legal claims of Guatemala against Belize to land and insular territories and to any maritime areas pertaining to these territories." The Bank understands that the two countries signed a Protocol to this Special Agreement on May 25, 2015. Against this background, the Bank has determined that OP 7.60 is applicable to the Project and as required, advice from the Senior Vice president for Operations was sought and information regarding the project shared with Guatemala. However, taking into consideration the nature of activities to be financed by the Project - which are primarily pilots and small-scale investments that upgrade existing energy sector infrastructure and technical assistance for long-term strategic planning - it is the Bank's assessment that the Project is not harmful to the interests of Guatemala in line with paragraph 3(b)(i) of the OP 7.60.

## II. Key Safeguard Policy Issues and Their Management

### A. Summary of Key Safeguard Issues

#### 1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

The small civil works proposed to be constructed country-wide under Component 1 (installation of 29 meteorological and hydro-meteorological monitors) and Component 2 (minor works to improve

<p>power sector transmission and distribution systems and infrastructure), potential adverse environmental impacts are minor, and will be mitigated through implementation of Environmental Codes of Practice (ECOPs) that have been developed for the Project. Although six of the twenty nine hydro-meteorological weather and/or meteorological monitors are located in the Macal River Catchment Area in either Forest Reserves or National Parks, the ecological footprint of these stations is very small. It is understood that no access roads will be constructed to access these sites.</p>
<p><b>2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:</b></p>
<p>There are no potential long-term safeguards impacts due to future activities in the project area.</p>
<p><b>3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.</b></p>
<p>Given the minimal environmental impacts of the civil works proposed in the transmission and distribution systems, no alternatives were considered for this rehabilitation and upgrade work.</p> <p>Although six of the twenty nine hydro-meteorological weather and/or meteorological stations are located in the Macal River Catchment Area in either Forest Reserves or National Parks, the ecological footprint of these stations is very small. It is understood that no access roads will be constructed to access these sites, and any alternative sites that may have required the construction of an access road will not be included in the Project.</p>
<p><b>4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.</b></p>
<p>The ECOPs for the small civil works have been detailed above.</p> <p>The Directorate of Energy was recently relocated to what is presently the Ministry of Finance, Public Services, Energy, and Public Utilities (MFPSEPU), which will establish a Project Implementation Unit (PIU) for ERCAP. The NMS is a department within the Ministry of Works, Transport and National Emergency Management Organization, which is the GoB authority on weather and climate, is responsible for the activity on hydrological and meteorological data collection including ECP implementation. BEL, as the national power company, will be responsible for implementing all activities in ERCAP that is directly related to the power system, including transmission and distribution activities and ECOP implementation. BEL is also responsible for the preparation of the Vegetation Management Plan (part of Component 2) to define good management practices for vegetation control along transmission lines. BEL has a Safety, Health, and Environment Unit staffed by an Environmental Management representative, who prepared the ECOPs under ERCAP. The activities under BEL are relatively routine and it has the capacity to implement the two ECOPs prepared for ERCAP.</p>
<p><b>5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.</b></p>
<p>Overall the project is expected to have positive social outcomes related to improving the resilience of Belize's energy system to adverse weather and climate change impacts. The direct beneficiaries are energy consumers in Belize, including businesses and households, who will have more reliable energy services, with fewer disruptions particularly during adverse weather conditions which are expected to be exacerbated by climate change. Consultations on the proposed project were held in June 2, 2015 with key stakeholders including representatives from the private sector, government line ministries and departments, non-governmental organizations, the national university and regional organizations. Overall, the consultations validated the project design. An additional stakeholder consultation is planned during the mid-term review of the project.</p>

**B. Disclosure Requirements**

<b>Environmental Assessment/Audit/Management Plan/Other</b>	
Date of receipt by the Bank	07-Jan-2016
Date of submission to InfoShop	26-Apr-2016
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	
<b>"In country" Disclosure</b>	
Belize	04-Mar-2016
<i>Comments:</i> ECOPS by BEL was disclosed on March 4, 2016 and ECOPS by NMS was disclosed on March 8, 2016.	
<b>Pest Management Plan</b>	
Was the document disclosed prior to appraisal?	NA
Date of receipt by the Bank	NA
Date of submission to InfoShop	NA
<b>"In country" Disclosure</b>	
Belize	17-Jun-2016
<i>Comments:</i> The Project does not involve the purchase or use of significant quantities of pesticides. However, this policy is triggered on a precautionary basis in the case that one of the proposed recommendation from the vegetation management study recommends the use of pesticides (e.g., herbicides). In such a case, the plan shall develop this option to be compliant with the Bank Policy on Pest Management. At this point, no additional documents, including Pest Management Plan, are required.	
<b>If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.</b>	
<b>If in-country disclosure of any of the above documents is not expected, please explain why:</b>	

**C. Compliance Monitoring Indicators at the Corporate Level**

<b>OP/BP/GP 4.01 - Environment Assessment</b>	
Does the project require a stand-alone EA (including EMP) report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input checked="" type="checkbox"/> ]
<b>OP/BP 4.04 - Natural Habitats</b>	
Would the project result in any significant conversion or degradation of critical natural habitats?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?	Yes [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input checked="" type="checkbox"/> ]
<b>OP 4.09 - Pest Management</b>	



Does the EA adequately address the pest management issues?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Is a separate PMP required?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, has the PMP been reviewed and approved by a safeguards specialist or PM? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?	Yes [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input checked="" type="checkbox"/> ]
<b>OP 7.60 - Projects in Disputed Areas</b>	
Has the memo conveying all pertinent information on the international aspects of the project, including the procedures to be followed, and the recommendations for dealing with the issue, been prepared	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the PAD/MOP include the standard disclaimer referred to in the OP?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>The World Bank Policy on Disclosure of Information</b>	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>All Safeguard Policies</b>	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have costs related to safeguard policy measures been included in the project cost?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

### III. APPROVALS

Task Team Leader(s):	Name: Migara Jayawardena	
<b>Approved By</b>		
Practice Manager/ Manager:	Name: Antonio Alexandre Rodrigues Barbalho (PMGR)	Date: 21-Jun-2016