

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**GUYANA**

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

**(GY-L1066)**

**PROJECT PROFILE**

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, Rodrigo Aragón, Augusto Bonzi, and Cecilia Seminario (INE/ENE); Emily Brearley (CCB/CGY); Lenin H. Balza (INE/INE); Luca Marini (VPS/ESG); Leticia Ramjag (CCB/CGY); Ivan Gaviria and Paula Louis-Grant (FMP/CGY); and Louis-Francois Chretien (LEG/SGO).

Under the Access to Information Policy, this document is subject to Public Disclosure.

**PROJECT PROFILE**  
**REPUBLIC OF GUYANA**

**I. BASIC DATA**

<b>Project Name:</b>	Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE)	
<b>Project Number:</b>	GY-L1066	
<b>Project Team:</b>	Jaime Sologuren (ENE/CGY) Team Leader; Gerard Alleng (CSD/CCS) Co-Team Leader; Leopoldo Montanez; Javier Cuervo, Rodrigo Aragón, Augusto Bonzi, Cecilia Seminario (INE/ENE); Emily Brearley (CCB/CGY); Lenin H. Balza (INE/INE); Luca Marini (VPS/ESG); Leticia Ramjag (CCB/CGY); Ivan Gaviria and Paula Louis-Grant (FMP/CGY); and Louis-Francois Chretien (LEG/SGO)	
<b>Borrower:</b>	Cooperative Republic of Guyana (CRG)	
<b>Executing Agencies:</b>	Guyana Power and Light Inc. (GPL), Guyana Energy Agency (GEA) and the Ministry of the Presidency (MoP)	
<b>Financial Plan:</b>	IDB OC:	US\$ 10,580,000
	IDB COC:	US\$ 10,580,000
	Total:	US\$ 21,160,000
<b>Safeguards:</b>	Policies triggered:	OP-102; OP-704; OP-710; OP-761; OP-765; OP-703 (B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.9, B. 10, B.11, B.17)
	Classification:	B

**II. GENERAL JUSTIFICATION AND OBJECTIVES**

- 2.1 Guyana has an important opportunity to convert its abundance of natural resources into sustainable energy. During the past decade, the energy sector has been strategic, and the country has invested in infrastructure and studies that have contributed to its development.<sup>1</sup> The current Green State Development Strategy (GSDS)<sup>2</sup>, presents an energy sector that is transitioning to cleaner and greener solutions, a more diversified electricity generation mix and an optimal utilization of indigenous natural resources.<sup>3</sup>
- 2.2 The Inter-American Development Bank (IDB) Group Country Strategy (2017-2021) emphasizes the need for improving capacities for planning and governance to address the underlying constraints to growth with critical and transformational infrastructure needed to respond to the GSDS.

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<sup>1</sup> For IDB support refer to ¶3.2.

<sup>2</sup> The strategy aims to improve power supply reliability, reduce electricity costs, increase energy security, and utilize local renewable resources while diversifying the energy mix. [Framework of the Guyana GSDS and Financing Mechanisms](#).

<sup>3</sup> Guyana has an installed capacity of 182 Mega Watts (MW) of which, 83% is generated with imported fossil fuels.

- 2.3 Transitioning towards a cleaner energy mix requires critical infrastructure investments to respond to growing demand, and improved capacities to address the challenges of the new scenario where Guyana becomes a regional oil and gas producer.<sup>4</sup>
- 2.4 Over the last years, the Government of Guyana (GoG) has financed projects to increase electricity access with renewables in rural areas, mainly using standalone Photovoltaic (PV) systems.<sup>5</sup> Recently, the Guyana Energy Agency (GEA), in coordination with the Hinterland Electrification Company (HECI), is developing mini-hydro and micro-solar PV grid systems, partly in collaboration with the IDB.<sup>6</sup>
- 2.5 An updated electricity expansion plan for 2018-2035, is in preparation to incorporate the use of the recently discovered associated gas<sup>7</sup> for power generation and the deployment of renewable energy resources.
- 2.6 The new oil and gas discovery has made Guyana to review the power generation plan and revisit its existing energy sector structure.<sup>8</sup> Guyana is in urgent need to craft a regulatory and institutional framework and to build human capacity to manage a new energy sector. Studies are ongoing<sup>9</sup> and the GoG is working on the overall framework.<sup>10</sup>
- 2.7 **Problems identified:**
- 2.8 **Electricity Access in the Hinterland<sup>11</sup> Extends to 30%.** To date, the operation of small off-grids in Guyana relies on imported diesel for power generation, which is costly and negatively affects the environment. Consequently, the quality of the service is poor, unreliable and expensive. This, together with high costs of electricity (up to US\$0.50/Kilo-Watt-hour-kWh), has hindered the development of the off-grid rural communities, limited productive activities and the spread of information and communication infrastructure.<sup>12</sup>
- 2.9 **The Demerara-Berbice Interconnected System (DBIS).** This transmission system is the largest interconnected system<sup>13</sup> in Guyana, and is operated by the

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<sup>4</sup> Estimated reserves of 3.2 billion of barrels of oil equivalent. [Guyana. Project Overview. Exxon Mobile.](#)

<sup>5</sup> Guyana REDD+ Investment Fund (GRIF) financed the Hinterland Electrification Program (HEP) 2011-2014: 11,000 of 65-watt PV solar home systems were installed. In 2015 the GoG financed 6,000 home systems and 200 communities benefited from the HEP.

<sup>6</sup> GRT/FM-13897-GY supports a run of the river mini-hydro power plant where technical studies are ongoing (about 150 Kilo-Watt-KW). A geo-technical study is ongoing to rehabilitate another 800 KW mini-hydro power plant and designs are developed for four solar PV mini-grids.

<sup>7</sup> GRT/FM-13897-GY is currently supporting the development of the updated expansion study.

<sup>8</sup> A donor coordination group in the sector is established. IDB in coordination with the embassies of: Canada, United Kingdom, European Union, Mexico, Brazil and multilaterals: World Bank, CARICOM, and United Nation agencies. IDB country team also coordinates bilateral cooperation with: GIZ and JICA.

<sup>9</sup> ATN/OC-16533-GY and ATN/OC-16532-GY are currently supporting gas to power and gas price analysis studies.

<sup>10</sup> Although not yet published in the official Gazette, in February 2018, President Granger announced the creation of a new Department of Energy that will be responsible for oil and gas matters.

<sup>11</sup> The term applies to the rural areas in Guyana.

<sup>12</sup> Tariffs in the region (US cents/kWh): Suriname (0.05); Trinidad and Tobago (0.06); Jamaica (0.24); and Barbados (0.26).

<sup>13</sup> DBIS is made up 276 kilometers of 69 Kilo-Volts transmission lines, interconnecting 15 substations, in a radial structure along the coastal area.

state-owned company, Guyana Power and Light Inc. (GPL). The actual configuration of the DBIS transmission network causes frequent power outages<sup>14</sup> that negatively affect households and industries. This low reliability of power resulted in many companies leaving Guyana and others experienced incremental costs for investment in self-generation.<sup>15</sup> The high dependency on imported fossil fuels, together with high losses in the transmission and distribution system<sup>16</sup> has led to an average tariff of US\$0.30/kWh.<sup>17</sup> High tariffs and frequent outages have constrained growth, the development of value-added sectors and ultimately hold back a better quality of life.

- 2.10 Electricity losses in the distribution systems are currently addressed through the operation 3238/OC-GY and 3239/BL-GY (Power Utility Upgrade Program). The challenges faced in the transmission system have received limited attention and some segments need to be upgraded and expanded to respond to an increased electricity demand.<sup>18</sup>
- 2.11 **Discoveries of Oil and Gas (2017).** Guyana is now among the 40 largest reserve-holders in the world.<sup>19</sup> Several economically viable oil deposits, with associated natural gas, were discovered within the Stabroek block.<sup>20</sup> It is estimated that the reserves stand at around 3.2 billion barrels of oil equivalent<sup>21</sup> and commercial production is planned by the early 2020s, at a level of 120,000 barrels of oil equivalent per day and an initial value of about US\$3 billion per year (approximately 85% of Guyana's current Gross Domestic Product).<sup>22</sup>
- 2.12 Guyana has never been an oil and gas producer and so, it lacks the regulatory and institutional framework to manage the new sector, and the necessary arrangements to regulate the participation of potential private investors. Guyana needs to urgently develop the regulatory and institutional architecture that will allow for a proper and careful development of its hydrocarbon sector.
- 2.13 The objective of the project is to support Guyana's evolving energy sector by: (i) investing in sustainable/cleaner energy solutions to diversify the energy matrix in the Hinterland; (ii) investing in reinforcement of transmission infrastructure to improve reliability and energy security of the DBIS; and (iii) developing and strengthening the regulatory framework, institutional capacity, and governance of the sector.

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<sup>14</sup> The System Average Interruption Duration Index stands at 125.8 hours per outage a customer experienced during the year (2016); and the System Average Interruption Frequency Index stands at 118 outages per customer during the year (2016). Low electricity reliability is also translated into 25 shutdowns of the entire system in 2017 caused partially by transmission failures (30-40%).

<sup>15</sup> About 70 MW of self-generation is not connected to the grid, of which 85% is using imported fossil fuels.

<sup>16</sup> Transmission and distribution losses were 29.6% in 2017.

<sup>17</sup> Electricity tariff averages US\$0.23/kWh for residential, going up to US\$0.35/kWh for the commercial sector.

<sup>18</sup> By 2035, electricity demand is expected to increase from 722 Giga Watt hour (GWh) to 1,987 GWh, which represent an additional capacity of 300 MW.

<sup>19</sup> [Central Intelligence Agency.](#)

<sup>20</sup> Concession for Esso Exploration and Production Guyana Ltd., a consortium of companies led by ExxonMobil, Hess and China National Offshore Oil Corporation. Covers 26,800 kilometers<sup>2</sup> off-shore.

<sup>21</sup> <http://corporate.exxonmobil.com/en/company/worldwide-operations/locations/guyana/about-us/project-overview>.

<sup>22</sup> Fields have shown around 30-50 MMcf per day of natural gas available for power generation.

- 2.14 **Component 1. Renewable Energy (RE) Solutions for the Hinterland (US\$9 million):** This component will finance the installation of three PV tied mini-grid systems<sup>23</sup> in the townships of Bartica, Mahdia and Lethem<sup>24</sup>, including two Mega-Watt-hour storage capacity to meet the increasing demand.<sup>25</sup>
- 2.15 **Component 2. Reinforcement of Transmission Infrastructure (US\$6 million):** This component will finance reinforcements of the DBIS with upgrade of the Sophia substation; and rehabilitation of about 5 kilometers of associated transmission line<sup>26</sup> These investments will strengthen the reliability of the transmission system, reduce technical losses and facilitate the development of future generation (natural gas or RE).
- 2.16 **Component 3. Institutional Strengthening and Governance of the Department of Energy (US\$5 million):**<sup>27</sup> This component will finance activities geared towards building the capacity of the GoG to manage the oil & gas sector: (i) design and development of the new Department of Energy, including architecture, governance, policy framework, and flow of key processes needed to support the operation of such structure; (ii) high level training and coaching of government staff, knowledge transfer and workforce development. These activities aim to support the GoG's effort to build a robust framework for oil and gas governance, intensify transparency and accountability, and increase the technical capacity of the government in the sector.
- 2.17 **Project Management and Other Costs (US\$1.16 million).** This component will finance management costs, audits and monitoring and evaluation of the project.
- 2.18 **Expected Results.** For Component I, the project is expected to: (i) increase installed RE capacity; (ii) increase the availability of the electricity service; and (iii) reduce diesel consumption for power generation. For Component 2, the project will contribute to reduce: (i) frequency of outages; and (ii) level of electricity losses in the transmission system. For Component 3, the project will contribute to improve institutional capacities and the regulatory framework for optimal management of the oil and gas sector.
- 2.19 The beneficiaries for component 1 are estimated to be 24,000 residents in the three townships. Component 2 will benefit the overall GPL customers; estimated at around 180,000 customers.
- 2.20 **Strategic Alignment.** The project is aligned with the IDB Group Country Strategy with the Cooperative Republic of Guyana 2017–2021 (GN-2905). The project supports: (i) establishing a modern national strategy and planning framework, (ii) strengthening fiscal policies and the framework managing natural resource revenues; and (iii) delivering critical infrastructure to facilitate human

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<sup>23</sup> This component supports the goals of GRT/FM-13897-GY (Sustainable Energy Program for Guyana) on mobilizing resources for renewables.

<sup>24</sup> Further solar PV rural access to be supported with trainings to local groups comprising indigenous people and activities will be gender balanced.

<sup>25</sup> GoG studies indicate: Bartica (1.5 MW), Mahdia (0.65 MW) and Lethem (1 MW).

<sup>26</sup> Conversations are ongoing for possible parallel financing from the Islamic Development Bank on additional projects prioritized by GPL.

<sup>27</sup> Preliminary Ministries/Agencies are: Department of Energy, Ministry of Public Infrastructure, and the Guyana Energy Agency.

and private sector development. These areas ensure continuity with existing portfolio commitments and respond to developing government priorities.

- 2.21 The project is consistent with the Energy Sector Framework (GN-2830-3) pillars: (i) energy access; (ii) energy sustainability; (iii) energy security; and (iv) energy governance. It is aligned with the Sustainable Infrastructure for Competitiveness and Inclusive Growth document (GN-2710-5) as it finances reliability and quality of electricity infrastructure. and with the Updated Institutional Strategy 2010-2020 (AB-3008) by improving productivity and innovation in rural areas. It contributes to the Corporate Results Framework 2016-2019 (GN-2727-4) in the following output indicators: (i) RE installed capacity; and (ii) kilometers of transmission lines reinforced or upgraded. The project contributes to climate change mitigation and environmental sustainability, gender equality and inclusion of indigenous people.

### III. TECHNICAL ISSUES AND SECTOR KNOWLEDGE

- 3.1 **Execution arrangements.** The Borrower is the Cooperative Republic of Guyana. The executing agencies are: GEA for Component 1, GPL for Component 2, and the MoP for Component 3. Each executing agency will have a dedicated Project Executing Unit. GPL is the state-owned, vertically integrated utility responsible for generation, transmission and distribution; and operates the DBIS. GEA oversees the provision of policy support, technical planning, and is responsible for fostering harmonization, increased monitoring and enforcement of regulations. GEA works in coordination with the HECI, responsible for planning, implementing, and operating projects via local off-grid utilities under its tuition. The execution period of the project is four (4) years.
- 3.2 **Sector knowledge.** The IDB has been actively supporting the GoG efforts to transform the sector through financing rural electrification, institutional strengthening, distribution network rehabilitation, and policy reforms: (i) distribution network rehabilitation and reduction of electricity losses (3238/OC-GY; 3239/BL-GY; 2567/BL-GY); (ii) technical assistance and development of RE (GRT/FM-13897-GY); and (iii) use of gas for power generation (ATN/OC-16533-GY); and governance, transparency and accountability of the oil and gas sector (ATN/OC-16532-GY).

### IV. ENVIRONMENTAL SAFEGUARDS AND FIDUCIARY SCREENING

- 4.1 In accordance with the IDB's Policy OP-703, this operation is classified as Category "B". It is anticipated that the project will likely cause local negative short-term environmental and social impacts for which effective mitigation measures will be developed. For the PV projects, main impacts will be associated with land acquisition and land clearing near to communities of indigenous people since these projects are planned to serve indigenous communities. The expansion of the substations and construction of the transmission line, impacts may be associated with the clearing and management of the right of way and possible land acquisition. The level of impacts associated

with these interventions will be established and assessed during the preparation phase and properly mitigated.

- 4.2 An environmental and social assessment with public consultations will be done and an environmental and social management plan for each proposed intervention will be prepared.
- 4.3 **Fiduciary Aspects.** GEA is providing support to the implementation of GRT/FM-13897-GY, and GPL is responsible for the execution of 3238/OC-GY, 3239/BL-GY and 2567/BL-GY. The fiduciary institutional assessment will be updated to define the fiduciary arrangements during execution. A capacity assessment will be conducted for GEA and GPL.
- 4.4 **Retroactive Financing.** The GoG requested retroactive financing for procurement of consulting services under Component 2. 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), if they satisfy requirements substantially like those set out in the loan agreement. 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 the approval date of this project profile, and no expenditures incurred more than 18 months prior to the loan approval date should be included.

## V. OTHER ISSUES

- 5.1 The following risks have been identified: (i) shift in GoG priorities following the developments in the oil and gas; and (ii) the creation of a new Department of Energy with a broader scope and structure that could impact the overall structure of the sector and modify the executing arrangements. Both risks have been identified as medium. Lastly, Guyana has a bi-annual concessional allocation ending in 2018, changes in GoG could affect the timing of the operation.

## VI. RESOURCES AND TIMETABLE

- 6.1 The POD distribution date is August 31<sup>st</sup>, 2018. The expected date for submission of the proposed project to the IDB Board of Executive Directors is November 14<sup>th</sup>, 2018. Project preparation costs are estimated at US\$84,375 from administrative resources (See Annex V). Staff time anticipated to prepare this project is estimated at 1.34 FTEs.

CONFIDENTIAL

<sup>1</sup> The information contained in this Annex is confidential and will not be disclosed. This is in accordance with the "Deliberative Information" exception referred to in paragraph 4.1 (g) of the Access to Information Policy (GN-1831-28) at the Inter-American Development Bank.



# Safeguard Policy Filter Report

## Operation Information

Operation		
<b>GY-L1066</b> Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE)		
Environmental and Social Impact Category	High Risk Rating	
B		
Country	Executing Agency	
GUYANA	GY-GPL - GUYANA POWER AND LIGHT, INC. - GY-GEA - Guyana Energy Agency (GEA) - GY-GEA - Guyana Energy Agency (GEA)	
Organizational Unit	IDB Sector/Subsector	
Country Office Guyana	ENERGY EFFICIENCY AND RENEWABLE ENERGY IN END USE	
Team Leader	ESG Primary Team Member	
JAIME SOLOGUREN BLANCO	LUCA MARINI	
Type of Operation	Original IDB Amount	% Disbursed
Loan Operation	\$21,160,000	0.000 %
Assessment Date	Author	
11 Jul 2018	AGAVIANO ESG Team Member	
Operation Cycle Stage	Completion Date	
ERM (Estimated)	24 May 2018	
QRR (Estimated)	31 Aug 2018	
Board Approval (Estimated)		
Safeguard Performance Rating		
Rationale		

## Safeguard Policy Items Identified

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

The Bank will make the relevant project documents available to the public.

### [B.1 Bank Policies \(Disaster Risk Management Policy– OP-704\)](#)



# Safeguard Policy Filter Report

The operation is in a geographical area exposed to [natural hazards \(Type 1 Disaster Risk Scenario\)](#). Climate change may increase the frequency and/or intensity of some hazards.

## B.2 Country Laws and Regulations

The operation is expected to be in compliance with laws and regulations of the country regarding specific women's rights, the environment, gender and indigenous peoples (including national obligations established under ratified multilateral environmental agreements).

## B.3 Screening and Classification

The operation (including [associated facilities](#)) is screened and classified according to its potential environmental impacts.

## B.5 Environmental Assessment Requirements

An environmental assessment is required.

## B.6 Consultations

Consultations with affected parties will be performed equitably and inclusively with the views of all stakeholders taken into account, including in particular: (a) equal participation by women and men, (b) socio-culturally appropriate participation of indigenous peoples and (c) mechanisms for equitable participation by vulnerable groups.

## B.7 Supervision and Compliance

The Bank is expected to monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.

## B.11. Pollution Prevention and Abatement

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

## B.17. Procurement

Suitable safeguard provisions for the procurement of goods and services in Bank financed operations may be incorporated into project-specific loan agreements, operating regulations and bidding documents, as appropriate, to ensure environmentally responsible procurement.

## Potential Safeguard Policy Items

### B.1 Bank Policies (Gender Equality Policy– OP-761)

The operation has the potential to affect negatively women or gender equality ([Negative gender impacts may include the following](#))

### B.1 Bank Policies (Indigenous People Policy– OP-765)

The operation has the potential to negatively affect indigenous people (also see [Indigenous Peoples Policy](#)).

### B.1 Bank Policies (Indigenous People Policy– OP-765)

The operation will offer opportunities for indigenous people

## B.4 Other Risk Factors



# Safeguard Policy Filter Report

The borrower/executing agency exhibits weak institutional capacity for managing environmental and social issues.

## B.4 Other Risk Factors

The operation may be of high risk due to controversial environmental and associated social issues or liabilities.

## B.9 Natural Habitats and Cultural Sites

The operation will result in the degradation or conversion of Natural Habitat or Critical Natural Habitat in the project area of influence.

## B.10. Hazardous Materials

The operation has the potential to impact the environment and occupational health and safety due to the production, procurement, use, and/or disposal of hazardous material, including organic and inorganic toxic substances, pesticides and persistent organic pollutants (POPs).

## Recommended Actions

Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.

## Additional Comments

[No additional comments]



# Safeguard Screening Form

## Operation Information

Operation		
<b>GY-L1066</b> Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE)		
Environmental and Social Impact Category	High Risk Rating	
<b>B</b>		
Country	Executing Agency	
<b>GUYANA</b>	GY-GPL - GUYANA POWER AND LIGHT, INC. - GY-GEA - Guyana Energy Agency (GEA) - GY-GEA - Guyana Energy Agency (GEA)	
Organizational Unit	IDB Sector/Subsector	
Country Office Guyana	ENERGY EFFICIENCY AND RENEWABLE ENERGY IN END USE	
Team Leader	ESG Primary Team Member	
<b>JAIME SOLOGUREN BLANCO</b>	<b>LUCA MARINI</b>	
Type of Operation	Original IDB Amount	% Disbursed
Loan Operation	\$21,160,000	0.000 %
Assessment Date	Author	
<b>11 Jul 2018</b>	AGAVIANO ESG Team Member	
Operation Cycle Stage	Completion Date	
ERM (Estimated)	24 May 2018	
QRR (Estimated)	31 Aug 2018	
Board Approval (Estimated)		
Safeguard Performance Rating		
Rationale		

## Operation Classification Summary

Overriden Rating	Overriden Justification
Comments	



# Safeguard Screening Form

## Conditions / Recommendations

Category "B" operations require an environmental analysis (see Environment Policy Guideline: Directive B.5 for Environmental Analysis requirements)

The Project Team must send to ESR the PP (or equivalent) containing the Environmental and Social Strategy (the requirements for an ESS are described in the Environment Policy Guideline: Directive B.3) as well as the Safeguard Policy Filter and Safeguard Screening Form Reports. These operations will normally require an environmental and/or social impact analysis, according to, and focusing on, the specific issues identified in the screening process, and an environmental and social management plan (ESMP). However, these operations should also establish safeguard, or monitoring requirements to address environmental and other risks (social, disaster, cultural, health and safety etc.) where necessary.

## Summary of Impacts / Risks and Potential Solutions

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

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

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

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

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



## Safeguard Screening Form

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

The negative impacts from production, procurement and disposal of [hazardous materials](#) (excluding POPs unacceptable under the Stockholm Convention or toxic pesticides) are [minor](#) and will comply with relevant national legislation, [IDB requirements on hazardous material](#) and all applicable International Standards.

**Monitor hazardous materials use:** The borrower should document risks relating to use of hazardous materials and prepare a hazardous material management plan that indicates how hazardous materials will be managed (and community risks mitigated). This plan could be part of the ESMP.

The project has or will have [minor](#) negative impacts on [Indigenous Peoples](#).

**Mitigation Framework:** Include specific mitigation measures as needed in consultation with affected IPs. Consult with Indigenous Peoples specialist. Incorporate measures in legal documentation (covenants, conditions of disbursement, etc.). Include mitigation measures as part of overall environmental and social management plans or provisions.

The project is located in an area prone to [coastal flooding](#) from [storm surge](#), high wave activity, or erosion and the likely severity of the impacts to the project is [moderate](#).

A Disaster Risk Assessment, that includes a Disaster Risk Management Plan (DRMP), may be necessary, depending on the complexity of the project and in cases where the vulnerability of a specific project component may compromise the whole operation. The DRMP should propose measures to manage or mitigate these risks to an acceptable level. The measures should include risk reduction (siting and engineering options), disaster risk preparedness and response (contingency planning, etc.), as well as financial protection (risk transfer, retention) for the project. They should also take into account the country's disaster alert and prevention system, general design standards, coastal retreat and other land use regulations and civil defense recommendations in coastal areas.

The project is located in an area prone to [inland flooding](#) and the likely severity of the impacts to the project is [moderate](#).

A Disaster Risk Assessment, that includes a Disaster Risk Management Plan (DRMP), may be necessary, depending on the complexity of the project and in cases where the vulnerability of a specific project component may compromise the whole operation. The DRMP should propose measures to manage or mitigate these risks to an acceptable level. This must take into consideration changes in the frequency and intensity of intensive rainfall and in the patterns of snowmelt that could occur with climate change. The DRMP includes risk reduction measures (siting and engineering options), disaster risk preparedness and response (contingency planning, etc.), as well as the financial protection (risk transfer, retention) of the project. The DRM Plan takes into account existing vulnerability levels and coping capacities, the area's disaster alert and prevention system, general design standards, land use regulations and civil defense recommendations in flood prone areas. However, the options and solutions are sector- and even case-specific and are selected based on a cost analysis of equivalent alternatives.



# Safeguard Screening Form

## Disaster Risk Summary

Disaster Risk Level

**B**

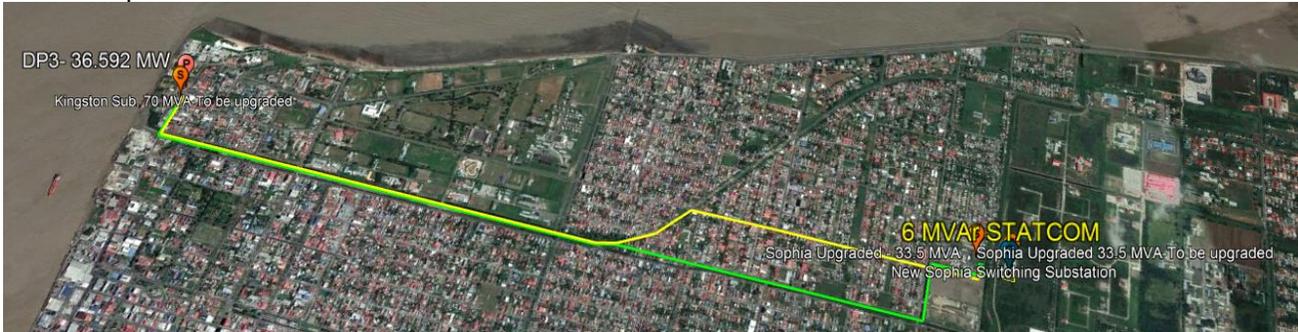
Disaster / Recommendations

## Disaster Summary

Details

Actions

Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.

Environmental and Social Strategy (ESS)	
<b>Operation Name</b>	Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE)
<b>Operation Number</b>	GY-L1066
<b>Prepared by</b>	Luca Marini – VPS/ESG
Operation Details	
<b>IDB Sector</b>	INE/ENE
<b>Type of Operation</b>	Specific Investment Loan Operation
<b>Environmental Social Classification</b>	Category B
<b>Disaster Risk Rating</b>	Moderate
<b>Borrower</b>	Government of the Cooperative Republic of Guyana
<b>Executing Agency</b>	Ministry of Public Infrastructure: Guyana Power and Light Inc. and Guyana Energy Agency
<b>IDB Loan US\$ (and total project cost)</b>	US\$ 21,160,000
<b>Applicable Policies/Directives</b>	OP-102; OP-704; OP-710; OP-761; OP-765; OP-703 (B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.9, B.10, B.11, B.17)
Operation Description	
<p>The objective is to support Guyana’s evolving energy sector framework by: (i) investing in solutions towards achieving a cleaner and diversified energy matrix in the hinterlands; (ii) reinforcing infrastructure to improve reliability and energy security for the grid; and (iii) developing and strengthening the institutional capacity and governance structure of the sector.</p> <p><b>Component 1. Innovative solutions for energy security and reliability for hinterlands townships (US\$9 MM):</b> This component will invest in solar technology in the townships of Bartica, Mahdia and Lethem. The new generation plants will have tailored generation systems including storage capacity to meet increasing demand, now reliant on fossil fuel. The component will provide a reliable electricity source to the expanding needs of power supply in the city, as well as to attend the large population of indigenous peoples. An installation of 1.5 MW within 7.5 acres of land is planned in Bartica. An installation of 1 MW within five acres of land is planned in Lethem. An installation of 0.65 MW within 3.25 acres of land is planned in Mahdia. All plants will most likely be located within indigenous people territories, however no precise locations have been identified yet.</p> <p><b>Component 2. Reinforcing transmission infrastructure (US\$6 MM):</b> This component will finance reinforcements of the transmission infrastructure with: (i) reinforcements of the new Sophia substation; and (ii) investments in transmission system redundancy by installing reactive power compensation and five km transmission line (redundancy circuit). This Component will entail construction and commissioning of a five km single circuit overhead 69 kV transmission line between the Kingston and Sophia substations outside Georgetown; expansion of the Sophia substation; and L5 conductor upgrade to allow for parallel operation and maximum power transfer.</p>	
	
<p><b>Component 3. Energy sector framework: institutional strengthening and governance (US\$5 MM):</b> This component will strengthen the Government of Guyana’s (GoG) ability to manage the energy sector effectively, efficiently and sustainably. Activities include the transfer and development of local capacity through financing high level technical partnerships with international experts, project support and assistance advisors, specialists</p>	

and local teams for the development of a sustainable energy sector. It will also map out the roles and responsibilities of new governmental institutions in the oil and gas sector.

### **Key Potential ESHS Risks and Impacts**

This operation has been defined as a category B with substantial environmental and social risk, since it includes projects in different locations, within indigenous communities and important biodiversity features, which is why adequate evaluation, management and monitoring of all associated environmental and social impacts are necessary. The main Environmental, Social, Health and Safety impacts and risk are associated with Components 1 and 2.

Regarding component 1, the construction of the three solar plants might generate possible impacts associated to land acquisition (from Indigenous People) and land clearing and grading. At the moment, no resettlement is anticipated. These activities will occur within Indigenous People land; however, community support is anticipated from the three communities since all of them will benefit from having improved access to electricity and will be sole beneficiaries of the plants. In case potential adverse impacts would occur, specific mitigation measures will be required to mitigate such impacts if required. Impacts on biodiversity features might be expected due to land clearing, however impacts on critical habitats or protected areas are not expected. In addition, other risks and impacts, mainly temporary, associated with construction activities can be expected: (i) dust and minimum atmospheric emissions; (ii) impacts on local water bodies and on land; (iii) temporary noise impacts; and (iv) minimum impacts on occupational and community health and safety. Additional impacts might be expected by the construction/widening of access roads, if any, and by the installation of workers camp. These will be further assessed during the preparation phase.

Regarding component 2, the construction of the new transmission line and expansion of existing substation will occur on existing right of way (pertaining to an existing transmission line to be replaced by the new line), and land within the existing substation. No resettlement or land acquisition is expected. Usual risks and impacts, mainly temporary, associated with construction activities can be expected: (i) temporary interruption of traffic and associated impacts; (ii) dust and minimum atmospheric emissions; (iii) impacts on local water bodies and on land, as a result of hazardous waste and materials if not managed properly; (iv) temporary noise impacts; and (v) impacts on occupational and community health and safety.

During the due diligence process, the Borrower's capacity to handle the ESHS aspects of the various components will be assessed.

### **Information Gaps and Strategy for Analysis and Management**

In accordance with IDB's Policy OP-703, this Program is classified as Category "B" due to the expected impacts of the proposed interventions. In general, it is anticipated that the Program will likely cause short term negative impacts for which effective mitigation measures will be developed.

Consequently, following Directives B.3 and B.5, the Borrower is required to carry out for each project of Components 1 and 2 an appropriate Environmental and Social Analysis (ESA) and prepare an Environmental and Social Management Plan (ESMP), with the objective of identifying and managing the environmental and social and cultural impacts and risks of the operation during its preparation and operation, including meaningful consultation with interested parties. In case of impacts to indigenous communities the consultations will be carried out in a culturally appropriate manner and with prior consent.

These documents should especially analyze the expected ESHS direct and indirect impacts, risks and mitigation measures, including:

- General ESHS aspects during construction (see the previous paragraph for the impacts and risks associated with construction works) and their mitigation measures (managed through specific plans).
- Evaluation of the impacts associated with land acquisition, and confirmation that resettlement and livelihood impact will not occur.
- Evaluation of the impacts to indigenous peoples and their mitigation measures, and evaluation of the good faith negotiation process; it is currently anticipated that good faith negotiation process will not be required.
- Evaluation of the possible impacts on protected areas and biodiversity, and development of specific mitigation measures and a biodiversity management plan.

Meaningful consultations will include interested parties, paying special attention to the affected parties and Indigenous People. Following Directive B.6, the main objective of the consultations will be to inform, collect

comments and adjust the ESA and ESMS. The Stakeholder Management Plan and Grievance Mechanism will be implemented and will be continuously evaluated and improved in the different stages of the operation (especially during the execution phase). The design of the consultations will be culturally appropriate. Each ESA and ESMP should be disclosed prior to the analysis mission through the Borrower and the IDB website.

If the ESAs show that there are negative impacts on indigenous peoples, a specific management plan will be developed, consulted, and published for each project.

The expected disaster risk, type 1, for this Operation is moderate, particularly associated with the possible passage of hurricanes and floods. It is not expected that the Operation will exacerbate disaster risk, type 2. The ESA for each component will include a natural disaster risk analysis and the ESMP will include a Contingency Plan for the various projects.

Based on the information currently available, the ESAs, the consultations and all the necessary plans should be ready before analysis mission set in the end of June. The environmental and social consultant should be hired as soon as possible (no later than April 2018) and the team should include an environmental/biodiversity and a social/indigenous people expert. Even though the possibility is remote since the communities are awaiting for the projects and no opposition is expected, it is important to emphasize that the operation could require the good faith negotiation process and agreements, causing possible unmanageable delays in the operation.

**Opportunities for IDB Additionality on Environment and Social matters (if any)**

NA

**Annex Table: Operation Compliance with IDB Safeguard Policies**

See Table Annexed

**Annex Table: Operation Compliance with IDB Safeguard Policies**

<b>Policies / Directives</b>	<b>Policy / Directive Applicable?</b>	<b>Rationale for applicability of Policy / Directive</b>	<b>Actions required during Preparation &amp; Analysis</b>
<b>OP-703 Environment and Safeguards Compliance Policy</b>			
B.2 Country Laws and Regulations	Yes	The program will comply with of the environmental and social regulation of Guyana	Development of ESA, ESMP for each project
B.3 Screening and Classification	Yes	The Project was categorized as B	NA
B.4 Other Risk Factors	Yes	During the due diligence process, it will be evaluated if the Borrower has sufficient capacity to manage the various components	The Borrower will guarantee sufficient organizational capacity to adequately manage all the ESHS aspects of the various projects (i.e. implementation of mitigation measures, ensure sufficient staff and resources, monitoring, etc.)
B.5 Environmental Assessment and Plans Requirements	Yes	ESA and ESMP for each Project are necessary	The Borrower / Executing Agencies will develop all necessary ESAs and ESMPs
B.5 Social Assessment and Plans Requirements (including Livelihood Restoration Plan)			
B.6 Consultation	Yes	During preparation, meaningful consultations will be held for each project and the consultation plans will be prepared for project design, also it will be included in the ESMPs. In IP areas, the consultation will be designed and executed in a culturally appropriate manner	During preparation, the IDB will evaluate the consultation process to ensure compliance with the requirements of B.6
B.7 Supervision and Compliance	Yes	The operation will be supervised to ensure compliance with the guidelines and requirements agreed in the Loan Agreement and ESMPs	The IDB will verify that the costs and responsibilities for the supervision of the projects and the ESMPs are correctly defined
B.8 Transboundary Impacts	No	N/A	N/A
B.9 Natural Habitats	TDB	The Program might impact some biodiversity features	During the preparation, baselines and impacts on local natural habitats will be evaluated and specific measures will be prepared. The operation will be designed to avoid significant adverse impacts
B.9 Invasive Species	No	N/A	N/A

Policies / Directives	Policy / Directive Applicable?	Rationale for applicability of Policy / Directive	Actions required during Preparation & Analysis
B.9 Cultural Sites	TDB	It is not expected that the Operation could impact cultural sites	During the preparation, impacts on cultural sites will be evaluated and specific measures will be prepared if required. The operation will be designed to avoid impacts on cultural sites
B.10 Hazardous Materials	Yes	Construction work will include the use and generation of hazardous materials such as oils and lubricants, chlorine, etc	Specific procedures will be established in the ESMPs for both construction and operations, which will contain procedures for the management of hazardous materials and the Waste Management Plan, including hazardous waste
B.11 Pollution Prevention and Abatement	Yes	The operation will generate environmental impacts	The Borrower shall include in the ESMPs specific measures and procedures for both construction and operations for the prevention and reduction of pollution
B.12 Projects Under Construction	No	N/A	N/A
B.13 Noninvestment Lending and Flexible Lending Instruments	No	N/A	N/A
B.14 Multiple Phase and Repeat Loans	No	N/A	N/A
B.15 Co-financing Operations	No	N/A	N/A
B.16 In-Country Systems	No	N/A	N/A
B.17 Procurement	Yes	The ESHS requirements should be included in the contracts of construction companies	Requirements will be included in the OM to ensure that ESHS aspects are included in the contracts of construction companies
<b>OP-704 Natural Disaster Risk Management Policy</b>			
A.2 Analysis and management of Type 2 risk scenario	No	It is not expected that the Operation will exacerbate disaster risk, type 2	N/A
A.2 Contingency planning (Emergency response plan, Community HS plan, OHS plan)	Yes	Disaster risk management procedures should be included in the ESMPs	The Borrower will include in the ESMPs an emergency management plan
<b>OP-710 Operational Policy on Involuntary Resettlement</b>			
Involuntary Resettlement	TDB	Resettlement is not expected; however, it will be verified during the preparation phase	During preparation it will be identified if resettlement is necessary for the Operation. If so it will be properly assessed in the ESA and ESMP

Policies / Directives	Policy / Directive Applicable?	Rationale for applicability of Policy / Directive	Actions required during Preparation & Analysis
<b>OP-765 Operational Policy on Indigenous Peoples</b>			
Sociocultural Evaluation Requirement	Yes	It is required to analyze the direct, indirect and cumulative impacts	The ESAs will assess impacts on Indigenous People
Good-faith Negotiations and proper documentation	Yes	Socio-culturally appropriate will be needed in case of presence of indigenous population	Socio-culturally appropriate consultations in case of significant negative impacts to indigenous communities and written agreements will be required
Agreement with Affected Indigenous Peoples	TDB	If Indigenous People are significantly affected, written agreements will be needed	If there is significant negative affectation, written agreements are required
Indigenous Peoples Compensation, and Development Plan and/or Framework Requirement	TDB	The ESA will analyze the severity of the adverse impacts to IP. If this is the case, a Compensation and Development Plan for Indigenous Peoples should be implemented	With the results of the ESA and consultations, it will be possible to define if the Project has impacts on IP. If required, actions and plans should be established to mitigate adverse impacts to IP
Discrimination Issues	Yes	Discrimination is not foreseen and will be proscribed	It will be evaluated in the ESA and specific mitigation measures will be applied
Transborder Impacts	No	N/A	N/A
Impacts on Isolated Indigenous Peoples	No	N/A	N/A
<b>OP-761 Operational Policy on Gender Equality in Development</b>			
Consultation and effective participation of women and men	Yes	Women and Men should have the same opportunities and their participation in public consultations will be promoted	The consultations will be inclusive and will facilitate the participation of women and men
Application of safeguard and risk analysis	TBD	The ESA will analyze the risks of the Project	The ESA will ensure that the Project does not include any unequal access to paid and unpaid activities
<b>OP-102 Access to Information Policy</b>			
Disclosure of relevant E&S Assessments Prior to Analysis Mission, QRR, OPC and submission of the operation for Board consideration	Yes	ESAs and ESMPs must be disclosed before analysis mission through the IDB and Borrower's web page.	The IDB and the Borrower will publish all necessary ESHS documents
Provisions for Disclosure of Environmental and Social Documents during Project Implementation	Yes	In the event that new relevant ESHS documents are prepared during the execution of the Program, they will also be made available to the public	This will be included as specific conditions of the Loan Agreement

### INDEX OF COMPLETED AND PROPOSED SECTOR WORK

Area	Description	Estimated Dates	References and Electronic Links
Technical Documents	Result Matrix, detail Budget, disbursement plan, Risk Management (GRP), Program Operations Manual (POM), Annual Operational Plan (AOP), Procurement Plan (PA), initial PMR.		To be annexed at POD stage
Technical options and design	<p>The following documents have been received:</p> <ol style="list-style-type: none"> <li>1. Executive Project Summary: Guyana Hinterland Electrification Program (Solar PV Farms).</li> <li>2. GPL Priority Projects – Concept Notes.</li> </ol>		<ol style="list-style-type: none"> <li>1. <a href="#">EZSHARE-669955382-13</a></li> <li>2. <a href="#">EZSHARE-669955382-11</a></li> </ol>
Technical and economic studies	<ol style="list-style-type: none"> <li>1. Technical feasibility and economic analysis for the Solar power plants in the selected areas.</li> <li>2. Technical feasibility and economic analysis for the investments for the Transmission and substation updates.</li> </ol>	Sept. 2018	To be annexed at POD stage
Institutional Analysis	<ol style="list-style-type: none"> <li>1. Executing Agencies have done the SECI. (One executing agency is currently implementing GY-L1041 operation)</li> <li>2. Preparation of the PACI for both executing agencies</li> </ol>	Jun. 2018	To be annexed at POD stage
Environmental and Social Safeguards	<ol style="list-style-type: none"> <li>1. EIA are done for all investment projects</li> </ol>	Jun. 2018	To be annexed at POD stage

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<sup>1</sup> The information contained in this Annex is confidential and will not be disclosed. This is in accordance with the "Deliberative Information" exception referred to in paragraph 4.1 (g) of the Access to Information Policy (GN-1831-28) at the Inter-American Development Bank.