



Energy Resilience for Climate Adaptation (GEF/SCCF) (P149522)

LATIN AMERICA AND CARIBBEAN | Belize | Energy & Extractives Global Practice |
Global Environment Project | Investment Project Financing | FY 2017 | Seq No: 9 | ARCHIVED on 30-Jun-2021 | ISR47066 |

Implementing Agencies: Government of Belize, Belize Electricity Limited (BEL)

Key Dates

Key Project Dates

Bank Approval Date: 12-Sep-2016

Effectiveness Date: 06-Dec-2016

Planned Mid Term Review Date: 12-Feb-2021

Actual Mid-Term Review Date: 25-Jan-2021

Original Closing Date: 31-Jul-2020

Revised Closing Date: 31-May-2022

Project Development Objectives

Project Development Objective (from Project Appraisal Document)

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.

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

Components Table

Name

Component 1: Long-Term Planning and Capacity Building for Adaptation:(Cost \$2.79 M)

Component 2: Demonstration Measures to Enhance Resilience of Energy Sector:(Cost \$8.44 M)

Component 3: Project Implementation Support and Information Dissemination for Knowledge Sharing:(Cost \$0.59 M)

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	□ Moderately Satisfactory	□ Moderately Unsatisfactory
Overall Implementation Progress (IP)	□ Moderately Satisfactory	□ Moderately Unsatisfactory
Overall Risk Rating	□ Substantial	□ Substantial

Implementation Status and Key Decisions

The project implementation especially for activities under Component 2 has been behind schedule. Travel constraints continues to have negative impacts on project activities especially those require international expertise.



Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Macroeconomic	<input type="checkbox"/> Low	<input type="checkbox"/> Low	<input type="checkbox"/> Moderate
Sector Strategies and Policies	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Technical Design of Project or Program	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Institutional Capacity for Implementation and Sustainability	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial
Fiduciary	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Environment and Social	<input type="checkbox"/> Low	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Stakeholders	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Other	--	<input type="checkbox"/> Substantial	<input type="checkbox"/> High
Overall	<input type="checkbox"/> Moderate	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial

Results

PDO Indicators by Objectives / Outcomes

Demonstrate solutions that enhance resilience of the energy system to adverse weather and climate				
► Methodologies and procedures to incorporate climate resilience in long-term planning of energy infrastructure and systems developed and adopted (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-May-2022
► Transmission network segmented and protected against cascading line faults (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-May-2022
Comments:	Measures the successful implementation of protections at substations for segmenting key transmission sections linked to each generation node. This would result in: a) isolation of line faults without cascading through the system, b) all 7 generation sources able to dispatch to operational segments, c) up to full generation capacity is available for dispatch to operational segments and d) reduce service disruptions to all BEL residential customers, including e) female beneficiaries.			
□ Generation sources available for dispatch despite line faults (Number, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target



Value	5.00	5.00	5.00	7.00
□ Consumers with enhanced security of electricity supply (reduced outages) due to weather events (Number, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	274,000.00
□ Electricity consumers with enhanced security of electricity supply (reduced outages) despite weather events, of which, those are women (Number, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	139,192.00
□ Generation capacity available for dispatch despite line faults (Megawatt, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	82.50	82.50	82.50	110.00
► Weak transmission sections in the system reinforced to be more resilient (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	160.00
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-May-2022
Comments:	Measures how many new poles have successfully been installed in the weakest sections of the transmission line, resulting in increased resilience in the most vulnerable sections			

Overall Comments

Successful development of the Hydrological modelling for the Macal River Catchment Area under Component 1 has provided tools for BEL, the National Hydrological Service and National Meteorological Service to access to real time hydro and weather data, and to enable BEL to undertake analysis on inflows of water in the Macal Catchment area to improve dispatch and operations of three main hydroelectric plants in Belize located in the area.

Intermediate Results Indicators by Components

Component 1: Long-Term Planning and Capacity Building for Adaptation				
► Training sessions on energy sector long-term planning conducted (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	2.00	4.00	8.00
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-May-2022
Comments:	Measures efforts to increase national capacity for sector long-term planning, including integration of climate impacts, through the training of key personnel.			
► Weather monitor stations are installed and functioning (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target



Value	0.00	0.00	6.00	35.00
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-Mar-2022
Comments:	Measures the increase in real-time availability of data for BEL for improved weather and hydrological forecasting and system operation.			
Component 2: Demonstration Measures to Enhance Resilience of Energy Sector				
► Appropriate technologies identified to be used for transmission line design for different terrain types (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-Dec-2021
Comments:	Measures if various technology material options have been evaluated to form a basis for informed decisions on an approach to strengthen the transmission line sections/network			
► Vegetable management plan for transmission and distribution lines informed with industry good practice (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-Dec-2021
Comments:	Measures if the study on vegetation management practices have been successfully carried out to provide BEL with options to consider for implementation.			
► Comprehensive emergency preparedness and recovery plan adopted (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	09-Jul-2020	07-Apr-2020	03-Jun-2021	31-Jan-2022
Component 3: Project Implementation Support and Information Dissemination for Knowledge Sharing				
► Regional stakeholder and citizen engagement conferences held to evaluate and disseminate lessons learned and results achieved in project for enhancing energy resilience (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	1.00	1.00
Date	01-Nov-2016	07-Apr-2020	03-Jun-2021	31-May-2022
Comments:	Indicates whether input from and useful lessons and conclusions from the project have been disseminated widely to Belizian as well as the regional stakeholders.			

Performance-Based Conditions

Data on Financial Performance

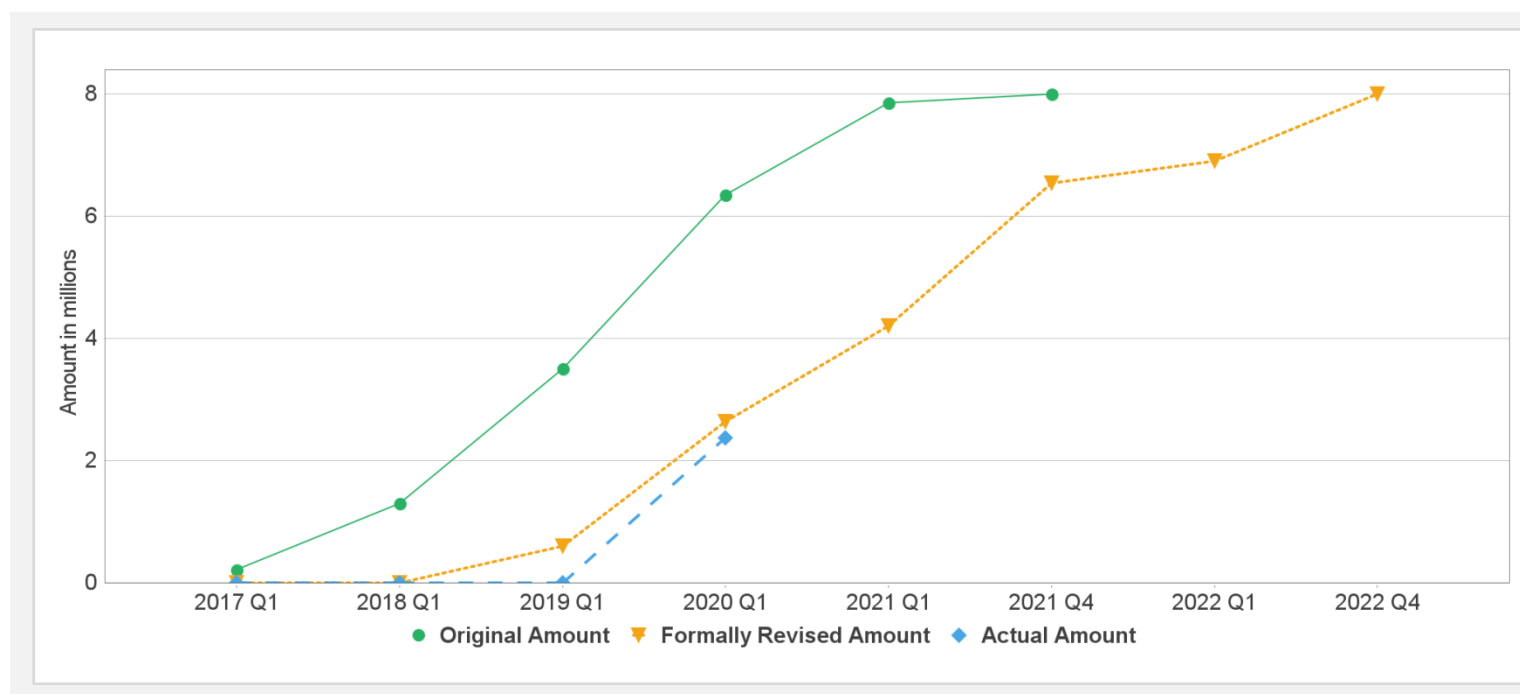
Disbursements (by loan)



Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P149522	TF-A2887	Effective	USD	5.62	5.62	0.00	2.01	3.61	36%
P149522	TF-A2888	Effective	USD	2.38	2.38	0.00	1.40	0.98	59%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P149522	TF-A2887	Effective	12-Sep-2016	22-Sep-2016	06-Dec-2016	31-Jul-2020	31-May-2022
P149522	TF-A2888	Effective	12-Sep-2016	22-Sep-2016	06-Dec-2016	31-Jul-2020	31-May-2022

Cumulative Disbursements**Restructuring History**

Level 2 Approved on 20-Dec-2018 ,Level 2 Approved on 29-Jul-2020 ,Level Approved on 31-Jul-2020

Related Project(s)

There are no related projects.