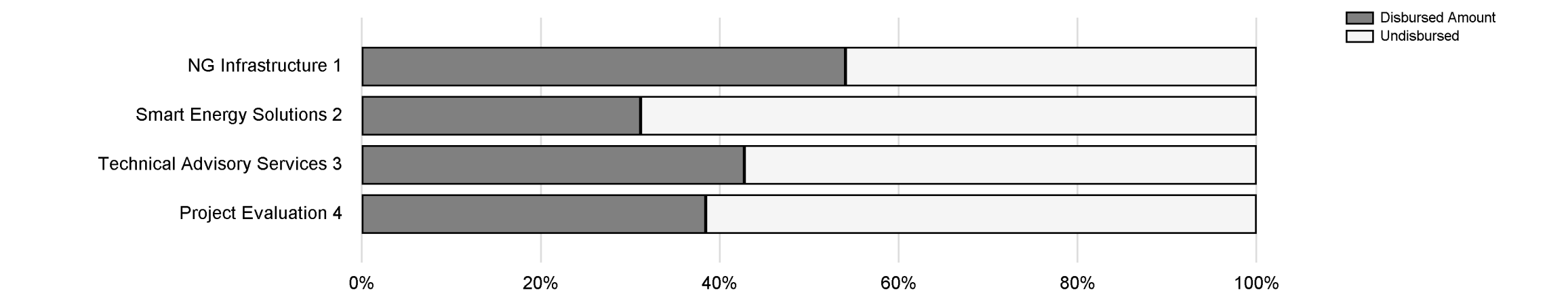


# PMR Public Report

Operation Number	BA-L1012	Chief of Operations Validation Date	03/31/23
Year- PMR Cycle	Second period Jan-Dec 2022	Division Chief Validation Date	04/14/23
Last Update	03/27/23	Country Representative Validation Date	04/27/23
PMR Validation Stage	Validated by Representative		

Basic Data			
Operation Profile			
Operation Name	Deployment of Cleaner Fuels and Renewable Energies in Barbados	Loan Number	3843/OC-BA
Executing Agency	NATIONAL PETROLEUM CORPORATION	Sector/Subsector	ENERGY-ENERGY SECTOR REHABILITATION AND EFFICIENCY
Team Leader	ECHEVERRIA, CARLOS BLADIMIR	Overall Stage	Disbursing (From eligibility until all the Operations are closed)
Operation Type	Loan Operation	Country	Barbados
Lending Instrument	Investment Loan	Convergence related Operation(s)	
Borrower	BARBADOS		
Environmental and Social Safeguards			
Impacts Category	B	Was/Were the objective(s) of this operation reformulated?	NO
Safeguard Performance Rating	Satisfactory	Date of approval	
Safeguard Performance Rating - Rationale	Currently the project focused on the initial set up of renewable energy sources and overall resource efficiencies building, due to focus of Barbados that is shifting away from LNG. Minor upgrades to local LNG lines have been performed. Additional focus and development of renewable energy (wind and solar) might be included as studies. These studies should ensure proper assessment all environmental and social impacts, especially if designed offshore. All impacts of the projects so far have been properly mitigated		

Financial Data									
	Total Cost and Source					Available Funds (US\$)			
Operations	Original IDB	Current IDB	Local Counterpart	Co-Financing / Country	Total Original Cost	Current IDB	Disb. Amount to Date	% Disbursed	Undisbursed Amount
BA-L1012	34,000,000	34,000,000	0	0	34,000,000	34,000,000	19,754,582.8	58.10%	14,245,417.2
Aggregated	34,000,000	34,000,000	0	0	34,000,000	34,000,000	19,754,582.8	58.10%	14,245,417.2
Expense Categories by Loan Contract (cumulative values)									



Please note that inactive indicators and outputs are not displayed; totals in the actual cost table may not match the sum of the cost of the outputs displayed, due to the cost of inactive outputs.

RESULTS MATRIX

General Development Objectives

General Development Objectives Nbr. 0: Expected long-term impacts include a reduction in the electricity tariff that contributes to one of the goals in the Barbados Country Strategy and GHG emissions reductions from power generation.

Observation:

Indicator		Unit of Measure	Baseline	Baseline Year	Expected Year of Achievement	EOP 2025	
0.0	Total GHG emissions resulting from power generation in Barbados	Million tons CO2 equivalent t/year	2	2015	2023	P	1.5
						A	-
Details							

**Means of Verification:** Reports Intended Nationally Determined Contribution (INDC) compliance

**Observations:**

**The General Development Objective indicator target is expected to be observed by the operation's "Fully Justified" date in Convergence (CO):** No

Pro-Gender	No	Pro-Ethnicity	No	CRF indicator					
Indicator				Unit of Measure	Baseline	Baseline Year	Expected Year of Achievement	EOP 2025	
0.1	Average national electricity tariff in Barbados			US\$/KWh	0.28	2015	2023	P	.25
								A	-
Details									

**Means of Verification:** Reports from Barbados Light and Power (BL&P)

**Observations:**

**The General Development Objective indicator target is expected to be observed by the operation's "Fully Justified" date in Convergence (CO):** No

Pro-Gender	No	Pro-Ethnicity	No	CRF indicator			

RESULTS MATRIX												
Specific Development Objectives												
Specific Development Objectives Nbr. 0: Expected Result 1: Ensure Natural gas service continuity												
Observation:												
	Indicator	Unit of Measure	Baseline	Baseline Year		2018	2019	2020	2021	2022	2023	EOP 2025
0.0	Annual Natural Gas sales by NPC to residential, commercial and industrial clients	Million cubic feet (mmcf)	511	2015	P	511	511	538	575	600	600	600
					A	511	-	-	-	-	-	-
Details												
Means of Verification: Semi-annual reports (SAR) from NPC/BNCOL.												
Observations:												
Evaluation Methodology: -												
Pro-Gender	No	Pro-Ethnicity	No	CRF indicator								
Specific Development Objectives Nbr. 1: Expected Result 2: Increase the number of LNG suppliers to Barbados to enhance energy security												
Observation:												
	Indicator	Unit of Measure	Baseline	Baseline Year		2018	2019	2020	2021	2022	2023	EOP 2025
1.0	Number of international/regional Liquefied Natural Gas (LNG) suppliers to Barbados	# of LNG suppliers	1	2015	P	2	2	2	2	2	2	2
					A	1	-	-	-	-	-	-
Details												
Means of Verification: Semi-annual reports (SAR) from NPC/BNCOL.												
Observations:												
Evaluation Methodology: -												
Pro-Gender	No	Pro-Ethnicity	No	CRF indicator								
Specific Development Objectives Nbr. 2: Expected Result 3: Reduce CO2 emission reductions from NPC/BNOCL operational and administrative facilities												
Observation:												
	Indicator	Unit of Measure	Baseline	Baseline Year		2018	2019	2020	2021	2022	2023	EOP 2025
2.0	Annual CO2 emission reductions from implementing smart energy solutions in NPC and/or BNOCL operational and administrative facilities	Tons CO2 equivalent /year	0	2015	P	-	-	-	1,500	1,500	6,000	9,000
					A	-	-	-	-	-	-	-
Details												
Means of Verification: Semi-annual reports (SAR) from NPC/BNCOL.												
Observations: Calculated based on EE saved, RE installed and accepted carbon emission reduction methodologies. Smart energy solutions includes RE and EE.												
Evaluation Methodology: -												
Pro-Gender	No	Pro-Ethnicity	No	CRF indicator								
Specific Development Objectives Nbr. 3: Expected Result 4: Increased operational efficiency in NG transmission and distribution												
Observation:												
	Indicator	Unit of Measure	Baseline	Baseline Year		2018	2019	2020	2021	2022	2023	EOP 2025
3.0	NPC's Annual Operational cost per customer	US\$/ customer	5.2	2015	P	5.2	-	-	-	-	4.3	4.3
					A	5.2	-	-	-	-	-	-
Details												
Means of Verification: Semi-annual reports (SAR) from NPC/BNCOL.												
Observations: The operational cost per customer will take into account only transmission and distribution of NG which is NPC's main responsibility												

Evaluation Methodology: -

Pro-Gender	No	Pro-Ethnicity	No	CRF indicator	

Specific Development Objectives Nbr. 4: Expected Result 5: Increase private sector participation to develop an LNG project

Observation:

	Indicator	Unit of Measure	Baseline	Baseline Year		2018	2019	2020	2021	2022	2023	EOP 2025
4.0	Number of private sector partners with a contract awarded to implement the Small LNG Plant	# of private sector partners	0	2015	P	-	1	-	-	-	-	1
					A	-	-	-	-	-	-	-
Details												

Means of Verification: Contract with winning proponent which will be attached to the semi-annual reports from NPC and BNOCL

Observations:

Evaluation Methodology: -

Pro-Gender	No	Pro-Ethnicity	No	CRF indicator	

RESULTS MATRIX

OUTPUTS: ANNUAL PHYSICAL AND FINANCIAL PROGRESS

Component Nbr. 1 Component 1: Natural Gas Infrastructure

				PHYSICAL PROGRESS		FINANCIAL PROGRESS	
	Output	Unit of Measure		2022	EOP 2025	2022	EOP 2025
1.01	Monitoring and control systems upgraded/replaced	# of Systems	P	-	7	-	6,241,431.5
			P (a)	0.35	3	767,712	4,625,820.88
			A	0.35	2.75	669,788	3,966,298.88
1.02	Pipelines for transmission and distribution replaced, realigned and/or installed	Km of pipeline	P	-	10	-	8,286,400.2
			P (a)	3.2	12.5	2,499,761	5,817,450.78
			A	3.5	3.5	1,574,663	2,205,029.78
1.03	Natural Gas distribution stations upgraded	# of stations	P	-	1	-	250,000
			P (a)	-	1	-	900,000
			A	-	-	-	-
1.04	On-road Natural Gas distribution fleet acquired or modernized	# of vehicles	P	-	12	-	1,500,000
			P (a)	-	31	-	1,160,023.27
			A	-	22	-	776,149.27

Component Nbr. 2 Component 2: Smart Energy Solutions

				PHYSICAL PROGRESS		FINANCIAL PROGRESS	
	Output	Unit of Measure		2022	EOP 2025	2022	EOP 2025
2.01	RE capacity installed in NPC/BNOCL/newly created entity facilities	MW	P	0.85	1.15	-	4,704,826.05
			P (a)	3.28	9.1	2,420,903	12,424,649.93
			A	3.28	4.1	347,215	5,140,487.93
2.02	EE and/or RE equipment installed in NPC and/or BNOCL or newly created entity’s operational and administrative facilities	Binary (yes/no)	P	-	1	-	1,360,000
			P (a)	-	1	-	300,000
			A	-	-	-	-
2.03	Technical Feasibility Study developed for Wind facilities in Barbados	# of studies	P	-	-	-	-
			P (a)	-	1	137,819	551,273.95
			A	-	-	-	110,254.95
2.04	Technical Feasibility Study of Biogas Production from Agrowaste	# of studies	P	-	-	-	-
			P (a)	-	1	-	52,400
			A	-	-	-	-

Component Nbr. 3 Component 3: Technical Advisory Services

				PHYSICAL PROGRESS		FINANCIAL PROGRESS	
	Output	Unit of Measure		2022	EOP 2025	2022	EOP 2025
3.01	Studies developed to improve NPC and/or BNOCL or newly created entity’s corporate governance, environmental, legal and regulatory functions, quality management systems, and information technology	# of studies	P	-	4	270,000	1,223,000
			P (a)	-	4	31,111	716,914.06
			A	-	1	6,667	406,914.06
3.02	NPC and/or BNOCL or newly created entity personnel trained in technical and management areas to support Natural Gas expansion	# of persons	P	-	17	-	150,000
			P (a)	9	30	5,810	55,810
			A	13	13	5,810	5,810

Other Cost					
	Program Management, Monitoring and Evaluation	P	444,164.15	2,523,083.39	
		P (a)	607,339	7,395,657.13	

	Program Management, Monitoring and Evaluation	A	567,019	2,368,467.61
Total Cost				
	Total Cost	P	714,164.15	33,594,203.09
		P (a)	6,470,455	34,000,000
		A	3,171,162	14,979,412.48

CHANGES TO THE MATRIX

Section	Name	Type of Change	Sub type	Modified By	Entered in System
Output	Monitoring and control systems upgraded/replaced	Modify Output	Modify Financial EOP P(a) value - caused by a change in the Financial P(a).	CARLOSEC	3/21/2023
			Modify Financial Historical Actual	CARLOSEC	3/21/2023
	NPC and/or BNOCL or newly created entity personnel trained in technical and management areas to support Natural Gas expansion	Modify Output	Modify Physical EOP P(a) value - caused by a change in the Physical P(a).	CARLOSEC	3/17/2023
	On-road Natural Gas distribution fleet acquired or modernized	Modify Output	Modify Financial EOP P(a) value - caused by a change in the Financial P(a).	CARLOSEC	3/16/2023
			Modify Physical EOP P(a) value - caused by a change in the Physical P(a).	CARLOSEC	3/16/2023
	Pipelines for transmission and distribution replaced, realigned and/or installed	Modify Output	Modify Financial EOP P(a) value - caused by a change in the Financial P(a).	CARLOSEC	3/16/2023
	RE capacity installed in NPC/BNOCL/newly created entity facilities	Modify Output	Modify Financial EOP P(a) value - caused by a change in the Financial P(a).	CARLOSEC	3/16/2023
	Studies developed to improve NPC and/or BNOCL or newly created entity's corporate governance, environmental, legal and regulatory functions, quality management systems, and information technology	Modify Output	Modify Financial EOP P(a) value - caused by a change in the Financial P(a).	CARLOSEC	3/21/2023
			Modify Financial Historical Actual	CARLOSEC	3/21/2023
	Technical Feasibility Study developed for Wind facilities in Barbados	Modify Output	Modify Financial EOP P(a) value - caused by a change in the Financial P(a).	CARLOSEC	3/16/2023
	Technical Feasibility Study of Biogas Production from Agrowaste	Create Output	N/A	CARLOSEC	3/17/2023
		Modify Output	Modify Baseline and/or Baseline Year	CARLOSEC	3/17/2023
			Modify Means of Verification	CARLOSEC	3/17/2023

RISKS AND PLANNED RESPONSES

Risk ID	Risk Status		Risk Taxonomy		
1	Materialized		Political Environment		
	Response Actions				
	1.01	Management Strategy		Status	
		MITIGATE		INACTIVE	

Risk ID	Risk Status		Risk Taxonomy		
2	Inactive		Institutional Environment		
	Response Actions				
	2.01	Management Strategy		Status	
		MITIGATE		INACTIVE	

Risk ID	Risk Status		Risk Taxonomy
3	Materialized		Political Environment
	Response Actions		
	3.01	Management Strategy	Status
		ACCEPT	INACTIVE

Risk ID	Risk Status		Risk Taxonomy
4	Active		Social Environment
	Response Actions		
	4.01	Management Strategy	Status
		MITIGATE	INACTIVE

Risk ID	Risk Status		Risk Taxonomy
5	Active		Internal Processes
	Response Actions		
	5.01	Management Strategy	Status
		MITIGATE	ACTIVE



Risk ID	Risk Status		Risk Taxonomy
6	Active		Social Environment
	Response Actions		
	6.01	Management Strategy	Status
		MITIGATE	ACTIVE

Risk ID	Risk Status		Risk Taxonomy
7	Inactive		Institutional Environment
	Response Actions		
	7.01	Management Strategy	Status
		MITIGATE	INACTIVE

Risk ID	Risk Status		Risk Taxonomy
8	Active		Institutional Environment
	Response Actions		
	8.01	Management Strategy	Status
		MITIGATE	ACTIVE

Risk ID	Risk Status		Risk Taxonomy
9	Active		Institutional Environment
	Response Actions		
	9.01	Management Strategy	Status
		MITIGATE	ACTIVE

IMPLEMENTATION STATUS AND LEARNING

Lesson Learned - Categories
Acquisitions and Procurement - Bidding Stage