Board of Executive Directors
No-Objection Procedure
Expires on 16 November 2018

PR-4636
2 November 2018
Original: English
Public
Simultaneous Disclosure

To: The Executive Directors

From: The Secretary

Subject: Guyana. Proposal for a loan for the project "Energy Matrix Diversification and Institutional Strengthening of the Department of Energy"

Basic Information:

Loan type	Specific Investment Loan (ESP)
Borrower	Cooperative Republic of Guyana
Amount	up to US$10,580,000
Source	Concessional Ordinary Capital
Amount	up to US$10,580,000
Source	Ordinary Capital

Inquiries to: Jaime Sologuren (telephone Country Office in Guyana 592-225-7950) or Gerard Alleng (extension 2686)

Remarks: The Executive Directors are requested to inform the Secretary, in writing, no later than **16 November 2018**, if they wish to interrupt this procedure. If no such communication is received by that date, the attached resolution will be considered adopted by the Board of Executive Directors, and a record to that effect will be made in the minutes of a forthcoming meeting.

Management has determined that this loan proposal meets the requirements for presentation by No-Objection Procedure, in accordance with Part III, Section 2 (paragraph 3.29 (b)) of the Regulations of the Board of Executive Directors and Part III, paragraph 3.5 of document GN-1838-3.

Reference: GN-1838-3(6/18), DR-398-18(8/18), GN-2915(2/18), GN-2915-2(8/18), AB-2504(11/06), AG-9/06

PUBLIC
SIMULTANEOUS DISCLOSURE

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

COOPERATIVE REPUBLIC OF GUYANA

ENERGY MATRIX DIVERSIFICATION AND INSTITUTIONAL STRENGTHENING OF THE DEPARTMENT OF ENERGY (EMISDE)

(GY-L1066)

LOAN PROPOSAL

This document was prepared by the project team consisting of: Jaime Sologuren (ENE/CGY) Team Leader; Gerard Alleng (CSD/CCS) Co-Team Leader; Leopoldo Montanez, Javier Cuervo, Virginia Snyder, Rodrigo Aragón, Augusto Bonzi, and Jeanette Bonifaz (INE/ENE); Emily Brearley (CCB/CGY); Lenin H. Balza (INE/INE); Andrea Gaviano (VPS/ESG); Alan Mentis (CCB/CGY); Sissi Larrea (INE/GDI); Ivan Gaviria and Paula Louis-Grant (FMP/CGY); and Louis-Francois Chretien (LEG/SGO).

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ELECTRONIC LINKS

REQUIRED

1. Pluriannual Execution Plan (PEP) and Annual Operational Plan (AOP)
2. Monitoring and Evaluation Arrangements
3. Environmental and Social Management Report (ESMR)
4. Procurement Plan (PP)

OPTIONAL

1. Technical document for solar PV plants in Bartica, Lethem and Mahdia
2. Technical document for L5 69 kV Transmission line
3. Technical document for reactive compensation system
4. Cost-Benefit Analysis
5. Public Utilities Policy Analysis (PUP)
6. Gender Analysis
7. Program Operation Manual (POM)
8. Safeguard Policy Filter (SPF) and Safeguard Screening Form (SSF)

ABREVIATIONS	
AOP	Annual Operational Plan
BOE	Barrels of Oil-Equivalent
DBIS	Demerara Berbice Interconnected System
DE	Department of Energy
EAs	Executing Agencies
ESA	Environmental and Social Assessments
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Management Report
GDP	Gross Domestic Product
GEA	Guyana Energy Agency
GoG	Government of Guyana
GPL	Guyana Power and Light Inc.
GRA	Guyana Revenue Authority
GSDS	Green State Development Strategy
HECI	Hinterland Electrification Company Inc.
HEP	Hinterland Electrification Program
IRR	Internal Rate of Return
IsDB	Islamic Development Bank
MoPI	Ministry of Public Infrastructure
MW	Megawatts
NG	Natural Gas
NPV	Net Present Value
O&G	Oil and Gas
OC	Ordinary Capital
PCU	Program Coordinating Unit
PEP	Pluri-annual Execution Plan
POM	Program Operation Manual
PP	Procurement Plan
PUP	Public Utility Policy
PV	Photovoltaic
RE	Renewable Energy
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SHS	Solar Home PV-Systems
SPF	Safeguard Policy Filter
SSF	Safeguard Screening Form
ToR	Terms of Reference
VAR	Volt-Ampere-Reactive

PROJECT SUMMARY
GUYANA
ENERGY MATRIX DIVERSIFICATION AND INSTITUTIONAL STRENGTHENING OF THE DEPARTMENT OF ENERGY (EMISDE)
(GY-L1066)

Financial Terms and Conditions			
Borrower:	**Source [f]**	**%**	**Amount (US$)**
Cooperative Republic of Guyana	**IDB (Regular Ordinary Capital):**	42	10,580,000
	IDB (Concessional Ordinary Capital):	42	10,580,000
	IDB:	**84**	**21,160,000**
Executing Agencies:	**Local:**	16	3,950,000
Guyana Energy Agency (GEA) and Guyana Power and Light Inc. (GPL)	**Total:**	**100**	**25,110,000**

	OC Regular [a]	**OC Concessional**
Amortization Period:	25 years	40 years
Disbursement Period:	4 years	
Grace Period:	5.5 years[b]	40 years
Interest rate:	LIBOR based	0.25%
Credit Fee:	[c]	N/A
Inspection and supervision fee:	[c]	N/A
Weighted Average Life (WAL):	15.25 years	N/A
Moneda de aprobación:	Dollars of the United States of America	

Project at a Glance

Project Objective/Description: the objective of the program is to support Guyana's evolving energy sector by: (i) investing in sustainable/cleaner energy solutions to diversify the energy matrix in the Hinterland while contributing to climate change mitigation; (ii) investing in the reinforcement of transmission infrastructure to improve reliability and stability of the Demerara Berbice Interconnected System (DBIS); and (iii) strengthening the Department of Energy (DE) to develop a regulatory framework, and improve institutional capacity and governance of the Oil and Gas (O&G) sector.

Special Contractual Clauses prior to first disbursement: The Borrower will provide evidence to the satisfaction of the Bank of: (i) the entry into force of the Program Operation Manual (POM) according to the terms and conditions previously agreed with the Bank; (ii) the entry into force of a subsidiary agreement between the Borrower, GEA and GPL establishing the obligations of the parties for the execution of Program Components 1 and 3, and 2 respectively, and the manner in which the resources of the loan and of the local counterpart will be transferred; (iii) the establishment of a Program Coordinating Unit (PCU) within GEA and recruitment or assignment of a coordinator, a renewable energy specialist, a financial specialist with experience in contract management, and a monitoring assistant; and (iv) the recruitment or assignment within the GPL's existing PCU of an electricity transmission design expert, a financial assistant, a procurement assistant, and of a monitoring assistant (¶3.7). For additional special contractual conditions please see the Environmental and Social Management Report (ESMR).

Special Contractual Clauses of execution: prior to the initiation of the program activities of Component 3, the Borrower will provide evidence to the satisfaction of the Bank of the entry into force of an agreement between the DE and GEA establishing respective roles and responsibilities for the implementation of Component 3. For additional special contractual conditions please see the ESMR.

Exceptions to Bank Policies: None

Strategic Alignment						
Challenges[d]:	SI	☑	PI	☑	EI	☐
Cross-Cutting Themes[e]:	GD	☑	CC	☑	IC	☑

[a] Under the Flexible Financing Facility (FN-655-1), the borrower has the option to request modifications to the amortization schedule as well as currency and interest rate conversions. In considering such requests, the Bank will take into account operational and risk management considerations.

[b] Under the flexible repayment options of the Flexible Financing Facility (FFF), changes in the grace period are possible as long the Original Weighted Average Life (WAL) and the last payment date, as documented in the loan agreement, are not exceeded.

[c] The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors during its review of the Bank's lending charges, in accordance with the relevant policies.

[d] SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

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

[f] In parallel to IDB resources, as part of a loan of up to the amount of US$20 million to the Co-operative Republic of Guyana, the Islamic Development Bank (IsDB) may be providing parallel public co-financing estimated to be in the amount of US$4 million for the financing of activities complementary to those in Component 2 of the Program. These additional reimbursable resources from the IsDB will be administered directly by the Co-operative Republic of Guyana and the IsDB.

I. DESCRIPTION AND RESULTS MONITORING

A. Background, Problem Addressed, and Justification

1.1 Guyana is a small country located on the northeast coast of South America with an economy that depends predominantly on commodities. Bauxite, gold, rice, sugar, and timber represent 84% of total exports. Like other small economies, Guyana relies on imports to satisfy most of the domestic demand, particularly for capital and intermediate goods, representing half of Gross Domestic Product (GDP).[1]

1.2 Since 2013, the economy has grown at an average rate of 3.5% per year and average annual inflation remained subdued at 0.8%. Despite the positive economic performance, per capita income remains among the lowest in the english-speaking Caribbean,[2] and the Human Development Index score stands at 0.64, compared to 0.75 for the Latin America and Caribbean region.[3] Between 2014 and 2017, total expenditure as a share of GDP averaged 29.5%, while revenue as a share of GDP averaged 25.6%. This has contributed to recurrent fiscal deficits and debt financing with an average annual fiscal deficit of 4.0%.

1.3 For decades, Guyana has remained dependent on imports of fossil fuels for energy needs. At present, Guyana's main electric power utility, Guyana Power and Light (GPL), depends heavily on these imports. In 2017, electricity generation depended mainly on liquid fossil fuels and GPL spent US$67 million on that fuel. Electriciy generation in rural areas is unreliable and expensive, and is highly dependent on diesel. Therefore, exposure to international oil price fluctuations, availability of fuel for power generation, and high fuel costs have historically constrained the pace of the country's development while creating balance of payments challenges.

1.4 Guyana has an opportunity to improve energy security and generation capacity. The recent discovery of Oil and Gas (O&G) will bring important revenue flows to the country (¶1.16). Considered to be a game changer in the country's development,[4] it also presents an opportunity for Guyana to develop a sustainable energy matrix. Large reserves of associated Natural Gas (NG) could be brought to shore and together with Renewable Energy (RE) sources can transform the sector towards a cleaner and greener electricity generation matrix.

1.5 The Government of Guyana (GoG), in the Green State Development Strategy (GSDS), aims to modify the energy matrix by incorporating cleaner solutions in the generation mix at a national level. However, to respond to the GSDS, there is a need to improve capacities for planning and governance to address the underlying constraints to growth with critical and transformational infrastructure.[5] In this sense, as the country emerges as one of the most important O&G producers in the

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1 Guyana Country Development Challenges. IDB. December 2016.
2 World Economic Outlook, 04/2018.
3 http://hdr.undp.org/en/composite/HDI.
4 GDP growth of 38.5% in 2020, expected year of first oil extraction and 28.5% in 2021 (2017 IMF Article IV Consultation with Guyana. IMF Country Report No. 17/175).
5 The IDB Group Country Strategy with the Cooperative Republic of Guyana (2017-2021) (GN-2905).

Caribbean, careful policy-making, investment, and local capacity strengthening to manage the new energy sector will be crucial.

1.6 **The Energy Sector.** Traditionally comprised by the electricity sector (generation-transmission-distribution, in rural and urban areas) and fossil fuel import/distribution, Guyana must deal with a new O&G sector as producer and exporter.

1.7 The energy sector can be presented by: (i) the electricity sector; and (ii) the O&G sectors. Therefore, while the country has important challenges in the diversification of the electricity generation mix with renewables and the associated transmission and distribution[6] upgrades; the O&G discovery generates the immediate need to develop local capacity for managing this sector for it to become efficient and transparent, and at the same time supply gas to generate electricity.

1.8 **The Electricity Sector.** It can be separated in two categories: off-grid systems in rural areas, better known as the Hinterland;[7] and the Demerara-Berbice Interconnected System (DBIS).

1.9 The Hinterland are often geographically isolated and electricity generation is supplied by centralized, community-scale diesel generators using imported fuel, subject to variations in fuel availability.

1.10 Over the last decade, the GoG has launched several initiatives to help increase electricity access to the rural population,[8] as well as to improve energy security and affordability. From 2011-2014, 11,000 65-watt Solar Home PV-Systems (SHS) were installed under the Hinterland Electrification Program (HEP) and in 2016, another 6,000 SHS were installed with the support of the IDB.[9] The years after, the GoG also introduced small PV systems for social infrastructure (health and education facilities).

1.11 In past years, the GoG commenced a plan and developed power generation projects to diversify the electricity matrix in the Hinterland envisaging extensive use of RE such as mini-hydro, biogas, wind and solar and displacing diesel generation power plants.

1.12 The government developed the Green Bartica Plan,[10] which aims to create a climate resilient economy and establish a green pathway including the electricity sector. In addition, the Guyana Energy Agency (GEA), in coordination with the Hinterland Electrification Company Inc. (HECI), started to develop plans for mini-hydro and micro-solar PV grid systems in many rural regions of the country, partly in collaboration with the IDB and other development partners.[11]

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6 IDB with 3239/BL-GY is already supporting 830 KM of distribution lines rehabilitation.

7 The hinterland are rural communities distant from the coast. They represent about 85% of the country's territory and 20% of the population, comprised mostly of indigenous people such as Amerindians.

8 Total population in Guyana is estimated at 0.8 million people (2017). Rural electricity access is about 29%. Urban areas estimated at 90.1%.

9 Guyana REDD+ Investment Fund funded HEP.

10 http://moc.gov.gy/tag/green-bartica-development-and-land-use-plan/.

11 GRT/FM-13897-GY supports a 150 Kilo-Watt (KW) run of the river mini-hydro power plant and designs are developed for 10 solar PV mini-grids.

1.13 The other important category in the electricity sector is the DBIS, which is the principal system in the country and it is owned, operated and managed by GPL. The installed generating capacity of the DBIS is 172 (Megawatts) MW, of which 135.9 MW is considered effective and operative, and runs by liquid fossil fuels.[12]

1.14 Over the last six years, electricity demand has exhibited annual average growth rate of 4.3%, which is expected to continue to increase as a result of GDP growth due to the oil discoveries. As such, it is expected that the DBIS will experience a threefold increase in demand, from 762.2 GWh in 2017 to 2,173 GWh by 2035.[13] This forecast translates into an installed capacity of 330 MW by 2035, requiring a significant improvement in the transmission and distribution system of the DBIS. The transmission system in DBIS is relatively small and is comprised by 276 km of 69 kV lines interconnecting 15 substations, from Skeldon (Berbice region) to Edinburgh Cannes (Demerara region) in a radial structure along the coastal area. The frequency of the electrical system is 60 HZ, and the entire transmission infrastructure belongs to GPL. Consumption in the DBIS is 45% residential, 37% industrial, and 18% commercial. As of December 2017, GPL had 188,664 customers.

1.15 Due to its configuration, maintenance of the infrastructure is difficult since the line needs to be in constant operation. For this reason, outages occur when maintenance is performed.[14] There is an estimated 70 MW of independent generation not connected to the grid. These producers, mostly industries and large commercial businesses, had to invest in their own generators due to the high cost and poor reliability of the interconnected system.[15] Therefore, the DBIS also identifies the need to strengthen the national transmission and distribution infrastructure that can, not only incorporate new diversified generation capacity, but provide better and reliable electricity to the population.

1.16 **The O&G Sector.** Since 2015, a consortium of three major international oil companies - ExxonMobil, Hess and the China National Offshore Corporation, have held licenses to explore for oil in Stadbroek block, located 210 miles off the country's coast.[16]

1.17 In 2017, the discovery of several economically viable oil deposits within the block was announced. The consortium found viable oil reservoirs after drilling four exploratory wells in the Liza field of Stabroek block (Liza 1, 2, 3, and 4) and two more in the Payara reservoir (Payara-1 and Payara-2). Further exploratory wells Snoek-1, Turbot-1, and Longtail-1 were also successful. The consortium estimates that recoverable resources from the Stabroek block stand at around 4 billion barrels of oil-equivalent (boe). This discovery places the country among the 40 largest reserve-holders in the world.[17]

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12 Approximately 30 MW biomass plant is under the public sugar company (not operational).
13 Update DBIS Generation Expansion Plan 2018 p-145.
14 During 2017, six system outages occurred.
15 Electricity tariff averages US$0.30/kWh. Tariffs in the region (US$/kWh): Suriname (0.05), Trinidad and Tobago (0.06); Jamaica (0.24); Barbados (0.26).
16 The Stabroek block currently comprises 26,800 square kilometers. Esso Exploration and Production Guyana Limited is the operator and holds a 45% interest in the Stabroek block. Hess Guyana Exploration Ltd. holds a 30% interest, and CNOOC Nexen Petroleum Guyana Limited holds a 25% interest.
17 Energy Information Administration - Oil Reserves Data.

1.18 This oil discovery represents a significant shift in Guyana's development trajectory. Early estimates by the consortium show oil production with an initial output of 120,000 boe/day and projected to reach 300,000 boe/day in 2025. Should these production levels be met, the value of oil production could reach approximately US$3.2 billion in 2020, a figure equivalent to about 89% of the current GDP.[18] While the main direct effect of the oil sector on the domestic economy will be through fiscal revenue, if well managed, it could improve the overall standard of living of the people of Guyana.

1.19 Upstream O&G production presents an entirely distinct set of governance challenges for the resource-owning state from those that Guyana has faced heretofore as an oil importer. The country lacks the regulatory and institutional framework to manage the new sector (¶1.34), and the necessary arrangements to regulate the participation of potential private investors.

1.20 **Problems Identified.** The main challenges of the energy sector that this program has identified and will contribute to solve are: (i) lack of diversification of energy sources in electricity generation in the Hinterland; (ii) poor transmission infrastructure reliability and stability; and (iii) capacity development of the O&G sector.

1.21 **Lack of diversification of energy sources in electricity generation in the Hinterland.** To date, the operation of small off-grids in the Hinterland relies on imported diesel for power generation, which is costly and negatively affects the environment. The fuel is usually transported in bulk using rivers and unpaved roads which becomes increasingly problematic in the rainy season,[19] resulting in limited electricity service to a certain number of hours[20] and unreliable and expensive electricity costs.

1.22 Three of the largest townships using diesel generation that are planned to be supported with the present program are Bartica (population 15,000), Lethem (population 5,000) and Mahdia (population 4,200),[21] where electricity services are operated by the respective government-owned local utilities and coordinated by HECI. Electricity supply in Lethem is provided by the Lethem Power Company with an installed capacity of 3.2 MW, and in Mahdia by the Mahdia Power and Light Inc. with an installed capacity of 1.2 MW. The exception to the local utility rule is in Bartica, where GPL operates the local system with an installed capacity of 4.4 MW. The generation systems, all diesel-based, are a mix of aged turbines with reduced efficiency in both, generation and fuel consumption. The government-owned utilities face costs significantly higher compared to the provision of supply on the coastal areas. At the same time, the utilities did not have access to solar technology at utility scale, mainly due to lack of technical knowledge of those systems. They have been traditionally conditioned to the use of diesel generators

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18 IMF Article IV 2018 p-4.

19 In Lethem and Mahdia, 450 and 200 kilometers from Georgetown respectively, transportation of bulk fuel is done mainly by trucks which becomes very difficult during the rainy season.

20 Lethem has 24/7 service except during rainy season (May-July); Madhia 18/7 year round (lower during rainy season); and Bartica 24/7 year round (depending on diesel availability).

21 These three townships were selected as part of a GoG plan for developing the interior while deconcentrating the population in the coastal areas.

on a large-scale. Therefore, fuel use accounts for between 60 - 80% of the total operational cost of the power utilities.

1.23 The high cost and low quality of service has hindered the development of electricity services and limited productive activities in the communities as well as limited the spread of information and communication infrastructure. The high cost burden to supply electricity to isolated rural areas has required the GoG to regularly subsidize electricity tariffs. In Lethem generation costs are about US$0.49/ kWh, while consumers currently pay an average rate of US$0.33-0.40/kWh, requiring government subsidies in the range of US$500,000 per year. More broadly, the cost of electricity in the hinterland townships can be as high as US$0.50/Kilo-Watt-hour (kWh). Using diesel in power generation has contributed to Guyana's greenhouse gas emissions and delayed climate change mitigation goals as indicated in Guyana's commitments to the Paris Agreement.[22]

1.24 Gender balance is another cross-cutting challenge in the project townships. It is linked to the current range of feasible economic actives in these rural areas. The IDB conducted an analysis of specific issues affecting women and/or men[23] to understand the local environment for women (Gender Analysis). In mining towns, men leave the household for extended periods to work in the gold mines. Women are left in charge of the family and farming activities, assuming full responsibilities for maintaining the house, working the land and taking care of the children, limiting their opportunities to generate income for their survival and that of their family.

1.25 Therefore, the support of productive use of electricity represents an opportunity to shape programming to provide electricity to communities and empower women within those communities to make further gains in education, enter the workforce, and start businesses (specific activities in ¶1.41 and ¶1.42). Gender-focused pilot interventions can be a driver for energy investments.[24]

1.26 **Poor transmission infrastructure reliability and stability.** The DBIS transmission electricity system requires large infrastructure investments. The updated expansion plan highlights the need to reinforce and upgrade the transmission system of the DBIS to: (i) attend to the increasing electricity demand estimated over the next 15 years; (ii) reach international operating standards by replacing aged and unreliable equipment; (iii) integrate new generation sources (such as solar and wind, and NG); (iv) improve quality of service; and (v) ensure a constant electricity supply that can adapt to variation due to seasonal or daily flows.

1.27 These increasingly higher technical requirements are particularly relevant in the New Sophia substation in Georgetown and in the transmission line from the Kingston substation.[25] The actual configuration of the DBIS transmission network in this section of the grid caused six system power outages that negatively affected the entire customer base. The normal system operating conditions with this single 69 kV circuit carrying over 30 MW, about 25% of the total system load, is crucial,

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22 Guyana's Paris Commitments indicated 100% RE by 2025.

23 Gender analysis to identify specific opportunities for women within the project. Dr.-Eng. Johanne Hanko with the collaboration of M.Sc. Eng. Isidro Espinoza.

24 https://www.usaid.gov/energy/gender/women-forefront-clean-energy-future.

25 Because a single circuit is used for such an important interconnection, there is a high possibility that scheduled maintenance would be deferred and therefore unplanned outages would increase.

as any trips for any reason can result in the shutdown of the entire system. These trips resulted in six total system shutdowns of the DBIS in 2017, causing widespread outages, high losses of revenue[26] to the company and contributing to high rate of System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) statistics for the company.[27]

1.28 The DBIS is affected by voltage variations. With no voltage support at the Sophia substation, the low voltage levels are not only outside the accepted levels required for optimal transmission (>5%) but account for low receipt of power, contributing to transmission losses and consequently affecting stability of the system and the financial situation of the company.

1.29 The low reliability of the power system as a result of failures and voltage variations, has contributed to companies leaving the country or having them to purchase self-generation equipment. Continued system unreliability undermines GPL's attempts to win back self-generation customers, and negatively impacted the development of electricity intensive value-added production/services (i.e. manufacture, tourism).

1.30 **Capacity development of the O&G sector.** The nascent O&G sector requires a regulatory framework and a cadre of trained technical experts to ensure sustainable exploitation. While there are many factors influencing development outcomes for countries that are well-endowed with natural resources, appropriate institutional frameworks are often the key element to avoid substandard outcomes. Guyana has never been an O&G producer and therefore, existing institutional, legal and regulatory laws governing the O&G energy sector are either inadequate or nonexistent. Existing GoG institutions are already overburdened, and must deal with new demands that will have important impacts on the country. In this context, the GoG has recently created the Department of Energy (DE) that now needs to develop the entire O&G regulatory and institutional architecture to allow for a proper and careful development of the country's hydrocarbon sector.[28] Guyana has limited in-country local human capacity that can develop the regulatory framework with the necessary arrangements under which both, public and private stakeholders will operate. The country requires high level technical support to build a strong and transformative O&G sector.

1.31 **The Institutional structure of the energy sector.** The Ministry of Public Infrastructure (MoPI) has the overall responsibility for the administration, high-level policy making and regulatory functions of the power sector. The sector is governed by the Electricity Sector Reform Act (ESRA) of 1999, and its ESRA Amendment 17 of 2010. The MoPI houses the following agencies: (i) the GEA oversees the provision of the policy support, technical planning, and the development of operating codes and regulations for the development of the energy sector as well as O&G importation; (ii) the HECI is in charge of the implementation and operation of projects via local utilities of small grids and solar systems installed in rural areas (Hinterland). GEA and HECI work in close collaboration due to some overlap in responsibilities; and (iii) the GPL is the public vertically-integrated utility that

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26 Estimated US$3,000 MWh in 2017.

27 SAIDI as of 2017, stood at 133 in the network; and, a SAIFI of 128.

28 The Official Gazette (Extraordinary) of Guyana number 120/2018 dated August 2, 2018 established the creation of DE under the Ministry of the Presidency.

operates the DBIS covering approximately 80% of the population. Other institutions under the MoPI are the Public Utilities Commission and the Government Electrical Inspectorate.

1.32 Responsibility for the O&G sector has been transitioned from the Ministry of Natural Resources to the recently created the DE, which operates under the Ministry of the Presidency and oversees the upstream activities of the O&G sector. The detailed scope of work and mandate of the DE - as well as the mandates and responsibilities of the other GoG agencies - is currently under development.

1.33 **Sector knowledge.** The IDB has been actively supporting GoG efforts to transform the energy sector through financing for several activities such as rural electrification, institutional strengthening, distribution network rehabilitation, and policy reforms. IDB support has included rural electrification and institutional strengthening (1103/SF-GY); legal, regulatory and institutional framework strengthening and implementation of sector policies (1938/BL-GY); network rehabilitation and loss reduction (2567/BL-GY, 3238/OC-GY,3239/BL-GY); technical assistance and development of RE (GRT/FM-13897-GY); technical cooperation for gas to power feasibility studies (ATN/OC-16533-GY); and NG associated infrastructure for onshore gas availability (ATN/OC-16532-GY). Experience shows that transmission infrastructure rehabilitation is needed for further improvement of the reliability of service. Experience showed that the penetration of RE in rural areas presents a suitable technology option for electricity access and diesel fuel displacement in electricity generation.

1.34 Lastly, the IDB is preparing a multi-tranche Policy Based-loan operation (GY-L1067). The objective is to support the energy sector in Guyana with the formulation and adoption of key early policy measures needed to take the initial steps towards building the O&G sector and fostering the diversification mix towards a sustainable electricity generation (¶1.48). Given the recent development in the O&G sector, a Donor Coordination initiative has been stablished to coordinate the activities of the sector. IDB is participating in the discussions and information sharing.[29]

1.35 **Strategic alignment.** The program is consistent with the Update to the Institutional Strategy (UIS) 2010-2020 (AB-3008) and is aligned with the development challenge(s) of: (i) social inclusion and equality by the promotion of productive uses of electricity; and (ii) productivity and innovation by the investment in solar technology in Bartica, Mahdia and Lethem, and the reinforcement of transmission infrastructure in the DBIS. The program is aligned with the cross-cutting theme(s) of: (i) gender equality and diversity by empowering women in productive activities; (ii) climate change and environmental sustainability as the investments include the reduction of CO_2 emissions and women empowerment by fostering entrepreneurship activities (¶1.24 and ¶1.25); and (iii) institutional capacity and rule of law with the strengthening of the DE. Additionally, the program will contribute to the Corporate Results Framework 2016-2019 (GN-2727-6) by the indicators of: (i) electricity transmission lines installed or upgraded; (ii) installed power generation from RE sources; (iii) reduction of emissions with support of

[29] The IDB has been actively supporting the DE with two ongoing TCs towards building the GoG capacity to properly manage the nascent O&G sector (ATN/OC-16533-GY and ATN/OC-16532-GY).

IDBG financing; (iv) micro/small/medium enterprises provided with non-financial support; (v) government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery; and (vi) women beneficiaries of economic initiatives by supporting the empowerment of indigenous people through productive initiatives and the promotion of access to higher quality jobs in the formal sector. The program is also aligned with the IDB Country Strategy with Guyana (GN-2905) as it supports the strategic areas of: (i) establishing a modern national strategy and planning framework; and (ii) delivering critical infrastructure to facilitate human and private sector development. The program is also included in the Update of Annex III of the 2018 Operational Program Report (GN-2915-2). Lastly, the program is aligned with the Sustainable Infrastructure for Competitiveness and Inclusive Growth Sector Strategy (GN-2710-5) and it is consistent with the Energy Sector Framework (GN-2830-5) with the development of renewable energy sources, improvement of energy security, and strengthening of the governance of the sector in Guyana.

1.36 The program is consistent with the Bank's Climate Change Sector Framework Document (GN-2835-3). According to the joint MDB approach on climate finance tracking, 68.05% of total IDB funding for this operation result in climate change mitigation activities. This contributes to the IDBG's climate finance goal of 30% of combined IDB and IIC operational approvals by year's end 2020.

1.37 **Consistency with the Public Utilities Policy (PUP) GN-2716-6.** The program meets the IDB's Public Utility Policy (PUP), GN-2716-6 policy conditions of: (i) economic evaluation by proving that the investments are economically viable in accordance with the cost-benefit evaluation methodology used and accepted by the Bank; that considered an economic-technical assessment of both the upgrade and expansion projects including a new transmission line, and the new solar PV systems in the townships; and (ii) financial sustainability by verifying that GPL, given the reduction in unserved electricity, will receive sufficient funds to meet its financial commitments and cover the operating and maintenance costs of the systems related to the operation. In addition, the selection, execution, operation, and maintenance of the program's activities comply with the scope of environmental and social sustainability of the PUP by the PV generation technology which fulfills the dual role of increasing the supply of services and contributing to environmental sustainability through the development of a lower-emissions offering. The operation is aligned with the PUP's policy objectives related to: (i) expand the capacity to provide greater access by the entire population including disadvantaged communities and groups; (ii) improve the quality and reliability of the existing service with reinforcements in the transmission systems; and (iii) create incentives for service demand and delivery of service efficiently with the off-grid solar technologies that is more affordable than the current solution using diesel (PUP Analysis).

B. Objective, Components and Cost

1.38 The objective of the program is to support Guyana's evolving energy sector by: (i) investing in sustainable/cleaner energy solutions to diversify the energy matrix in the Hinterland while contributing to climate change mitigation; (ii) investing in the reinforcement of transmission infrastructure to improve reliability and stability of

the DBIS; and (iii) strengthening the DE to develop a regulatory framework and improve institutional capacity and governance of the O&G sector.

1.39 **Component 1. Renewable Energy solutions for the Hinterland (US$8.6 million).**[30] This component will address the energy diversification policy goals of the GoG by financing investment in solar technology in three townships, financing the installation of three PV-tied mini-grid systems in Bartica (1.5 MW), Lethem (1 MW), and Mahdia (0.65 MW), totaling 3.15 MW. In addition, the component will finance the implementation of a storage capacity to manage intermittence of these sources. The GoG has already identified the location of the solar plants, which will use public land and technical project designs are under development. Considering that characteristics and needs of each township are different, the new generation plants will have tailored generation system solutions to meet respective current and future demands. The installation of solar PV systems will partially displace the use of fossil fuel for electricity generation, and therefore make a significant contribution to climate change mitigation with the reduction of CO_2 emissions. The PV mini-grid will also improve the reliability and extend the availability of the power supply for longer periods of the day during the rainy season. The PV technology at utility scale, introduced in this component, represents itself an innovative solution to satisfy a concrete need in the three townships. The investment will incorporate a pilot smart metering initiative that is considered an important step forward as it will provide a technological advancement in the operation of the distribution grid.

1.40 The financing of solar technology will contribute to the sustainable economic development of the townships. In Lethem, the component will provide reliable electricity supply to meet the expanding needs of power supply in the township, attending to a large population of indigenous people. Lethem is located on the border between Brazil and Guyana, with economic activity based largely on commerce between the two countries. Warehouses and retail businesses will benefit from more reliable electricity services. In Bartica, the new power supply will contribute to the "Green Bartica Plan" that involves a holistic approach to sustainable economic growth in the township, and climate change mitigation. Bartica's main economic activities stem from extractive industries such as mining and logging, as well as commerce. Finally, in Mahdia, the component will provide reliable and extended hours of electricity use to the overall population, especially commercial activities that increased with the recent population boom in the community. In all three townships, more than 24,000 residents connected to the grid, largely comprised of indigenous Amerindians, will be benefited with more reliable energy, and less CO_2 emissions by reducing diesel consumption.

1.41 The introduction of solar energy presents a great opportunity to implement a women's economic empowerment program at the community level, contributing mainly to the development of productive uses of electricity and community engagement. Specific issues affecting women in the townships supported by the program are related to access to energy,[31] thus, this component will support the

[30] This component supports the goals of GRT/FM-13897-GY on mobilizing resources for renewables.

[31] Grogan and Sadanand study in Nicaragua illustrates that access to electricity increases rural women working outside the home by 23%.

development of community centers with access to computers and equipment necessary for income generation activities such as sewing machines.

1.42 Training in activities that have local market potential such as tailoring, clothes sales and small enterprise development and basic management to expand opportunities for entrepreneurship, as well as computer literary and internet will also be provided.

1.43 **Component 2. Reinforcement of transmission infrastructure (US$9.95 million).** This component will finance investments to improve reliability of the transmission infrastructure of the DBIS in the Kingston-Sophia transmission section with: (i) reinforcements of the new Sophia substation; and (ii) investments in transmission system redundancy.

1.44 The first solution is based on the installation of a reactive compensation system (VAR) at the New Sophia substation. This investment requires the installation of a 69-kV bay to accommodate the connection.[32] The system will increase the power transfer capability by enhancing voltage stability and maintaining a smooth voltage profile under different network conditions.

1.45 The second solution incorporates the international standard of N-1 criteria commonly implemented in utilities. It is a two-fold solution to solve the problems associated with the single circuit L5, 69 kV transmission line, namely: (i) construct an additional transmission line between Kingston and Sophia at a higher rating than the existing line and on separate structures; and (ii) upgrade the existing line to the rating of the new line. The conductor under the current configuration is operating almost to its maximum capacity so the new one will provide the grid the possibility to operate at higher amps consequently reducing the risk of trips and outages. This will reduce outages by reducing the level of emergency maintenance and allowing the system to operate under a regular maintenance schedule. The load carried by the affected line should be smoothly transferred to the other line. One expected result of the program is to reduce and eliminate customer outages resulted from line trips on the single transmission line between Kingston and Sophia. The investment represents an important development to improve system reliability to the overall customer base of GPL and to prepare the grid for integrating future generation infrastructure, whether it be NG or renewables.[33]

1.46 A loan from the Islamic Development Bank (IsDB) to the Cooperative Republic of Guyana has been recently approved with several infrastructure investments totaling up to US$20 million. It is understood that an estimated amount of US$4 million may finance upgrades in the Kingston substation[34] (footnote (f) in the Summary). It is the first IsDB loan to Guyana.

1.47 The component incorporates the development of standards for the storage and disposal of unused electric equipment in the company, providing a guideline for GPL improvement in management and operation of the substations. Finally, GPL is an Equal Opportunity Employer, there are no policy, tools, procedures or metrics for tracking gender and diversity. Therefore, the development of a Corporate

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32 A static compensator supports stability of the grid.

33 Complementing the current operation 3369/BL-GY that aims to reduce technical and commercial losses.

34 The IsDB investment is executed in parallel and does not affect the achievement of the objectives of this loan. Specific information on the other loan components is not yet available.

Gender and Diversity Analysis for GPL is planned, which can lead to the development of an operative policy mainstreamed in GPL.

1.48 **Component 3. Institutional Strengthening and Governance of the Department of Energy (US$4.5 million).** This component will finance the activities to strengthen the newly created the DE. In particular, it will finance: (i) capacity building initiatives and best practice organizational structure, including high level training and coaching of government staff in the DE: the work will strengthen the GoG's ability to manage the O&G sector effectively and efficiently; and (ii) technical support for the development of the design of a new O&G legislative and regulatory framework that are urgently needed in Guyana considering that the country has no experience in the upstream activities. The activities of this component are also consistent with another operation currently under development (¶1.34). The design of this framework will consider international references and benchmarks and lessons learned from developing countries that have initiated similar activities in the sector, especially regarding contract management. Therefore, this component will support the GoG to improve the competitiveness and productivity of the nascent O&G sector.

1.49 **Program management and other costs (US$2.06 million)**. This component will finance management costs, audits and monitoring and evaluation of the program for both Executing Agencies (EAs).

C. Key Results Indicators

1.50 The achievement of the program's objectives will be measured against the indicators and targets set forth in the Results Matrix. The expected impacts are: (i) diversification of the energy matrix resulting in generation cost reductions; (ii) reduction and avoidance of CO_2 emissions; (iii) improvement of unserved electricity demand; and (iv) a fully functional DE with the required capacity to manage the O&G sector. Therefore, at the completion of the project, the following outcomes will be obtained: (i) utility scale solar PV capacity is installed and operating in three selected townships in the hinterland; (ii) female entrepreneur groups are empowered and use electricity in their productive activities; (iii) reduced number of outages in the DBIS; (iv) improved DBIS stability; (v) O&G regulatory framework is created; and (vi) Production Sharing Agreement procedures are in place and enforced for better management of the O&G sector.

1.51 The economic and financial evaluation with a Cost Benefit Analysis was performed and concluded that the program is economically sound. The methodology calculated the economic and financial analysis for each major investment separately (Components 1 and 2) and consolidated as a single program. The economic Net Present Value (NPV) of the program at 12% discount rate is US$4.5 million, with an Internal Rate of Return (IRR) of 15.7%. The benefits of the program are based on: (i) cost savings from solar generation in the Hinterland compared to use of light-fuel oil; (ii) reliability improvements in DBIS with the transmission reinforcements; (iii) reduction of electricity transmission losses in DBIS; and (iv) additional electricity consumption associated to voltage normalization with the new reactive compensation. The evaluation included a sensitivity analysis considering a 20% variation in eight main variables used in the economic analysis. The sensitivities led to similar results and conclusions

regarding the robustness of the program as they had positive economic NPVs and economic IRRs greater than 12% for all sensitivities.

II. Financing Structure and Main Risks

A. Financing Instruments

2.1 The project is structured as a specific investment loan, which will be financed with two sources: (i) up to US$21,160,000, with US$10,580,000 from the Bank's Ordinary Capital (OC) and US$10,580,000 from the concessional resources of the OC; and (ii) a local counterpart of US$3,950,000. The total program cost is described in Table 1. The program's disbursement period of four years is presented in Table 2. The duration of the program is based on the advanced technical design of the projects and possibility of retroactive financing. A detailed budget description covering the main activities in the operation over the disbursed period is available in the Pluriannual Execution Plan (PEP) and Annual Operational Plan (AOP).

Table 1. Program's Budget (US$)

WBS	Component/Product/Task Name	IDB Financing	Local Counterpart (a)	Total Cost
1	**Component 1. Renewable Energy Solutions for the Hinterland**	**8,600,000.00**	**-**	**8,600,000.00**
2	**Component 2. Reinforcement of Transmission Infrastructure**	**6,000,000.00**	**3,950,000.00**	**9,950,000.00**
3	**Component 3. Institutional Strengthening and Governance of the Department of Energy**	**4,500,000.00**	**-**	**4,500,000.00**
4	**Project Management and Other Costs**	**2,060,000.00**	**-**	**2,060,000.00**
4.1	*Project Management total* a. GEA b. GPL	*1,750,000.00* a.1,268,000.00 b.482,000.00	-	1,750,000.00
4.2	*Contingencies total* a. GEA b. GPL	*310,000.00* a.155,000.00 b.155,000.00	-	310,000.00
Total		**21,160,000.00**	**3,950,000.00**	**25,110,000.00**

(a) Local counterpart is expected to be provided by GPL as they consider the planned investments to be of strategic importance.

Table 2. Disbursement Projections (US$)

Source	Amounts	Year 1	Year 2	Year 3	Year 4
BID	21,160,000	6,443,595	11,345,095	2,370,748	1,000,562
Local Counterpart	3,950,000	1,296,000	2,294,000	360,000	-
TOTAL	**25,110,000**	**7,739,595**	**13,639,095**	**2,730,748**	**1,000,562**
		31%	85%	96%	100%

B. Environmental and Social Safeguard Risks

2.2 In accordance with the IDB's Policy OP-703, this operation is classified as Category "B." The infrastructure development consists of the installation of three solar plants in Bartica, Madhia and Lethem (Component 1) and the installation of a new transmission line in Georgetown and upgrade of three related substations (Component 2). It is anticipated that the project will generate moderate impacts that could be easily mitigated by the implementation of the required mitigation measures. Two Environmental and Social Assessments (ESA) were developed for both project components, which include Environmental and Social Management Plans (ESMPs) for each solar plant and one for the transmission line and substations. Additional details are presented in the attached Environmental and Social Management Report (ESMR) and a summary of key topics is presented in the paragraphs below.[35]

2.3 The main impacts for Component 1 will be associated with land clearing (pre-construction) and erosion during both construction and operations as well as other limited impacts related to worker influx, traffic, waste management and other standard impacts during construction. The ESMP includes a full set of mitigation measures to address the expected impacts. The risk, of lack of socio-environmental mitigation measures in place before construction has been identified as medium and will be mitigated by implementing environmental and social mitigation measures in the ESMP. The three townships have important presence of indigenous people and these Amerindian communities are main beneficiaries of the project; mainly positive impacts are expected on indigenous people. No land acquisition at any site is foreseen for the development of the solar plants and all the needed land is already owned by the Government; no claims from indigenous communities have been reported in the ESA and according to the consultations that were undertaken with the indigenous community leaders (Toshaos) at the three communities. Despite these conditions the program has identified as medium the risk of subsequent land claim by indigenous communities and will be mitigated with delivery of official documents on land ownership before first disbursement. Component 1 will also entail development programs for women to foster equal opportunities and, thus, a parallel gender analysis was conducted;

[35] All relevant environmental and social documentation has been disclosed.

consultations with relevant gender groups have been undertaken to understand women's expectations and the current employment situation.

2.4 The main impacts for Component 2 will be associated with the management of construction activities along the right-of-way (e.g. traffic and health and safety) that are addressed within the ESMP. During operations, considering that the project is in the urban area of Georgetown, potential impacts to avifauna are minor. There is a risk of lack of resilience planning by GPL's Projects Division to avoid flood damage that has been identified as medium. It will be mitigated by (i) the inclusion of flood reinforcement within the investment project ToRs; and (ii) full insurance coverage covered by GPL. Therefore, a qualitative analysis on disaster risk is included in the ESA along with the preliminary identification of mitigation measures to be considered into the ToRs of the design. No land acquisition from private owners is required according to both the ESA and the consultations that were undertaken; the land needed for the new transmission line is on state land and the land needed to upgrade the substation is owned by GPL directly. The risk, of lack of socio-environmental mitigation measures in place before construction has been identified as medium and will be mitigated by implementing environmental and social mitigation measures in the ESMP. Current environmental conditions at the Old Sophia substation are poor, a Remediation Plan will be required that includes: the improvement of (i) potential soil and water contamination; (ii) hazardous material storage; and (iii) general housekeeping during program implementation (Results Matrix output 6) in compliance with directive B.11, Operational Policy 703.

C. Fiduciary Risk

2.5 The responsibility for reporting to the Borrower and the IDB on fiduciary matters and program progress rests with the GEA for Components 1 and 3 and the GPL for Component 2. As detailed in Annex III, the fiduciary risk has been ranked as medium. GPL has experience executing Bank-financed projects and GEA has no experience. In the case of GEA, the main fiduciary risk, categorized as medium, of insufficient financial and administrative knowledge of IDB policies is being mitigated through: (i) the design of a POM which seeks to provide adequate guidance and mitigation measures to discharge all fiduciary duties in accordance with the Banks's rules and procedures of existing and new fiduciary and procurement teams; (ii) continuous support to streamline the timely execution of all fiduciary activities (financial management and procurement); and (iii) providing continuous technical supervision and training of financial management and procurement staff who will be responsible for fiduciary activities under the loan. In the case of GPL, the main fiduciary risk, categorized as medium, of insufficient financial management staff is mitigated by the recruitment of a financial assistant to ensure adequate segregation of duties coupled with the provision of training on Bank policies and procedures.

D. Other Key Issues and Risks

Table 3. Risks and Mitigation

RISK AND TYPE	CLASIFICATION	MITIGATION
GEA		
Development. Execution delay due to custom clearance lateness by not receiving the Guyana Revenue Authority (GRA) release within 2 weeks of arrival of goods	High	a) Engagement with Guyana Revene Authority at Senior Level. b) If after 1 1/2 months the issue is not solved by the GoG goods importation tax exemption application, a letter will be sent to GRA by GEA CEO.
Development. Lack of technical capacity, institutional inertia and insufficient human capital in the O&G sector	High	Extensive and widespread consultation with stakeholders, rapid deployment of a regulatory framework, utilization of technology to increase transparency.
Development. Political shifts and difficulty to reach consensus on the activities and scope of work of the DE	High	Close coordination with other development partners involved with the development of the DE.
GPL		
Development. Lack of technical capacity in Transmission Projects in GPL	High	a) Development of TOR for the investment. b) Train staff with the support and knowledge from 3238/OC-GY,3239/BL-GY. c) Reinforce the PCU team with a transmission expert consultant.
Public Management and Governance. PCU is overload working with numerous projects to manage.	Medium	Support staff hired with project funds (¶2.5).

2.6 **Sustainability.** The GoG is committed to support the program's sustainability beyond its execution as it has made important assurances to develop a cleaner and greener electricity matrix in the GSDS framework, commitments to the Paris Agreement and taken actions as indicated with the Clean Bartica Plan (¶1.12). Therefore, the development of the solar farms in the three townships with PV technologies – and low maintenance costs – will make significant contributions to a cleaner and affordable electricity generation in the Hinterland. Moreover, the strengthening of the DE will play an increasingly important role in managing the nascent O&G sector and ensuring its sustainability.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary of Implementation Arrangements

3.1 **Execution arrangements.** The Borrower is the Cooperative Republic of Guyana. The EAs are: GEA for Components 1 and 3, and GPL for Component 2. Each EA will have a dedicated Project Coordination Unit (PCU) (¶3.6).

3.2 **GEA.** It was established in 1997, under the purview of the MoPI and is responsible for fostering harmonization, increased monitoring and enforcement of regulations. Currently, GEA is developing a national energy policy and provides all policy support to the Ministry. GEA is also in charge of the development of the projects

for the provision of sustainable energy in the interior and main townships in coordination with the HECI. GEA has not been an EA of the Bank in the past, but a Capacity Assessment has been completed in 2018 which indicated the need that the Fiduciary Specialists (procurement and financial) will require training on the Bank's policies. HECI is the current implementer of GRT/FM-13897-GY.

3.3 **GPL**. GPL is the state-owned, vertically integrated utility. Operations comprise generation, transmission and distribution. More than 80% of the country's population is served by the utility. GPL is the current EA of 3239/BL-GY with a dedicated PCU.

3.4 The EAs will have PCUs[36] responsible for the program's technical, administrative, and operational management, including: (i) coordinating the procurement of works, goods, and services; (ii) requesting loan disbursements; (iii) preparing annual work plans, the Procurement Plan (PP), among others; (iv) submitting program management reports; (v) monitoring the supervision and inspection of works and service contracts; and (vi) acting as the interlocuter with the Bank.

3.5 The program includes the MoPI as a coordination entity between the two EAs and the IDB to ensure a successful execution. Both EAs are under the perview of the MoPI which will facilitate coordination with the Bank.

3.6 **The Program Operation Manual (POM).** The POM will establish the terms and conditions that will apply during the execution of the program, the institutional and technical framework of the program, and the level of responsibilities of the institutions involved in implementation.

3.7 The following are **special contractual clauses prior to first disbursement: the Borrower will provide evidence to the satisfaction of the Bank of: (i) the entry into force of the POM according to the terms and conditions previously agreed with the Bank; (ii) the entry into force of a subsidiary agreement between the Borrower, GEA and GPL establishing the obligations of the parties for the execution of program Components 1 and 3, and 2 respectively, and the manner in which the resources of the loan and of the local counterpart will be transferred; (iii) the establishment of a PCU within GEA and of the recruitment or assignment of a coordinator, a RE specialist, a financial specialist with experience in contract management, and a monitoring assistant; and (iv) the recruitment or assignment within GPL's existing PCU[37] of an electricity transmission design expert, a financial assistant, a procurement assistant, and of a monitoring assistant.** Condition (i) will allow for the proper execution of the program by the EAs by detailing the guiding principles for execution and coordination of activities while condition (ii) will help to establish the obligations of the parties for the execution of all components and the manner in which the financial resources of the program will be transferred. Conditions (iii) and (iv) are essential to ensure that the Borrower begins the implementation of the program with a qualified team in each EA.

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[36] Component 2 implemented by GPL, the program will use the existing PCU implementing 3239/BL-GY.
[37] (3238/OC-GY,3239/BL-GY and GRT/EX-14519-GY)

3.8 The following is the special contractual clause of execution. Prior to the initiation of program activities of Component 3, the Borrower will provide evidence to the satisfaction of the Bank, of the entry into force of an agreement between the DE and GEA establishing their respective roles and responsibilities for the implementation of Component 3. This condition will allow for the adequate implementation of institutional strengthening and governance activities of the DE.

3.9 **Procurement policies**. The procurement of goods, works, and services, and the selection of consultants financed by the Bank will be carried out in accordance with the Polices for the Procurement of Works and Goods Financed by the IDB (document GN-2349-9) and the Policies for the Selection and Contracting of Consultants Financed by the IDB (document GN-2350-9), respectively. The Procurement Plan includes details on program procurement. The procurement agreements and fiduciary requirements are included in Annex III.

3.10 The PCUs will follow procurement processes of the program as described in the PP to be approved by the Bank, which will cover the entire duration of the program starting on the date that the Loan Agreement for this program enters into effect. The PP will be updated through the semi-annual progress report, or whenever necessary or as required by the Bank.

3.11 **Retroactive Financing.** The Borrower has requested retroactive financing for procurement of consulting services. The Bank may finance retroactively eligible expenses incurred by the Borrower prior to the date of loan approval up to the amount of US$3.17 million (15% of the proposed Bank financing), provided that all the requirements are substantially similar to those set out in the loan agreement requirements The expenses may include feasibility studies in accordance with Section 1.12 of GN-2350-9. These expenses must have been incurred on or after 31 of July 2018 (approval date of the Project Profile), and under no circumstances shall expenditures incurred more than 18 months prior to the loan approval date be included.

3.12 **Audit**. During the program disbursement period, GEA and GPL will submit the annual audited financial statements to the Bank within 120 days following the close of the respective fiscal year. The audit will be conducted by an independent firm of auditors acceptable to the Bank, to be selected in accordance with the Bank's policies and procedures. The determination as to scope and other related aspects will be governed in accordance with the Financial Management Policy for IDB - financed Projects (document OP-273-6) and the Guide for the Preparation of Financial Statements and External Audits. Audit costs will be financed with the proceeds of the loan, and GEA and GPL, through the respective PCUs, will be responsible for contracting the program audit.

B. Summary of Arrangements for Monitoring Results

3.13 **Monitoring**. The monitoring arrangements include administrative missions, semi-annual progress reports, and annual external audits. GEA and GPL through the respective PCUs will carry out the overall monitoring of the program, based on the targets established in the Results Matrix and using the Annual Work Plan, which will be updated annually. The PEP will detail the progress made in the activities and include the execution schedule for the remaining years in the loan

disbursement period. GEA and GPL through their respective PCUs, will be responsible for preparing semi-annual reports and submitting them in March and September of each year, in addition to organizing meetings with the Bank to analyze the program's progress. The Bank, through the Sector Specialist, will supervise program execution (Monitoring and Evaluation Plan).

3.14 **Evaluation**. GEA and GPL will present a mid-term evaluation report to the Bank 60 days after the date on which 50% of the loan proceeds have been disbursed, or two (2) years after the first disbursement of the Loan, whichever occurs first; and a final evaluation report 90 days after the date on which 90% of the loan proceeds have been disbursed. The terms of reference for the consultants who will prepare those reports will require the prior no objection of the Bank. These reports will include: (i) progress made in fulfilling the targets of the Results Matrix; (ii) the degree of compliance works with the environmental requirements and specifications, as established in the programs' ESMPs and according to the guidelines of the IDB Social and Environmental policies (ESMR); (iii) the degree of compliance with the obligations established in the loan contract; (iv) the effectiveness of the monitoring and evaluation system; and (v) lessons learned. Upon completion of the program, a project completion report will be prepared to evaluate whether the program's objectives were met and to extract lessons that can be applied to future projects.

3.15 **Ex-post evaluation**. The IDB will perform an ex-post cost/benefit analysis with up-to date data on the: (i) costs of infrastructure financed by the program; and (ii) benefits achieved in the program. For consistency, this evaluation will - as much as possible - use methodologies similar as per the ex-ante evaluation.

Development Effectiveness Matrix		
Summary: GY-L1066		
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	Social Inclusion and Equality Productivity and Innovation Gender Equality and Diversity Climate Change and Environmental Sustainability Institutional Capacity and the Rule of Law	
Country Development Results Indicators	-Reduction of emissions with support of IDBG financing (annual million tons CO2 e)* -Women beneficiaries of economic empowerment initiatives (#)* -Micro / small / medium enterprises provided with non-financial support (#)* -Installed power generation from renewable energy sources (%)* -Government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery (#)* -Electricity transmission and distribution lines installed or upgraded (km)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2905	(i) establishing a modern national strategy and planning framework; and (ii) delivering critical infrastructure to facilitate human and private sector development
Country Program Results Matrix	GN-2915-2	The intervention is included in the 2018 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution	7.7	
3.1 Program Diagnosis	3.0	
3.2 Proposed Interventions or Solutions	1.7	
3.3 Results Matrix Quality	3.0	
4. Ex ante Economic Analysis	10.0	
4.1 Program has an ERR/NPV, or key outcomes identified for CEA	3.0	
4.2 Identified and Quantified Benefits and Costs	3.0	
4.3 Reasonable Assumptions	1.0	
4.4 Sensitivity Analysis	2.0	
4.5 Consistency with results matrix	1.0	
5. Monitoring and Evaluation	7.7	
5.1 Monitoring Mechanisms	1.8	
5.2 Evaluation Plan	6.0	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Medium	
Identified risks have been rated for magnitude and likelihood	Yes	
Mitigation measures have been identified for major risks	Yes	
Mitigation measures have indicators for tracking their implementation	Yes	
Environmental & social risk classification	B	
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Treasury, External Control. Procurement: Information System.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	0

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

The objective of the program is to support Guyana's evolving energy sector by: (i) investing in sustainable/cleaner energy solutions to diversify the energy matrix in the Hinterland while contributing to climate change mitigation; (ii) investing in the reinforcement of transmission infrastructure to improve reliability and stability of the Demerara Berbice Interconnected System (DBIS); and (iii) strengthening the Department of Energy (DE) to develop a regulatory framework, and improve institutional capacity and governance of the Oil and Gas (O&G) sector.

The documentation provides a good description of the energy sector, including a summary of the country's historical reliance on imports of fossil fuels for energy needs, and the recent discovery of oil and gas, which has brought the need to rethink the sector. A solid description of key challenges faced by the sector is presented: 1) lack of diversification of energy sources in electricity generation (Hinterland); 2) poor transmission infrastructure; and 3) the need to generate the proper institutional capacity to manage the nascent oil & gas sector.

The proposed solution is clearly linked to the problems identified. The results matrix (RM) reflects the objectives of the program and shows a clear vertical logic. The baseline and target values for key impact and outcome indicators in the RM are consistent with those in the economic analysis (EA). The lower level indicators reflect the design of the three components. The RM includes SMART indicators at the level of products, outcomes, and impacts, with their respective baseline values, targets, and means to collect the information.

The EA is based on a cost-benefit analysis, which is undertaken for each major investment separately, including an analysis for projects in each of the three targeted townships. The main benefits are a function of cost-savings from solar generation, improvements in reliability and a reduction of electricity transmission losses in DBIS, and an increase in energy consumption due to voltage normalization. Key assumptions are well supported. At the aggregate level, the EA finds a net present value (NPV) of US$4.5 million and an internal rate of return (IRR) of 15.7%. A sensitivity analysis is done under alternative scenarios modifying eight variables that can affect costs and benefits. The conservative scenario finds an IRR of 13%, with an NPV of US$1.4 million.

The monitoring & evaluation plan proposes an evaluation using an ex-post cost-benefit analysis, which is complemented with a Before-and-After evaluation.

The risks identified in the risk matrix seem reasonable and are classified as Medium risk (5) and High (5). Risks include means of mitigation and compliance indicators.

ANNEX II - RESULTS MATRIX

RESULTS MATRIX

Project Objective:	The objective of the program is to support Guyana's evolving energy sector by: (i) investing in sustainable/cleaner energy solutions to diversify the energy matrix in the Hinterland while contributing to climate change mitigation; (ii) investing in the reinforcement of transmission infrastructure to improve the reliability and stability of the Demerara Berbice Interconnected System (DBIS); and (iii) strengthening the Department of Energy (DE) to develop a regulatory framework, and improve institutional capacity and governance of the Oil and Gas (O&G) sector.

EXPECTED IMPACT

Expected Impact or Result	Indicators	Unit of measure	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations[1]
EXPECTED IMPACT #1 – TO DIVERSIFY THE ENERGY MATRIX											
Decrease in electricity generation costs	Indicator #1 – US$ for electricity production per kilowatt hour	US$/kWh	0.50	2017	0.50	0	0	0.15	0.15	Register of local utilities	Average generation cost impact in Bartica, Lethem and Mahdia. Linked to the Development Challenges (DC) of social inclusion and equality
Avoidance of CO_2 emissions	Indicator #2 – Tons of CO_2 equivalent reduced per year in the townships of	tCO2e/yr	0	2017	0	0	1,391	3,147	3,147	Register of local utilities	Cumulative reduction of CO_2 in the three townships compared to business as usual scenario[2]

[1] If the indicator (impact, outcome and/or output) satisfies the Pro-Gender criteria, please write "Pro-Gender" in this column. If the indicator satisfies the Gender Tracking criteria, please write "Gender Tracking" in this column. If the indicator satisfies the Ethnicity Tracking criteria, please write "Ethnicity Tracking" in this column. These definitions are available in the DEM Toolkit.

[2] Formula for CO_2 calculations.

	Bartica, Mahdia and Lethem										Linked to the Cross-Cutting Theme (CCT) of Climate Change and Environmental Sustainability (CC).
EXPECTED IMPACT #2 – IMPROVE RELIABILITY OF POWER SUPPLY SYSTEM											
Electricity demand is attended	Indicator #3 – Electricity not supplied due to system failures	MWh	3,591	2017	3,591	3,591	3,154	2,714	2,714	GPL records	Based on estimates of the three types of unserved demands[3]. Average 437 MWh more attended per year

EXPECTED OUTCOMES

Expected Impact or Result	Indicators	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations[2]
OUTCOME # 1: Renewable energy solutions are introduced for the hinterland											
Electricity generation in the three townships is diversified	Indicator #1: Share of electricity produced with Solar PV technology is introduced in the three townships	Percentage	0%	2017	0	0	15%	27%	27%	Register of local utilities	Cumulative installed capacity of solar PV farm divided by total energy capacity in Bartica, Lethem and Mahdia. Linked to the DC of productivity and innovation

[3] Unserved demand calculated from three types of problems in the Kingston – Sofia transmission line: (i) emergency maintenance; (ii) trips/shutdowns in the DBIS system; and (iii) line losses (MVA difference in power transfer).

Expected Impact or Result	Indicators	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations[2]
Improvement of women's economic empowerment through the benefits of productive initiatives	Indicator #2: Women beneficiaries of economic empowerment initiatives	Number	0	2018	0	100	0	100	200	Productive projects matrix with the participants registry	An estimate of women beneficiaries was done based on the gender analysis elaborates for the preparation of this operation. Linked to the CCT of Gender Equality and Diversity (GD).
OUTCOME # 2: Reinforced transmission infrastructure in the DBIS system is in operation											
Reduction of Controlled and Monitored electricity service outages	Indicator #3 – Controlled and monitored electricity service outages	number per year	6	2017	6	6	4	1	1	Report from GPL	Number of outages deriving from the L5 transmission line between Kington - Sophia
Decrease in voltage fluctuations	Indicator #4 – % of Voltage variation	%	5%	2017	5%	5%	1.06%	1.06%	1.06%	Report from GPL	SCADA systems reports on systems voltage fluctuations. Overall 1.06% average of voltage variation
OUTCOME # 3: Strengthened Oil and Gas Sector Framework											
Approval of Regulatory framework for the O&G sector	Indicator #6 – Framework	Number	0	2017	0	0	1	0	1	Approved by the Ministry of	

Expected Impact or Result	Indicators	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations[2]
										the Presidency	
Enforcement of the Production Sharing Agreement (PSA)	Indicator #7 – Procedures for PSA	Number	0	2017	0	0	0	1	1	Report prepared by the Department of Energy (DE) and Independent Audit reports	Including PSA set of protocols and mechanisms

OUTPUTS

Outputs	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of project	Means of verification	Observations[2]
Component # 1 – Renewable energy solutions for the hinterland										
Output #1 – Installed capacity of solar PV farms	MW	0	2018	0	1.5	3.15	0	3.15	Report from local utility company based on manufacturer's data sheet and plants commissioning	

Outputs	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of project	Means of verification	Observations[2]
Output #2 – Pilot Project of Smart metering and digitalization implemented	Number	0	2018	0	0	0	1	1	Project completed, and report finalized	Consumers consumption and outages is remotely monitor by the utility providing fast reaction to line trips and restoring service as well as avowing commercial losses due to meter manipulation. Linked to the DC of CC and Productivity and Innovation (PI).
Output #3 – Women's economic empowerment programs focused on productive use of electricity implemented.	Number	0	2018	0	0	1	1	2	Selected Community Centers connected to the grid and using electricity in productive equipment.	Activity includes capacity building in the use of electricity and in the related productive equipment as well as the development of business skills Linked to the CCT of GD
Component # 2 – Reinforcement of transmission infrastructure										
Output #4 – Transmission line from Kingston to Sophia constructed	Number	0	2018	0	1	0	0	1	Transmission line constructed and in operation	Transmission line will have approximately 5 kilometers
Output #5 – Reinforcement of New Sophia sub-station	Number	0	2018	0	1	0	0	1	New Sophia substation reinforced and in operation	Reinforcement of New Sophia station with reactive power compensation equipment.

Outputs	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of project	Means of verification	Observations[2]
										Linked to the DC of CC and PI.
Output #6 – Drafting of technical standards for storing, disposition & treatment of equipment	Number	0	2018	1	0	0	0	1	New GPL standard discussed at GPL's Board	Technical norm will improve GPL's environmental performance for hazardous waste disposal. Linked to the DC of PI
Output #7 – Development of staff diversity diagnostic and gender inclusion policy proposal for GPL	Number	0	2018	1	0	0	0	1	Report discussed at GPL's Board	Pro-Gender and Gender Tracking tools and targets are proposed. Linked to the CCT of GD
Component # 3 – Institutional Strengthening and Governance of the Department of Energy										
Output #8 – A Regulatory framework for the O&G sector is proposed.	Number	0	2018	0	1	0	0	1	Report prepared by the DE	Report will include institutional arrangements to regulate and manage the O&G sector.
Output #9 – PSA contract administration procedures created.	Number	0	2018	0	1	0	0	1	Final report prepared by the DE	A tool for enabling the proper administration of the PSA contract, including a comprehensive set of clear and detailed processes maps, responsibilities and

Outputs	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of project	Means of verification	Observations[2]
										requirements, cost accounting rules and control mechanisms
Output #10 – O&G Management Strengthening program executed.	Number	0	2018	0	1	0	0	1	Recruiting docs provided by the DE	This include a team of advisors with deep industry experience, including issues, legal matters, tax policy, economic modelling, geology, and other issues. Linked to the DC of PI
Output #11 – DE Staff teams trained.	Number	0	2018	0	2	2	0	4	Training certificate list provided by the DE	Number of teams created. Linked to the DC of PI

FIDUCIARY ARRANGEMENTS

Country:	Guyana
Project Nº:	GY-L1066
Name:	Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE)
Executing Agencies:	Guyana Power and Light Inc. (GPL) and Guyana Energy Agency (GEA)

I. EXECUTIVE SUMMARY

1.1 The general objective of the project is to support Guyana's evolving energy sector. The total estimated budget is $25,110,000, of which $21,160,000 will be financed by the IDB from the OC/COC resources and $3,950,000 with counterpart resources.

1.2 Components 1 and 3 will be executed by the Guyana Energy Agency (GEA). Component 2 will be executed by the Guyana Power and Light Inc. (GPL). GPL has experience executing Bank-financed Loans – 3238/OC-GY; 3239/BL-GY and 2567/BL-GY (closed). GEA has no experience executing Bank-financed operations. The fiduciary aspects for the present Loan are analyzed accordingly.

1.3 The Institutional Capacity Analysis Platform (PACI) methodology was conducted in June 2018 to assess GPL and GEA using. The assessment and the previous experiences of the Bank in working with GPL and the findings from the PACI (for GPL and GEA) conclude that the fiduciary risk for all components is considered medium. For the 2 agencies, a re-evaluation of the fiduciary risks will be conducted during execution as part of the regular fiduciary supervision to ensure efficient support to project execution.

1.4 **Fiduciary context of the country.** An Integrated Fiduciary Assessment (IFA) was conducted in 2012/2013. Conclusions indicate that Guyana's overall budget planning, accounting and reporting systems worked well; that the financial management accounting system used by the Government (IFMAS which has recently been upgraded to IFMIS) operated consistently and reliably. It provided updated information about all elements of budget execution and budget planning, and reporting was being done in accordance with the cash basis of accounting and its standards.

1.5 The Public Financial Management (PFM) indicator scores from the 2012/2013, continued to show encouraging results with slight improvements in areas such as Strengthened External Audit Function, Budget Preparation Process, Revenue Administration etc. Notwithstanding, the IFA highlighted that attention needed to be paid to the internal control environment, Internal Audit, Payroll Control and Procurement Control among others. To date, confirmations from the Borrower on the results of the 2012/2013 IFA and 2007 PEFA remain outstanding. The Bank's

Guide for the Use of Country Systems (GUS) Assessment was also conducted in 2013; this also has not been accepted by the Government.

1.6 The Audit Office of Guyana (AOG) is currently eligible to audit all Bank-financed operations. An updated GUS assessment on External Control was undertaken in 2018 and an assessment using the Supreme Audit Institutions' Performance Measurement Framework methodology. Both assessments concluded a sound performance on the part of the AOG. For this operation, the Bank is recommending: (i) the use of the national accounting system, and or any other accounting system acceptable to the Bank, for the financial administration of the project; and (ii) for external control, a firm of independent public accountants acceptable to the Bank or the Auditor General of Guyana (AGG).

1.7 Regarding procurement, assessments of the national system (MAPS) were performed in 2007 and 2013. The results are not yet endorsed by the Government of Guyana (GoG). Guyana has a dedicated legislation that governs public procurement, namely the *Procurement Act of 2003* and its associated regulations. The National Procurement and Tender Administration Board (NPTAB) was established in the same Procurement Act of 2003. It is responsible for exercising jurisdiction over the country's tender processes, reporting to the Ministry of Finance with policy making, advisory oversight, and monitoring and information functions. Per the same Act of 2003, the NPTAB is a temporary entity while awaiting the creation of the Public Procurement Commission (PPC). The PPC is a Constitutional body with responsibility for overseeing that the purchasing of goods and services and the execution of works by public institutions is carried out in a fair, equitable, transparent, and competitive manner; its members are appointed by the President and approved by the National Assembly.

1.8 The country is in the process of strengthening its centralized website for publication of opportunities for requests for proposals. Additionally, efforts are being deployed to strengthen capacity to retain records of procurement processes, registry for protests, suspension and debarment and contractors' performance. Statistics on public procurement awards is also an area of focus for GoG.

1.9 The Country Procurement System has not been approved yet and hence will not be used under the present Loan. Consequently, the Bank requires the use of its Procurement Policies GN-2349-9 and GN-2350-9 for all projects approved starting April 19, 2011. In the meantime, the Bank will bring adequate support to the procurement function to ensure that procurement activities enable the prompt execution of the operation in accordance with the Bank's policy.

II. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY (EA)

2.1. The GEA will be responsible for the execution of Component 1 and 3 of the Loan and for carrying out all related fiduciary activities pertaining to the components. GEA has been established as a corporate body whose mandate is to monitor, oversee the provision of all policy support, technical planning, and the develop operating codes and regulations for the energy sector. The structure consists of a Board of Directors, Chief Executive Officer and five divisions including a Finance Division.

2.2. GEA uses IFMIS for high level financial management related activities and SAGE Accounting Software for detailed financial management and reporting of the agency. It is recommended that this program use IFMIS along with SAGE Accounting Software for the financial management of the program. To strengthen the execution capacity of GEA, a dedicated Financial Officer be assigned to discharge the expected fiduciary duties for the duration of the Loan (see special contractual condition prior to the first disbursement (iii) of the Project Summary).

2.3. GPL is the state electricity utility company with the responsibility for the execution of Component 2 of the Loan and for carrying out all fiduciary activities related to the Component. The current structure of the Project Execution Unit in GPL for Operation GY-L1041, needs to be complemented with support fiduciary staff – 1 financial assistant and 1 procurement assistant; to mitigate the increased work load of this operation (see special contractual condition prior to first disbursement (iv) of the Project Summary).

2.4. GPL as a budget agency, uses the Oracle Accounting Software Package system, used by major state-owned entities such as the Guyana Water Inc. and The Guyana Sugar Corporation. It is recommended that this program uses the software for the financial management and accounting of the program.

2.5. It is foreseen that a team of personnel for both GEA and GPL with the requisite skills be contracted, as per the PACI findings and recommendations. The current staff and structure of GPL's PCU for 3238/OC-GY; 3239/BL-GY, needs to be complemented to ensure adequate and effective coverage of fiduciary tasks under both Loan programs.

2.6. Component 2 will be executed by the current GPL PCU with support being provided in the overall execution of the operation, inclusive of the fiduciary policies and procedures. GEA, as a new PCU, will require initial support and training prior to the commencement of any procurement activity to ensure it can execute its components per Bank procurement policies.

2.7. It is necessary to have staff with a high degree of technical expertise, largely in the areas of contract management and procurement (as warranted by Components 1 & 2) and financial management. Regarding procurement, it is recommended that both PCUs receive training on procurement planning and contract management.

2.8. The Internal Control Systems of GPL were assessed as being strong (PACI) given its present execution of the aforementioned loans. GEA also received a positive assessment due to a highly organized leadership structure that is meticulous about adherence to established processes. The Project Operations Manual (POM), which must include a chapter on contract management will be useful as a guide and is recommended as a condition prior.

III. FIDUCIARY RISK EVALUATION AND MITIGATION ACTIONS

3.1. The Project Team in consultation with GEA, GPL and other stakeholders developed a Risk Analysis Matrix included in the package of project documents to be approved for the present Loan Agreement. The Bank, GEA and GPL will undertake joint reviews of the Matrix on a yearly basis and introduce additional mitigating actions because of such reviews and as deemed necessary.

3.2. Taking into consideration the current GPL and GEA organizational structures, the capacity of the existing accounting staff to undertake the financial management for the new operation, the PACI Assessment and the experience of the Bank with the previous loans (executed GPL), the financial management risk has been classified as medium. The recruitment of a financial assistant for GPL will mitigate the risk; and a financial officer for GEA to ensure adequate segregation of duties coupled with the provision of training on Bank policies and procedures should mitigate the existing risk and strengthen the control environment (see special contractual conditions prior to first disbursement (iii) and (iv) of the Project Summary).

3.3. The current organizational structure of GEA and absence of experience with Bank-financed operations presents a main fiduciary risk, categorized as medium. The insufficient financial and administrative knowledge of Bank policies is mitigated through: (i) the design of a POM which seeks to provide adequate guidance and mitigation measures to discharge all fiduciary duties in accordance with the Bank's rules and procedures of existing and new fiduciary and procurement teams; (ii) support to streamline the timely execution of all fiduciary activities (financial management and procurement); and (iii) providing technical supervision and training of financial management and procurement staff who will be responsible for fiduciary activities under the loan.

3.4. As indicated in the PACI, GPL procurement officer is presently responsible for the procurement activities under the ongoing Bank-financed operation. Given that this same PCU will be executing this Loan, recruiting a procurement assistant is a necessary additional mitigation measure to avoid potential bottlenecks in the execution of the procurement activities under the Bank-financed Loans (see special contractual condition prior to first disbursement (iv) of the Project Summary). As expected, once the present Loan enters in execution, the Procurement Officer overseeing the existing loan operation would be responsible for two critical energy projects above US$7 million.This adapted structure should be reflected and catered for in the operation's manual as approved under the conditions of Section 4.2 below.

IV. FINANCIAL MANAGEMENT

4.1 **Financial Statements and Reports, audited.** (i) Annual financial statements of the project submitted by GEA and GPL, audited by the AOG are to be submitted to the Bank within 120 days at the end of each fiscal year, beginning with the fiscal year in which the first project expenditures are incurred; and (ii) a final financial audit report of the program is to be submitted by GEA and GPL within 120 days after the date of the last disbursement.

4.2 **Programming and Budget.** The Borrower has committed to allocate, for each fiscal year of project execution, adequate fiscal space to guarantee the unfettered execution of the project; as determined by normal operative instruments such as the Annual Operating Plan and the PP.

4.3 **Accounting and Information Systems.** It is expected that Oracle accounting system will facilitate the recording and classification of all financial transactions by GPL and SAGE Accounting Software, will be used by GEA.

4.4 **Disbursements and Cash Flow.** The Bank will supervise the creation of an Advance of Funds, using the Advance of Funds methodology. Whenever

resources from the financing are requested through an Advance of Funds, it will be deposited into a Special Account (one for each EA), denominated in US$, established exclusively for the project at the Central Bank of Guyana. Required resources from this Special Account will be transferred to another bank account, denominated in Guyana Dollars to be utilized for payment of expenditures in local currency.

4.5 The project will provide adequate justification of the existing Advance of Funds balance, whenever 80% of said balance has been spent. Advances will normally cover a period not exceeding 180 days and no less than 90 days. To request disbursements from the Bank, the EA will present the following forms and supporting documents:

Type of Disbursement	Mandatory Forms	Optional forms/ information that can be requested by the IDB
Advance	Disbursement Request/ Financial Plan	List of Commitments Physical/Financial Progress Reports
Reimbursements of Payments Made	Disbursement Request/ Project Execution Status/ Statement of Expenses	List of Commitments Physical/Financial Progress Reports
Direct Payment to Supplier	Disbursement Request/ Statement of Expenses/Acceptable Supporting Documentation	List of Commitments Physical/Financial Progress Reports

4.6 Generally, supporting documentation for Justification of Advances and Reimbursement of Payments Made will be kept at the office of the EA. Disbursements' supporting documents may be reviewed by the Bank on an ex-post basis.

4.7 **Type of exchange rate to be used by EA.** The type of funds to be used are established in the following manner: (i) reimbursement of actual expenses: the effective rate of exchange on the date of payment of each expenditure, as published by the Central Bank of Guyana; and (ii) reporting on accounts (Advance of Funds): the effective rate of exchange used in the conversion of the currency of the operation to the local currency. In cases of reimbursement of a guarantee of letter of credit, the equivalent of the currency of the operation will be fixed in accordance with the amount effectively disbursed by the IDB.

4.8 **Internal Control and Internal Audit.** The management of the project will assume the responsibility for designing and implementing a sound system of internal controls for the project.

4.9 **External Control and Reports.** For each fiscal year during project execution, GEA and GPL will be responsible to produce annual Audited Financial Reports of the Program and one final Audited Financial Report at the end of the Program, audited by the AGG.

4.10 **Financial Supervision Plan.** It will be developed based on the initial and subsequent risk assessments carried out for the project. Inspection visits will be performed based on the risk assessed, covering the following: (i) review of the bank reconciliation and supporting documentation for Advances and Justifications;

(ii) compliance with procedures; (iii) review of compliance with the lending criteria; and (iv) ex-post review of disbursements.

4.11 **Execution Mechanism.** GPL will be the EA with responsibility for the financial administration of Component 2, and GEA will be the EA with responsibility for the financial administration of Components 1 and 3. GEA's and GPL's responsibilities will include: (i) preparation of required project reports; (ii) monitoring product, output and outcomes achievement using established indicators; (iii) preparation and submission of disbursement requests to the Bank and justification of expenses; (iv) preparation of financial reports; (v) ensure compliance with all aspects of the Operating Manual; and (vi) maintain adequate documentation filing system.

V. REQUIREMENTS AND AGREEMENTS FOR EXECUTION OF PROCUREMENT

5.1 **Procurement Execution.** Procurement activities for the proposed project will be carried out in accordance with the Policies for the Procurement of Works and Goods Financed by the Inter-American Development Bank (IDB) (GN-2349-9), of March 2011, and the Policies for the Selection and Contracting of Consultants Financed by the IDB (GN-2350-9), of March 2011. They will also be subject to the provisions established in the Loan Contract. In addition, for all projects, the Borrower is required to prepare and submit to the Bank, a draft General Procurement Notice as well as an initial Procurement Plan (PP) which will be updated in accordance with the applicable sections of the Policies and the Loan Agreement.

5.2 **Exception to Bank Procurement Policies.** The operation does not foresee any exception to the Bank's procurement policies.

5.3 **Procurement of Goods, Works, and Non-Consulting Services.** In accordance with Section 1.2 of GN-2349-9, "the responsibility for the implementation of the project, and therefore for the award and administration of contracts under the project, rests with the Borrower". In accordance with the findings of the PACI for this Loan and given the level of risk as identified above, all procurement activities will be carried out under ex-ante supervision.

5.4 **Procurement of Consulting Services.** In accordance with Section 1.4 of GN-2350-9, "The Borrower is responsible for preparing and implementing the project, and therefore for selecting the consultant, and awarding and subsequently administering the contract." As such, the Borrower is responsible for preparing and implementing the scheduled activities, and therefore for preparing the TORs, short lists, selecting the consultants, awarding the contract, management, and close-out. In accordance with the findings of the PACI for this Loan and given the level of risk as identified above, all procurement activities will be carried out under ex-ante supervision.

5.5 **Sole Source Selection and/or Direct Contracting.** No sole sourcing activities foreseen.

5.6 **Selection of Individual Consultants.** Individual consultants will be selected and recruited in accordance with Section V of GN-2350-9.

5.7 **Recurring Expenses.** Include payment of utilities and other office operating expenses of the Executing Unit, if any.

5.8 **Retroactive Financing.** The Borrower has requested retroactive financing for procurement of consulting services. The Bank may finance retroactively eligible expenses incurred by the Borrower prior to the date of loan approval up to the amount of US$3.17 million (15% of the proposed Bank financing), provided that all the requirements are substantially similar to those set out in the loan agreement requirements. The expenses may include feasibility studies in accordance with Section 1.12 of GN-2350-9. These expenses must have been incurred on or after 31 of July 2018 (approval date of the Project Profile), and under no circumstances shall expenditures incurred more than 18 months prior to the loan approval date be included.

5.9 **Domestic Preference.** Domestic Preference is not requested under this Loan.

5.10 **Country Threshold.** Table (US$ thousands) www.iadb.org/procurement

International Competitive Bidding Threshold*			National Competitive Bidding Range ** (complex works and non-common goods)			Consulting Services
Works	**Goods**		**Works**	**Goods**		**International Short List**
>1,000,000	>100,000		<1,000,000	<100,000		> 100,000

* When procuring simple works and common goods and their amount is under the International Competitive Bidding thresholds, Shopping may be used.

** When procuring non-complex works or common goods with amounts under the NCB range, Shopping shall be used.

5.11 **Procurement Plan (PP).** The PP for the operation covering the first 18 months of project execution can be accessed through the following electronic link. The on-line Electronic Procurement Execution System (known by its Spanish acronym as SEPA) will be used for the publication and updates of the PP during project execution. It is expected that the EA will use the SEPA program for management of its procurement activities. The PP will be updated annually or whenever necessary, or as required by the Bank (www.iadb.org/procurement;http://www.iniciativasepa.org/bid/sitio/guyana/index-_ing.htm). The initial PP for the operation lists all procurement activities foreseen under this operation. The table below includes the list of the main procurement activities for this Loan.

5.12 GEA and assigned staff of its PCU will be receiving preliminary and secondary training from the Bank on Procurement Policies, procedures, and use of procurement toolkit.

Table 2. Main Procurement Activities

Description	Amount US$	Procurement methodology	Ex-Ante / Ex-post	% financed by IDB	Schedule for procurement	
					Start	End
Component 1 and 3:	**$9,828,000**					
Works	**$8,390,000**					
Installation of three solar PV mini-grid systems in the townships of Bartica, Lethem and Mahdia including storage capacity (3 LOTS)	$8,250,000	ICB	Ex-Ante	100	Mon 3/25/19	Mon 9/13/21
Component 2:	**$10,422,000**					
Works	**$9,750,000**					
Reinforcements of the DBIS with the rehabilitation of 5 kilometers of associated transmission line and substations upgrades	$2,550,000	ICB	Ex-Ante	100	Mon 4/15/19	Fri 1/22/21
Procurement and installation of reactive power compensation equipment in the New Sophia substation	$7,200,000 (a)	ICB	Ex-Ante	45%	Mon 4/15/19	Thu 1/14/21

(a) Procurement will include the US$ 3,950,000 as voluntary local contribution from GPL (see procurement plan)

5.13 **Supervision.** Under the present loan, procurement activities (i) are not expected to be complex in nature; (ii) will be subject to ex-ante review given the level of risk as identified above; (iii) will be explicitly listed in the approved and updated PP in SEPA; (iv) will be launched once all technical specifications and/or terms of reference are validated by the Bank's Sector Specialist; and (v) will be documented in accordance with the general filing guidelines that will be provided as part of the inception training of the fiduciary staff and in accordance with the applicable Bank Policies.

5.14 All modifications to the present arrangement are subject to a prior written agreement between the respective EA and the Bank. The evaluation of capacity and the level of risk may vary during the project's execution depending on the findings of the regular supervision activities that will be conducted during the project's lifespan. As such, supervision modalities may vary as capacity increases.

5.15 **Records and Files.** All records and files will be maintained by the respective EA, according to accepted best practices and to the general guidelines that will be provided by the Bank at the initial training of the fiduciary staff. All records must be kept for seven (7) years beyond the end of the operation's execution period. It is also recommended that the EA's develop electronic filing to avoid losing all paper files.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/18

Guyana. Loan ____/BL-GY to the Co-operative Republic of Guyana
Energy Matrix Diversification and Institutional Strengthening
of the Department of Energy (EMISDE)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Co-operative Republic of Guyana, as borrower, for the purpose of granting it a financing to cooperate in the execution of the program "Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE)". Such financing will be chargeable to the Bank's Ordinary Capital (OC) resources in the following manner: (i) up to the amount of US$10,580,000, subject to concessional financial terms and conditions ("Concessional OC"); and (ii) up to the amount of US$10,580,000, subject to financial terms and conditions applicable to loan operations financed from the Bank's regular program of OC resources ("Regular OC"), as indicated in the Project Summary of the Loan Proposal, and subject to the Special Contractual Conditions of said Project Summary.

(Adopted on _____ 2018)

LEG/SGO/CCB/EZSHARE-281104290-6607
GY-L1066