

## PROJECT PROFILE

### GUYANA

#### I. BASIC DATA

<b>Project Name:</b>	Guyana Utility Scale Solar Photovoltaic Program (GUYSOL)		
<b>Project Number:</b>	GY-G1007		
<b>Project Team:</b>	Sologuren Blanco, Jaime (INE/ENE) Team Leader; Masson, Malaika (INE/ENE) Alternate Team Leader; Grundwaldt, Alfred (CSD/CCS) Alternate Team Leader; Barbosa Taves De Gouvea, Heleno (ORP/REM); Paredes, Juan Roberto; Bonzi, Augusto; Montanez, Leopoldo; Angulo, Emilio; Baltodano, Fabiola; Goldenberg, Federico ; Suber, Stephanie (INE/ENE); Williams, Lerone (ENE/CGY); Beaujon Marin, Amanda (INE/INE); Gaviano, Andrea, Bornholdt, Luciano; Collins, Steven (VPS/ESG); Isabel Williamson, David; Oglialoro, Claudia (ORP/GCM); Jimenez De Arechaga, Pilar (LEG/SGO); Williams, Derise (CCB/CGY); Payen, Patricia Yamilee; Dunbar, Gregory A. (FMP/CGY)		
<b>Beneficiary:</b>	Cooperative Republic of Guyana		
<b>Executing Agency:</b>	Guyana Power and Light Inc.		
<b>Financial Plan:</b>	IDB (The Kingdom of Norway – Norwegian Grant for Guyana) <sup>1</sup> :	US\$	82,023,437
	IDB administrative fee	US\$	1,600,000
	Total: <sup>2</sup>	US\$	83,623,437
<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	

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<sup>1</sup> Following the Letter of Agreement Amendment (January 21, 2015), the Bank opened an account under named the Norwegian Fund for Guyana (NGG), these funds come from the Guyana-Norway partnership part of Guyana REDD+ Investment Fund (GRIF).

<sup>2</sup> The NGG as of June 2021 had a balance of US\$85,123,437. These resources will cover the present Investment Operation and the IDB administration fee as well as the Technical Cooperation (TC) (GY-T1164) which has a budget of US\$ 1,500,000.-. The TC GY-T1164, a Bank-executed cooperation will be approved as a separate operation.

## II. GENERAL JUSTIFICATION AND OBJECTIVES

- 2.1 Guyana has an important opportunity to convert its abundance of renewable natural resources into sustainable energy for power generation. For decades, the country has remained dependent on imports of liquid fossil fuels to satisfy its energy needs. The imports of fuels and lubricants declined from US\$ 506.7 million in 2019 to US\$ 395.2 million in 2020, with their share in total imports increased<sup>3</sup>. The country, as a net importer of liquid fossil fuels, is impacted by the volatility of fuel prices placing further pressure on the country's fiscal expenditures<sup>4</sup>.
- 2.2 The Government of Guyana (GoG) developed the Low Carbon Development Strategy (LCDS) as a pivotal strategy for a sustainable development of Guyana, also reinforcing Guyana's Nationally Determined Contribution (NDC)<sup>5</sup>. The LCDS supports a transition to renewable and clean energy sources as an essential measure for reducing Guyana's dependence on fossil fuel-based electricity while embarking the country in a strategy of diversifying its electricity generation matrix towards nearly 100% Renewable Energy (RE) by 2040.
- 2.3 **The Electricity Sector in Guyana.** The Demerara-Berbice Interconnected System (DBIS) is the main electricity grid in the country. It is owned, operated, and managed by the vertically integrated state-owned power utility, Guyana Power and Light Inc. (GPL). The total available capacity of the DBIS is approximately 204.1 Megawatts (MW), of which 57.6 MW have been in operation for over 24 years, thus considered aged and due for decommissioning. GPL also operates the Essequibo coast isolated system, where 7.2MW out of 12MW of installed capacity is considered unreliable since these aged generators have reduced levels of reliability and lower power output. Both systems run mainly on fossil fuels and provide electricity to about 85% of the total population of the country living in the coastal zones.
- 2.4 GPL's expansion plan considers an increasing demand of about 200% for the years 2020 to 2025 in the DBIS and around 160% in the Essequibo system. This growth in the demand is explained by the overall growth of the economy with a GDP growth of 43.4% in 2020, and a projected average growth of 31.2% for the period 2021-2023<sup>6</sup>. The increase in demand requires the installation of new generation capacity where about 49MW<sup>7</sup> of non-conventional RE, is projected to be installed in the same period. The demand growth presents the opportunity to diversify the electricity generation mix with the introduction of RE technology versus "business-as-usual" Heavy Fuel Oil (HFO)/ (Light Fuel Oil) LFO generators.
- 2.5 As an isolated system, the Linden Electricity Company Inc. (LECI), a subsidiary of the state-owned Hinterland Electrification Company Inc. (HECI), operates the

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<sup>3</sup> [Bank of Guyana Annual Report 2020](#).

<sup>4</sup> Power generation [costs](#) were 1.3% of the country's Gross Domestic Product in 2020 (US\$ 5.7 billion).

<sup>5</sup> [First Guyana's Revised NDC](#)

<sup>6</sup> The main economic activity in the Essequibo region is rice farming, both for local consumption and international export. Other activities include fruit, vegetable, and coconut farming. Similarly, Berbice is a fruit and vegetable producer but an important rice and sugarcane-producing area in Guyana.

<sup>7</sup> Includes approximately 10-15MW of wind energy interconnected to the DBIS.

Linden system. LECI purchases electricity from Bosai<sup>8</sup>, which generates electricity from an 18MW diesel power plant (6X3MW). LECI distributes 70% of the generated electricity to consumers on the eastern side of the Demerara River, attending around 5,292 customers. LECI also sells electricity to the Linden Utility Service Co-operative Society Limited (LUSCSL)<sup>9</sup>, which supplies 5,372 customers on the western side of the Demerara River<sup>10</sup>. The current arrangement and high costs of the power supply in Linden have required the GoG to subsidize electricity tariffs regularly. From 2017 to 2020, the Government's subsidies accounted to more than US\$14.8 million in an average per year.

- 2.6 To achieve the energy matrix diversification objectives, GPL has its 2021-2025 Development and Expansion Plan (D&E), which prioritizes the introduction of solar PV in the new diversified generation matrix. The D&E indicates that Guyana requires different power generation technologies to generate electricity in the most economical and reliable way while transitioning towards maximum RE utilization by 2040. The D&E also recognizes the need to improve system operation via digitalization and modernization to achieve an efficient and reliable power system while improving local capacities.
- 2.7 Guyana is a country with vast amounts of renewable energy resources; the mean solar radiation in Guyana is 1,800 kWh/m<sup>2</sup>/year<sup>11</sup>. Over the years, the GoG has financed projects to increase the use of renewables, including programs supporting solar PV systems in government buildings, small utility-scale solar PV plants<sup>12</sup>, and mini-hydro and micro-solar PV grid systems for energy access in the Hinterlands<sup>13,14</sup>. GPL has also moved towards the promotion of distributed generation opening the grid to independent power producers up to 10 MW of capacity<sup>15</sup>.
- 2.8 In addition to the natural resource potential, the decreasing costs in technology, the easy and quick deployment, and the lower socio-environmental impacts in comparison with other technologies, positions the use of PV solar as the most appropriate alternative for the D&E. The mitigation of Greenhouse Gas (GHG) emissions also provides a rationale for developing solar technology. Thus, in accordance with the conditions and obligations contained in the Memorandum of Understanding executed on November 9<sup>th</sup>, 2009, between the GoG and Norway, Guyana has decided to implement a Solar PV Program that contributes to the advancement of the decarbonization goals as part of the LCDS and NDC.
- 2.9 **Institutional framework.** The energy sector in Guyana is comprised primarily by the Office of the Prime Minister, as the head of the electricity sector and whose

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<sup>8</sup> [Bosai Minerals Group](#) is a private company that runs the Bauxite Mining Plant in Linden.

<sup>9</sup> LUSCSL is a cooperative society registered in April 1960. The society was established to enable electricity supply to residents in the Wismar/Christanburg area and is run by a Committee of Management.

<sup>10</sup> The people of Linden work mainly with mining companies, this is the main region of Bauxite extraction. Cattle-rearing and forestry are also done on very small scales.

<sup>11</sup> <https://gea.gov.gy/solar/>

<sup>12</sup> GY-L1066 supports PV investment in Lethem, Bartica and Mahdia executed by the Guyana Energy Agency.

<sup>13</sup> Hinterland is referred as the area outside the coastal plain.

<sup>14</sup> GY-G1004 supports a run of the river 150 Kilowatt (kW) mini-hydropower plant and 9 rural solar PV mini-grids.

<sup>15</sup> [2019 Order Made Under the ESRA 1999](#)

mandate is articulated in the Electricity Sector Reform Act 1999 (ESRA) and its amendment in 2010<sup>16</sup>. The Ministry of Works oversees the technical aspects of the operationalization of the electricity sector in the country. GPL is the country's main public power utility and holds the exclusive rights to generate and supply power in the DBIS, the Essequibo system, as well as other off-grid systems like the Bartica System. GPL operations comprise generation, transmission, and distribution activities. Similarly, the HECL, is a state-owned company comprised by all hinterland public electric utilities operating isolated systems including LECI. The Guyana Energy Agency (GEA) is responsible for all energy-related matters ensuring the efficient use of imported petroleum-based energy sources, while encouraging, where economically feasible and environmentally acceptable, increased utilization of indigenous owned renewable energy sources. Finally, there is the Environmental Protection Agency (EPA) that among other responsibilities oversees granting the socio-environmental permits.

- 2.10 **Problems identified.** The main challenge to be addressed by this program is the absence of a diversified generation matrix in the DBIS, the Essequibo and Linden systems, which causes higher CO<sub>2</sub> emissions and high generation costs. The high dependence on fossil fuels has historically constrained GPL's financial situation. In 2020, GPL fuel consumption represented US\$74.8 million, approximately 45% of its operating costs. This constitutes the most expensive element of the electricity production cost, also contributing to high electricity tariffs<sup>17</sup>. Additionally, in Linden's systems, dependency of energy supply from a third party raises the risk of poor reliability and increasing government subsidies.
- 2.11 **Proposed Solution.** To address these problems, the program proposes to increase the use of RE generation, with specific investments in innovative solar PV and battery energy storage system (BESS) technology, to reduce the carbon-intensive nature of the electricity generation mix of both the DBIS and the isolated systems of the Essequibo and Linden. Likewise, the diversification would positively reduce the generation cost, increase resiliency in the systems, while also reducing the financial burden to the public utilities and associated GoG subsidies.
- 2.12 **Objective.** The objective of the program is to support the diversification of Guyana's energy matrix towards the use of cleaner and renewable energy sources in the electricity generation matrix. The specific objectives of the program are to: (i) avoid CO<sub>2</sub> emissions with the development of solar PV generation plants; (ii) lower the cost of electricity generation while supporting the country transition towards renewable energy-based generation; and (iii) improve the operation and reliability of the isolated systems of Essequibo and Linden.
- 2.13 **Component 1. Solar PV solutions in the matrix (US\$73.6 million):** The program will invest in solar photovoltaic plants as following: (i) 10 MWp of generation

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<sup>16</sup> [Electricity Sector Reform Act – 1999; Electricity Sector Reform Act – 2010 Amendment.](#)

<sup>17</sup> These translated to have the highest tariffs in the Caribbean region, ranging from US\$0.28/per kilowatt-hour (kWh) to US\$0.32/kWh. According to the Bank's Flagship Report "DIA 2020: From Structures to Services" when prices of services such as electricity are high, consumption accounts for a large share of households' income and eventually leads to consumption below what is necessary to fulfill basic needs. This particularly affects the unprivileged, in Latin America and the Caribbean, people in the lower half of the income distribution spend a larger share of their income on infrastructure services than in all other developing regions

capacity connected to the DBIS at the Berbice area; (ii) 8MWp in the Essequibo coast isolated system including a BESS with a minimum capacity of 8MWh; and (iii) 15MW connected to the Linden isolated system inclusive of a BESS with a minimum capacity of 15MWh. Each facility will be connected to their own 13.8kV primary distribution network. GPL has preliminarily identified the general location for the installation of each project ([Concept Note](#)).

- 2.14 The DBIS solar-PV plants will generate approximately 16.78GWh annually resulting in about US\$1.53 million in savings from displaced fossil fuel and a total of 11,089 tCO<sub>2</sub> avoided. Similarly, on the Essequibo Coast, approximately US\$2.11 million will be saved from displaced fossil fuel and an estimated of 9,278 tCO<sub>2</sub> avoided annually. Additionally, the Linden solar-PV project, will reduce about US\$5.47 million from Government subsidies, and about 20,752 tCO<sub>2</sub> per year will be mitigated.
- 2.15 The program is expected to retroactively finance the following studies: (i) Electrical Interconnection and Battery Optimization Assessments for the Berbice, Linden, and Essequibo PV Projects: including the electrical impact assessments for the eight project sites and a Battery Optimization Assessment that will inform on the capacities and location of these installations based on an economic and technical analysis on battery usage ; and (ii) Topographic Surveys, Geotechnical Analysis, and Flood Risk Assessments for all project sites that will provide key civil engineering details of the projects. It will also finance the Environmental and Social Assessment (ESA) for a representative sample of the project sites as indicated in Annex III. Overall, these studies will provide the needed technical and engineering information of the project sites while “de-risking” the projects with sufficient technical information to attract reputable and experienced international bidders.<sup>18</sup>
- 2.16 **Component 2. Operation efficiency and reliability of the systems (US\$5 million):** The program will finance system upgrades and modernization of the system operation and monitoring at the isolated systems of Essequibo and Linden to promote remote operation and digitalization for the overall system stability and resiliency.
- 2.17 **Other Costs (US\$3.4 million).** This component will finance project management costs, audits, monitoring and evaluation of the project.
- 2.18 **Gender and diversity.** The introduction of solar-PV in isolated systems presents an opportunity to support feasible productive uses of electricity with more gender and social inclusion, encouraging the participation of women and people with disabilities both in training and employment to promote green jobs career development opportunities. A gender and diversity analysis will be completed to prepare this operation, which will inform the final scope of the supported gender, diversity, and people with disabilities specific activities<sup>19</sup>.
- 2.19 **Innovation and digitalization.** The program will promote among other activities: (i) the use of state-of-the-art isolated RE and BESS systems; (ii) remote operation

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<sup>18</sup> The works are expected to be procured as a “design and build” following an international competitive bidding process.

<sup>19</sup> Supported by TC GY-T1164

of those systems: (iii) upgrades to energy management system: and (iv) utilization of geographical information systems to improve the utility planning.

- 2.20 **Expected Results and Beneficiaries.** The expected impact is the diversification of the energy matrix with solar PV and BESS for storage. The following outcomes are expected: (i) avoidance of CO<sub>2</sub>, (ii) reduction of the generation costs while supporting adding new generation capacity to the systems, and (iii) increase reliability in the service to the people in the isolated systems. The beneficiaries of the operation are the public utilities and the overall population of the served areas that are part of the program.
- 2.21 **Strategic Alignment.** The program is consistent with the Bank's Updated Institutional Strategy (UIS) 2020-2023 (AB-3190-2), specifically with the development challenges of: (i) Social Inclusion and Equality, through the provision of a more affordable and sustainable electricity in isolated and vulnerable communities; and (ii) Productivity and Innovation, by promoting RE and energy storage innovative technologies in the systems. Moreover, the operation is aligned with the cross-cutting themes: (i) Gender Equality, by contributing to improve access to services and socioeconomic opportunities for women to promote their participation in the labor force; and (ii) Climate Change and Environmental Sustainability, in line with the Bank's Climate Change Sector Framework (GN-2835-3), as it promotes avoidance in CO<sub>2</sub> emissions. Additionally, the program will contribute to the Corporate Results Framework 2020-2023 (GN-2727-12) through the indicators of: (i) installed power generation capacity from RE sources; (ii) CO<sub>2</sub> emissions avoided with support of IDB financing. Lastly, the program is consistent with the Energy Sector Framework (GN-2830-8) through the development of RE sources and improvement of energy security and sustainability. According to the [joint MDB approach on climate finance tracking](#), 86,4% of total funding for this operation result in climate change mitigation and adaptation activities, contributing to the IDBG's climate finance goal. The program is aligned with the IDB Group Country Strategy (CS) with the Cooperative Republic of Guyana (2017-2021) (GN-2905), in particular with the Results Matrix Strategic Area of delivering critical infrastructure with the Strategic Objective to support investment in infrastructure for private sector growth by: (i) increasing the execution rate of infrastructure and investment in the Public Sector Investment Program (PSIP) and (ii) and continue working with key utilities to enhance their capacity to manage existing and future infrastructure assets.

### III. TECHNICAL ISSUES AND SECTOR KNOWLEDGE

- 3.1 **Execution arrangements.** The Beneficiary is the Cooperative Republic of Guyana, and GPL will serve as the executing agency of the operation with a Program Executing Unit (PEU). GPL will implement the program as the sole executing agency in close coordination with LECI. A specific agreement between GPL and LECI will be developed to clarify the roles of both public companies for the operation of the systems.
- 3.2 This operation is structured as a five-year multiple works program that entails financing of several independent but technically similar projects towards the

program's objective. As such, a representative sample of around 50% of the total investment has been identified following the Environmental and Social Safeguards policies to facilitate the process and approve the operation. The cost is US\$82,024,328 for the program to be financed with non-reimbursable resources by Guyana REDD+ Investment Fund (GRIF) deposited in an account named the Norwegian Fund for Guyana (NGG). The Bank will charge a non-refundable administration fee of US\$1,600,000 from the NGG as well, according to stipulations in the signed Administration Agreement between the Bank and the Norwegian Agency for Development Cooperation (NORAD). The Bank will be responsible for the preparation and submission of all project reports to NORAD.

- 3.3 **Sector knowledge:** The IDB has been supporting GoG efforts to transform the energy sector through financing for several activities such as: (i) rural electrification (1103/SF-GY); (ii) legal, regulatory, and institutional framework strengthening and implementation of sector policies (1938/BL-GY and 4698/BLGY); (iii) institutional strengthening, distribution network rehabilitation and loss reduction (co-financed with the European Union (2567/BL-GY, 3238/OC GY, 3239/BL-GY, GRT/EX-14519-GY)); technical assistance and development of RE (GRT/FM-13897-GY, 4676/BL-GY). The IDB has experience financing isolated systems with RE generation in Nicaragua with the program National Sustainable Electrification and Renewable Energy Program III (2/JA-NI-NCP2), and recently approved a loan in The Bahamas (4978/OC-BH) for RE development and matrix diversification.

#### IV. ENVIRONMENTAL SAFEGUARDS AND FIDUCIARY SCREENING

- 4.1 In accordance with IDB's Policy OP-703, this Program is classified as Category "B" due to the expected environmental, social, health & safety (ESHS) impacts of the proposed interventions. The categorization will be confirmed during the preparation phase when additional information on the project will become available, especially on the precise locations of the solar sites and transmission lines. In general, it is anticipated that the Program will likely cause short-term negative impacts for which effective mitigation measures will be developed. Key potential ESHS risks and impacts related to the construction of the project are mainly related to land clearing and grading activities in some of the sites. Additionally, key potential E&S risks and impacts may include limited economic displacement, to biodiversity impacts, exposure to risk of flooding, and community health and safety risks. It is important to note that the solar plants will be located on government land and no land acquisition is expected nor negative impacts on Indigenous Peoples (future projects with significant potential negative impacts on Indigenous Peoples will be excluded from this operation). These aspects will be reconfirmed during the preparation phase within the E&S studies foreseen. Project siting and a proper analysis of alternatives of project facilities will be important to avoid impacts to the environment and nearby communities.
- 4.2 Being a multiple works program, a representative sample of the program has been identified to include the sites with most significant ESHS impacts and risks. Following Directives B.3 and B.5, the Beneficiary is required to develop the following documents: Environmental and Social Framework (ESMF) for the overall Program; and, for the representative sample: Environmental and Social Analysis (ESA) and Environmental and Social Management Plan (ESMP), Consultation



Plan and Consultation report. The fit-for-disclosure version of the ESMF, ESA and ESMP will be disclosed prior to the analysis mission through the IDB website and GPL website.

4.3 **Fiduciary Aspects.** GPL is responsible for the execution of operations 3238/OC-GY, 3239/BL-GY, GRT/EX-14519-GY<sup>20</sup> and 4676/BL-GY-2. The fiduciary institutional assessment will be updated to define the fiduciary arrangements during execution. A capacity assessment will be conducted for GPL.

4.4 **Retroactive Financing.** The Bank may finance retroactively eligible expenses incurred by the Beneficiary prior to the date of Investment Grant approval up to a sum equivalent to 20% of the proposed investment grant amount, provided that they satisfy requirements substantially similar to those established in the Investment Grant Agreement. These expenses must have been incurred on or after the approval date of this project profile, and no expenditure incurred more than 18 months prior to the Investment Grant approval date should be included<sup>21</sup>.

## V. OTHER ISSUES<sup>22</sup>

5.1 The main preliminary risks identified are:

RISK TAXONOMY	RISK DESCRIPTION	RISK LEVEL	MITIGATION
Project	Limited local experience and capacity in utility scale solar PV plants, could delay the development and implementation of the project, impacting the program performance and duration.	High	The TC (GY-T1164) will finance the development of a capacity building program for GPL and other public utilities' local teams. An international expert will be hired to technically support the project implementation and sharing lessons learned from the implementation of similar solar projects.
Technical Design and planning	Unavailability of technical studies for the interconnection, BESS systems and geotechnical which could affect the scope and technical conditions of projects.	Medium -high	The program will, under Component I, commission reputable firms to prepare the required technical interconnection, BESS and geotechnical and studies for all project sites.
Execution Environment	Coordination among the Government representatives and Program stakeholders	Medium -high	As part of the program operation manual, it will be established periodic interagency meetings. Additionally, to share the program progress and get high-level advise from GoG, NORAD and IDB, a Program Steering Committee will be established which will meet 2 times per year.
	If the current emergency related to COVID-19 continues,		All Government of Guyana Protocols will be followed at all stages for the program.

<sup>20</sup> The Power Utility Upgrade Program (PUUP) which includes operations 3238/OC-GY, 3239/BL-GY and GRT/EX-14519-) is expected to be completed by 10<sup>th</sup> October 2021.

<sup>21</sup> In accordance with OP-507-Recognition of Expenses, Retroactive Financing and Advanced Procurement, the Agreement between IDB and Norway must explicitly endorse the application of this policy.

<sup>22</sup> Following Bank policies, during POD preparation a full Risk Matrix will be developed to identify all risks associated to the Program.



RISK TAXONOMY	RISK DESCRIPTION	RISK LEVEL	MITIGATION
	implementation of the planned works could delay the program execution		
Environmental and social safeguards	Sites located close to water bodies which could be susceptible to floods	Medium-high	The Geotechnical and Civil works technical study includes: a) Topographic Surveys, b) Geotechnical Analysis, and c) Flood Risk Assessments for all project sites. Based on the results, designs for those sites that could present a risk, will include flood prevention and mitigation measures in the tender documents.
	Land clearing and grading activities in some of the sites (Block 37, Lima Sands and Onderneeming)		The ESA studies to be carried out during preparation will include a qualitative disaster risk analysis as well as emergency and contingency measures.

## VI. RESOURCES AND TIMETABLE

6.1 The Proposal for Operation Development (POD) will be distributed to the Quality and Risk Review (QRR) by January 3<sup>rd</sup>, 2022, the Draft Loan Proposal to the Operations Policy Committee (OPC) on February 8<sup>th</sup>, 2022. Consideration of the Loan Proposal by the Bank’s Board of Executive Directors is expected by March 30<sup>th</sup>, 2022. The preparation of this program will require administrative resources of US\$18,784, in addition to US\$160,000 financed from TC GY-T1164 resources “Renewable Energy Actions in the Energy Matrix in Guyana”, currently under preparation, that will support technical studies and economic analysis for project preparation.

Development Effectiveness Matrix		
Summary		
<b>I. Corporate and Country Priorities</b>		
<b>Section 1. IDB Group Strategic Priorities and CRF Indicators</b>		
Development Challenges & Cross-cutting Issues	<ul style="list-style-type: none"> <li>-Social Inclusion and Equality</li> <li>-Productivity and Innovation</li> <li>-Gender Equality and Diversity</li> <li>-Climate Change</li> </ul>	
CRF Level 2 Indicators: IDB Group Contributions to Development Results	<ul style="list-style-type: none"> <li>-Emissions avoided (annual tons CO2 equivalent)</li> <li>-Installed power generation capacity from renewable sources (MW)</li> </ul>	
<b>2. Country Development Objectives</b>		
Country Strategy Results Matrix	GN-2905	Support investment in infrastructure for private sector growth
Country Program Results Matrix		The intervention is not included in the 2021 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
<b>II. Development Outcomes - Evaluability</b>		Not Evaluable
<b>3. Evidence-based Assessment &amp; Solution</b>		0.0
3.1 Program Diagnosis		0.0
3.2 Proposed Interventions or Solutions		0.0
3.3 Results Matrix Quality		0.0
<b>4. Ex ante Economic Analysis</b>		0.0
4.1 Program has an ERR/NPV, or key outcomes identified for CEA		0.0
4.2 Identified and Quantified Benefits and Costs		0.0
4.3 Reasonable Assumptions		0.0
4.4 Sensitivity Analysis		0.0
4.5 Consistency with results matrix		0.0
<b>5. Monitoring and Evaluation</b>		0.0
5.1 Monitoring Mechanisms		0.0
5.2 Evaluation Plan		0.0
<b>III. Risks &amp; Mitigation Monitoring Matrix</b>		
Overall risks rate = magnitude of risks*likelihood		Specify risk rate on risk tab
Environmental & social risk classification		B
<b>IV. IDB's Role - Additionality</b>		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)		
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		

*Evaluability Assessment Note: The purpose of this note is to provide an overall assessment of the project's evaluability based on the standards described in the Evaluability Guidelines, as well as to ensure that the Board understands why scores were or were not given to the project. The following information should be developed in order to achieve this purpose. Assess and summarize the diagnosis and the level of empirical evidence to support it. Assess and summarize the level of empirical evidence (or cost-effectiveness) of the solution proposed. Assess and comment on the Results Matrix Quality. Assess and describe the evaluation methodology ex ante and ex post to be used by the project to demonstrate its results. Describe the main type of risk the operation is subject to and its intensity. Describe whether mitigation measures are in place and whether they can be monitored during the life of the project.*



# Safeguard Policy Filter Report

## Operation Information

Operation		
<b>GY-G1007</b> Guyana Utility Scale Solar Photovoltaic Program		
Environmental and Social Impact Category	High Risk Rating	
B	Substantial	
Country	Executing Agency	
GUYANA	GY-GPL - GUYANA POWER AND LIGHT, INC.	
Organizational Unit	IDB Sector/Subsector	
Energy	ENERGY EFFICIENCY AND RENEWABLE ENERGY IN END USE	
Team Leader	ESG Primary Team Member	
JAIME SOLOGUREN BLANCO	ANDREA GAVIANO	
Type of Operation	Original IDB Amount	% Disbursed
Investment Grants	\$83,500,000	0.000 %
Assessment Date	Author	
14 Jun 2021	AGAVIANO ESG Primary Team Member	
Operation Cycle Stage	Completion Date	
ERM (Estimated)		
QRR (Estimated)		
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 \(Disaster Risk Management Policy– OP-704\)](#)

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.



# Safeguard Policy Filter Report

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

The sector of the operation is vulnerable to natural hazards. Climate change may increase the frequency and/or intensity of some hazards.

## 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 (Gender Equality Policy– OP-761)

The operation will offer opportunities to promote [gender equality](#) or [women's empowerment](#).

## 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.4 Other Risk Factors

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

## 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/beneficiary's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.

## 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).

## B.11. Pollution Prevention and Abatement

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



# Safeguard Policy Filter Report

## 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 (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.1 Bank Policies (Resettlement Policy– OP-710)

The operation has the potential to cause physical displacement of people living in the project area of influence (see also Resettlement Policy)

### B.4 Other Risk Factors

There are [associated facilities](#) (see policy definition) related to the operation.

### 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.

## 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 Policy Filter Report



# Safeguard Screening Form

## Operation Information

Operation		
<b>GY-G1007</b> Guyana Utility Scale Solar Photovoltaic Program		
Environmental and Social Impact Category	High Risk Rating	
B	Substantial	
Country	Executing Agency	
GUYANA	GY-GPL - GUYANA POWER AND LIGHT, INC.	
Organizational Unit	IDB Sector/Subsector	
Energy	ENERGY EFFICIENCY AND RENEWABLE ENERGY IN END USE	
Team Leader	ESG Primary Team Member	
JAIME SOLOGUREN BLANCO	ANDREA GAVIANO	
Type of Operation	Original IDB Amount	% Disbursed
Investment Grants	\$83,500,000	0.000 %
Assessment Date	Author	
14 Jun 2021	AGAVIANO ESG Primary Team Member	
Operation Cycle Stage	Completion Date	
ERM (Estimated)		
QRR (Estimated)		
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 beneficiary 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 beneficiary 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 beneficiary 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.

**Construction:** The beneficiary 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 beneficiary 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 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 [droughts](#) 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 consider both the risks to the project, and the potential for the project itself to exacerbate risks to people and the environment during construction and operation. 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 and other related regulations.

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.

The project is located in an area prone to [sea level rise](#) 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 consider both the risks to the project, and the potential for the project itself to exacerbate risks to people and the environment during construction and operation. 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 and other related regulations.

The project will or may require [involuntary resettlement](#) and/or economic displacement of a [minor](#) to [moderate](#) nature (i.e. it is a [direct](#) impact of the project) and does not affect [indigenous peoples](#) or other vulnerable land based groups.

**Develop Resettlement Plan (RP):** The beneficiary should be required to develop a simple RP that could be part of the ESMP and demonstrates the following attributes: (a) successful engagement with affected parties via a process of Community Participation; (b) mechanisms for delivery of compensation in a timely and efficient fashion; (c) budgeting and internal capacity (within beneficiary's organization) to monitor and manage resettlement activities as necessary over the course of the project; and (d) if needed, a grievance mechanism for resettled people. Depending on the financial product, the RP should be referenced in legal documentation (covenants, conditions of disbursement, project completion tests etc.), require regular (bi-annual or annual) reporting and independent review of implementation.

Transport of [hazardous materials](#) (e.g. fuel) with [minor](#) to [moderate](#) potential to cause impacts on community health and safety.

**Hazardous Materials Management:** The beneficiary should be required develop a hazardous materials management plan; details of grievances and any independent health and safety audits undertaken during the year should also be provided. Compliance with the plan should be monitored and reported. Depending on the financial product, this information should be referenced in appropriate legal documentation (covenants, conditions of disbursement etc). Consider requirements for independent audits if there are concerns about commitment of beneficiary or potential outstanding community concerns.



# Safeguard Screening Form

## Disaster Risk Summary

Disaster Risk Level

### **Moderate**

Disaster / Recommendations

The reports of the Safeguard Screening Form (i.e., of the Safeguards Policy Filter and the Safeguard Classification) constitute the Disaster Risk Profile to be included in the Environmental and Social Strategy (ESS). The Project Team must send the PP (or equivalent) containing the ESS to the ESR.

The Beneficiary prepares a Disaster Risk Management Summary, based on pertinent information, focusing on the specific moderate disaster and climate risks associated with the project and the proposed risk management measures. Operations classified to involve moderate disaster risk do not require a full Disaster Risk Assessment (see Directive A-2 of the DRM Policy OP-704).

The Project Team examines and adopts the DRM summary. The team remits the project risk reduction proposals from the DRMP to the engineering review by the sector expert or the independent engineer during project analysis or due diligence, and the financial protection proposals to the insurance review (if this is performed). The potential exacerbation of risks for the environment and population and the proposed risk preparedness or mitigation measures are included in the Environmental and Social Management Report (ESMR), and are reviewed by the ESG expert or environmental consultant. The results of these analyses are reflected in the general risk analysis for the project. Regarding the project implementation, monitoring and evaluation phases, the project team identifies and supervises the DRM approaches being applied by the project executing agency.

Climate change adaptation specialists in INE/CCS may be consulted for information regarding the influence of climate change on existing and new natural hazard risks. If the project requires modification or adjustments to increase its resilience to climate change, consider (i) the possibility of classification as an adaptation project and (ii) additional financing options. Please consult the INE/CCS adaptation group for guidance.

## Disaster Summary

Details

The project is classified as moderate disaster risk because of the likely impact of at least one of the natural hazards is average.

Actions



## Safeguard Screening Form

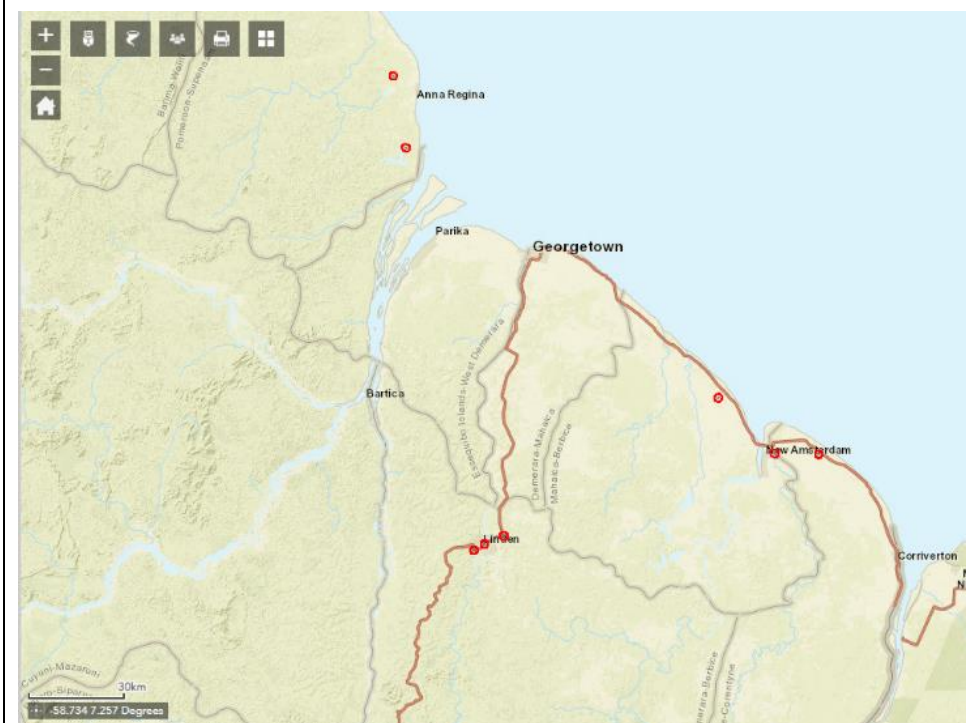
Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s).  
Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and  
Safeguard Screening Form to ESR.

<b>Environmental and Social Strategy (ESS)</b>	
<b>Operation Name</b>	Guyana Utility Scale Solar Photovoltaic Program
<b>Operation Number</b>	GY-G1007
<b>Prepared by</b>	Andrea Gaviano (VPS/ESG), and Luciano Bornholdt (CJA/ESG)
<b>Operation Details</b>	
<b>IDB Sector</b>	INE/ENE
<b>Type of Operation</b>	IGR
<b>Environmental and Social Classification</b>	B
<b>Disaster Risk Rating</b>	Moderate
<b>Beneficiary</b>	Cooperative Republic of Guyana
<b>Executing Agency</b>	Guyana Power and Light Inc. (GPL)
<b>IDB Loan US\$ (and total project cost)</b>	\$US 82M (total \$US 85M)
<b>Applicable Policies/Directives</b>	OP-703 (B.2, B.3, B.4, B.5, B.6, B.7, B.9, B.10, B.11, B.17); OP-704; OP-761; OP-102. To Be Defined (TBD) during due diligence: OP-765, OP-710
<b>Operation Description</b>	
<p>The overall Project is expected to consist of 33MWp of Solar Photovoltaic (PV) in three different areas, as follows:</p> <ol style="list-style-type: none"> <li>1. 15MWp with a 15MW, 1hr Battery Energy Storage System (BESS) in the Linden Isolated Power System (LIS),</li> <li>2. 8MWp with an 8MW, 1hr BESS in the Essequibo Coast Isolated Power System (EIS), and</li> <li>3. 10MWp in the Demerara-Berbice Interconnected System (DBIS)</li> </ol> <p>Each area will be comprised of more than one PV site. The Linden component is currently expected to consist of three project sites, the following being the more likely options as a result of screening: Block 37 (in the vicinity of Bamia) and Retrieve on the Makenzie side of the Demerara River; and Dacoura on the Wismar side of the Demerara River are the most likely possibilities. Subject to constraints in available land size, each site will have a 5MWp Solar PV Farm. The Essequibo Coast component of the project will likely be split into two sites with 3.6MWp to be installed at Lima Sands, and 4.4MWp to be installed at Onderneeming. The DBIS component will likely consist of three sites: 4MWp at Trafalgar on the West Coast of Berbice; and 3MWp each at Prospect and Hampshire on the East Coast of Berbice. Each farm will interconnect at the 13.8kV Primary Distribution level to either a nearby 13.8kV Load Distribution Feeder, or to the 13.8kV Busbar at a nearby 69kV/13.8kV Load Substation.</p> <p>See Figure 1 and Appendix 1 for maps of project locations.</p> <p>Although the final locations have not been defined apart from the sample projects listed below, it should be noted that the location of the solar plants has been selected by GPL to be near existing substations in order to minimize the need for new transmission lines and access roads. As part of the information provided by GPL up to now, it is understood that GPL has already undertaken an analysis of the alternative sites and the ones proposed are the only options available with an acceptable level</p>	

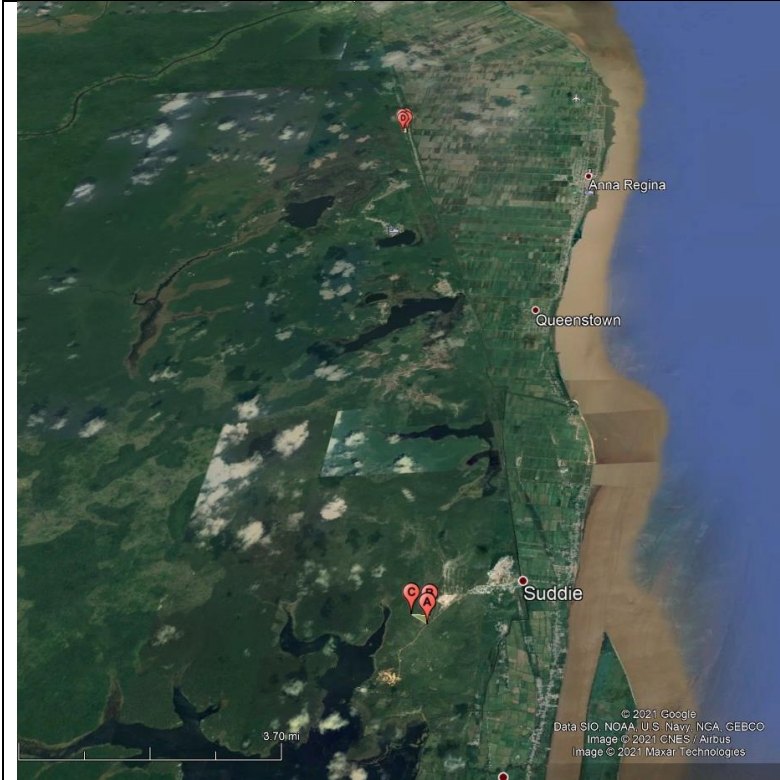
of potential negative impacts (which will be further documented within the ESIA study during the preparation stage).

Eight projects are currently foreseen under the program: three sites (Prospect, Hampshire and Trafalgar) are located in vacant agricultural fields owned by the government to avoid land acquisition; two sites are located in former mining sites (Dacoura and Retrieve); three sites are located on vegetated areas (Block 37, Lima Sands and Onderneeming) being the only feasible technical option for the respective areas. Additional information is provided in the following section on Key Potential ESHS Risks and Impacts. Identification of possible alternatives has taken into account any formal and/or informal use of land and resources. Due diligence will verify that indeed there is no informal occupation of land or conflicting uses of land and/or resources, otherwise adequate instruments will be developed.

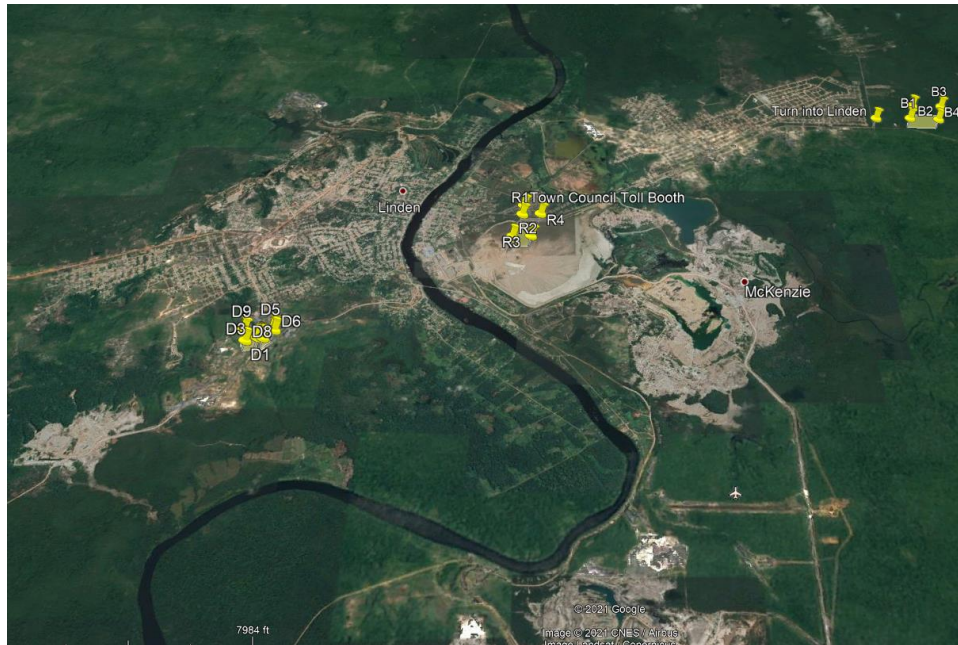
*Figure 1. Project locations*



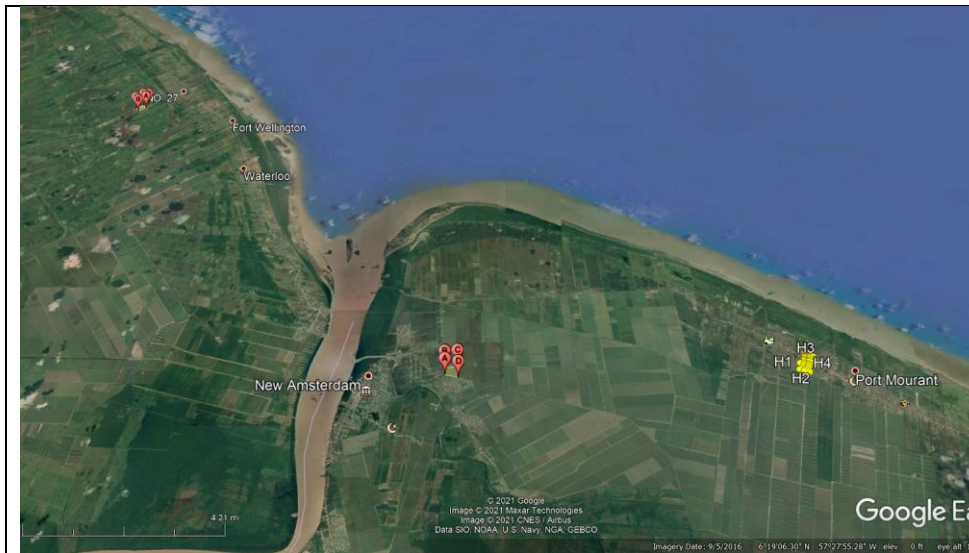




**Essequibo Coast sites**



**Linden sites**



### Berbice sites

Since the program is a Multiple Works operation, a representative sample has been preliminarily identified. The identification of the sample has followed three criteria: (i) representing more than the 30% of the investment (about 50%); (ii) representativeness of the technical features of the project; (iii) representativeness of the most significant expected socio-environmental risks and impacts associated with the Multiple Work program.

The representative sample will include the following sites:

- Block 37 (Linden-Soesdyke Highway, Region 10)
- Retrieve (Linden, Region 10)
- Lima Sands (Essequibo Coast, Region 2)
- Prospect (East Canje Berbice, Region 6)

### Key Potential ESHS<sup>1</sup> Risks and Impacts

It is foreseen that the Operation will be classified as Category B, based on the information currently available and in accordance with IDB's Policy OP-703 due to the expected short-term and localized negative impacts of the proposed interventions.

For the solar plants, key potential ESHS risks and impacts related to the construction of the project are mainly related to land clearing and grading activities. It is important to note that the solar plants will be located on government land and no land acquisition is expected. Furthermore, according to the information currently available, site selection would have avoided involuntary resettlement, as well as intervention on indigenous people territories and protected areas; these aspects will be reconfirmed during the preparation phase within the E&S studies foreseen.

Impacts to biodiversity are foreseen at some solar sites, especially Block 37 (35 acres), Lima Sands (10 acres) and Onderneeming (15 acres) that are located on dense vegetated areas, which could not have been repositioned due to technical constrains and therefore will need specific mitigation measures and environmental offsetting. Even though the sites do not overlap with any national protected areas or international key biodiversity areas, the project's area of influence may include the presence of endangered/vulnerable species. According to preliminary screening information, potential

<sup>1</sup> Environment, Social, Health and Safety.

presence of endangered species may include the bird *Sporophila maximiliani* (Great-billed Seed-finch), the mammal *Pteronura brasiliensis* (Giant Otter) and the fish *Anguilla rostrata* (American Eel) along with other near-threatened species. Baseline studies will identify expected types of vegetation and biomes. During due diligence it will be verified that impacts to natural habitats will be avoided, mitigated and/or compensated, as well as conversion and/or degradation of critical natural habitats is not envisaged (excluded from financing). Other impacts that may be caused during construction are related to traffic, waste and occupational and community health and safety. During the operational stage of the solar projects, key potential impacts may be related to erosion and waste disposal.

On the social side preliminary data indicates that none of the sample projects are located on Indigenous People (IP) territories nor will have expected negative impacts on Indigenous Peoples, however, these will be reconfirmed during the ESA, and projects with significant potential negative impacts on Indigenous Peoples will be excluded from this operation. Only projects with minimal negative impacts on Indigenous Peoples (and FPIC – Free, Prior and Informed Consent process applied if needed) and which have them as direct beneficiaries could be eligible for finance under the Multiple Works program.

Environmental and social liabilities may also exist and these will be identified during the preparation stage, such as pre-existing soil contamination (especially at locations with previous mining use) and potential land claims. According with the information provided by GPL at this point, to be confirmed during due diligence, all sites selected are unoccupied State lands.

Regarding transmission lines, key ESHS impacts may be related to the potential economic displacement (to be confirmed during due diligence). According to preliminary selection of the site presented in GPL's Concept note and discussions with the executing agency (to be further verified in the ESIA studies), it is preliminary noted that the proposed locations of new transmission lines to connect the solar plants to the existing grid seem to be well placed along existing road paths, which should reduce impacts related to construction of transmission lines such as vegetation clearing, land acquisition and construction of access roads. Other impacts that may be caused during construction of transmission lines are related to traffic, waste and occupational and community health and safety. During the operation stage of the transmission lines, the main potential impact may be related to bird and bat collision.

Battery storage facilities and upgrade of substations (if needed) would mainly have potential impacts related to economic displacement during construction and hazardous waste management during operations. Project siting of these facilities will be important to avoid impacts to the biodiversity and nearby communities. Other ancillary facilities such as access roads will be determined during the preparation stage of the project when more information on the sample projects design will be available.

The expected disaster risk type 1 for this Operation is moderate, particularly associated with flooding. It is not expected that the Operation will exacerbate disaster risk type 2. The E&S studies to be carried out during preparation will include a qualitative disaster risk analysis as well as emergency and contingency measures. Flood risk assessments will be developed along with the technical studies for the Program and these will include analysis of potential impacts to the project developments and will provide design measures to prevent and mitigate potential risks and impacts.

During due diligence, contextual risks and challenges during COVID pandemic will be assessed in relation to institutional capacity and coordination at different levels during implementation of the Program. In addition, specific procedures for meaningful consultations during the COVID-19 pandemic will be followed by GPL.

## 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 Beneficiary is required to develop the following documents:

- **Environmental and Social Framework (ESMF)**, for the overall Program, aimed at providing guidance and requirements for the development of needed E&S studies and management plans for the subprojects not included in the representative sample;
- **Environmental and Social Analysis (ESA) and Environmental and Social Management Plan (ESMP)**, for the representative sample, with the objective of identifying and managing the environmental and social impacts and risks, including an analysis on natural disaster risk scenarios;
- **Consultation Plan and Consultation report** of the meaningful consultation events with affected people and other interested stakeholders.

The ESMF, ESA, ESMP and consultation plan will be disclosed prior to the analysis mission through the IDB website and the EA website.

The ESMF will include, but not be limited to, the following key elements:

- Applicable environmental and social legal framework;
- Guidelines for the development of future ESAs and ESMPs of the subprojects of the Program;
- Guidelines for the identification and management of potential impacts of program activities and any associated facilities;
- Establishing the exclusion list for the activities to be prohibited during the program implementation;
- Identify the environmental and social studies/licenses/permits required by both national environmental legislation and the IDB's Safeguard Policies.

The ESA will include, but not be limited to, the following key elements:

- Project description of the representative sample;
- Analysis of the alternatives;
- Institutional and Legal Framework;
- Diagnostic of Area of Influence (direct and indirect), including environmental and socio-economic aspects;
- Identification of Stakeholders;
- Gender analysis;
- Natural disaster risk analysis, with a special focus on flooding;
- Identify any social and environmental liabilities of pre-existing conditions related to the development of the project;
- Assessment of potential risks from the supply chain (e.g. procurement of solar panels in relation to labor and working conditions)
- Evaluation of potential Environmental and Social Impacts for the construction, operation and decommissioning phases of the Project, with special focus on vulnerable people, Indigenous Peoples and territories, involuntary resettlement, protected areas, cultural sites, natural habitats, critical habitats and proposed mitigation measures;
- Identify whether the activities, materials, equipment or services financed by the operation would impact or benefit indigenous communities, and if so, prepare a socio-cultural analysis

to comply with the IDB Operational Policy on Indigenous Peoples (OP-765). Identify whether a Free, Prior and Informed Consent (FPIC) process will be necessary.

- Identify whether the project implementation will cause involuntary resettlement and if so, prepare and do consultation on a Resettlement Plan compliant with the IDB Operational Policy on Involuntary Resettlement (OP-710).

The ESMP will include, but not be limited to, the following key elements:

- Description of the mitigation measures for the negative impacts during construction, operation and decommissioning to address the identified potential impacts in the ESA;
- Measures for management of water supply, effluents, disposal of hazardous and non-hazardous waste, air pollution and noise, biodiversity impacts, impacts on vulnerable people.
- Measures to manage occupational and community health and safety;
- Measure to manage applicable natural disaster risks and emergency and contingency measures;
- Applicable ESHS requirements for suppliers (e.g. procurement of solar panels) in relation to labor and working conditions
- In case of people or families occupying the land where the systems will be constructed, the elaboration of a Resettlement and Compensation Plan will be included in the ESMP, if needed.
- In case impacts of economic displacement are identified in the ESA, a Livelihood Restoration Plan will be included in the ESMP.
- 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.
- Stakeholder engagement plan and community grievance mechanism.
- Chance find procedure for any archaeological findings during construction.

The Consultation Plan and Consultation report: meaningful consultations will include interested parties, paying special attention to the affected parties and, if relevant, Indigenous People. Following Directive B.6 of the OP-703, the main objective of the consultations will be to inform, collect comments and adjust the ESA and ESMP. The procedure for the consultations should include, as a minimum:

- the identification of key actors involved (including interested parties, and potentially affected population);
- a brief description of the Operation;
- a characterization of the potential negative social and environmental impacts;
- an explanation of the environmental and social management foreseen;
- a space to resolve questions, concerns and comments of the population;
- an analysis of the issues raised by the local people in order to identify those areas that are of greatest concern and based on these determine the need to make adjustments to the ESMP;
- the documentation of the consultations carried out including the various issues raised by the groups of actors involved;
- procedures for the publication of the consultation reports carried out to have transparency about this process.
- specific procedures for meaningful consultations during the COVID-19 pandemic. These should include all measures put in place by the GoG, and if necessary carried out through a virtual platform, while still characterizing as meaningful.
- If the ESA identifies significant negative impacts on IPs, the consultation process will include a good faith negotiation process and an agreement, to the extent required by IDB Operational Policy OP-765.
- If involuntary resettlement is identified during the impact assessment process, the Resettlement Plan prepared will have its own dedicated consultation process for the affected people,



Additionally, requirements will be included in the Operational Manual to ensure that ESHS aspects are included in the contracts/agreements of main contractors and primary suppliers before commencement of any construction works and during project execution as applicable. ESHS requirements should reference to IDB E&S safeguards polices and a clear statement to avoid child labor and forced labor should be made.

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

To be confirmed during preparation. Opportunities could exist in creating training and job opportunities for women both in construction and operation of the facilities. To be further discussed with the executing agency.

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

See Table Annexed

### **Additional Appendices (if any)**

Appendix 1: Maps

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

Policies / Directives	Policy / Directive Applicable?	Rationale for applicability of Policy / Directive	Actions required during Preparation & Analysis
<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 ESMF, ESA and ESMP that will include the requirements of the local appraisal and permitting processes.
B.3 Screening and Classification	Yes	The Project is preliminary categorized as B based on the information currently available, due to the expected short-term and localized negative impacts of the proposed interventions	The categorization will be re-confirmed during the preparation phase when additional information on the E&S risks and impacts of the project will become available.
B.4 Other Risk Factors	Yes	Other risk factors may be associated with low institutional capacity to manage environmental and social matters (due to limited E&S personnel), and potential presence of environmental and social liabilities.	The Beneficiary will need to guarantee sufficient organizational capacity to adequately manage all the ESHS aspects of the various projects. The ESA and ESMP will cover any potential risks related to environmental and social liabilities, including potential risks from the supply chain (e.g. procurement of solar panels in relation to labor and working conditions – see also B.17).
B.5 Environmental Assessment and Plans Requirements	Yes	The development of the ESMF, ESA and ESMP is required along with a meaningful consultation process.	The Beneficiary is required to develop all necessary environmental and social studies.
B.5 Social Assessment and Plans Requirements (including Livelihood Restoration Plan <sup>2</sup> )	Yes		

<sup>2</sup> OP-703 applies when livelihood impacts are not significant and don't lead to physical displacement (see *Transitional Guidance in instruments for Physical Displacement, Economic Displacement and Economic Losses under OP-710 and OP-703* (TG-005) for more information)



B.6 Consultation	Yes	During the preparation phase, meaningful consultations will be held for representative sample projects and consultation plans will be included in the ESMP and ESMS. The ESMF will include required procedures for consultation on future projects.	During preparation, the Beneficiary will undertake consultation processes in 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 to be defined in the ESMF and ESMP.	The IDB and the Beneficiary will allocate sufficient resources for the supervision of the projects.
B.8 Transboundary Impacts	No	N/A	N/A
B.9 Natural Habitats	Yes	The Program might impact some biodiversity features, especially in relation to those sites located on vegetated areas.	During the preparation, specific mitigation measures and, when needed, environmental offsets will be defined. The operation will be designed to avoid significant impacts and degradation/conversion of critical natural habitats.
B.9 Invasive Species	No	The Program will not introduce invasive species	Invasive species will be excluded in case reforestation activities are required.
B.9 Cultural Sites	Yes	It is not expected that the Operation could impact cultural sites. There may be the possibility of chance finds during excavation activities.	During the preparation, impacts on cultural sites will be evaluated and specific measures will be implemented during construction (chance finds procedures). The operation will be designed to avoid impacts on cultural sites.
B.10 Hazardous Materials	Yes	Construction works and maintenance activities will include the use of hazardous materials such as oils and lubricants, chlorine, etc.	Specific procedures will be established in the ESMP 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 may generate environmental impacts associated	The Beneficiary shall include in the ESMP specific measures and procedures for both

		with civil works, air emissions and noise generated during construction and maintenance.	construction and operations for the prevention and reduction of pollution.
B.12 Projects Under Construction	No	The Program is not under construction	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	Main Contractors and Suppliers are yet to be identified by the Executing agencies. The ESHS requirements should be included in the contracts/agreements with main contractors and primary suppliers.	Requirements will be included in the Operational Manual to ensure that ESHS aspects are included in the contracts/agreements of main contractors and primary suppliers before commencement of any construction works and during project execution as applicable. ESHS requirements should reference to IDB E&S safeguards polices and a clear statement to avoid child labor and forced labor should be made.
<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 health and safety plan, Occupational health and safety plan)	Yes	Disaster risk management procedures should be included in the ESMP.	The Beneficiary will include in the ESMP an emergency and contingency management plan.
<b>OP-710 Operational Policy on Involuntary Resettlement</b>			
Resettlement Minimization	TBD	Involuntary resettlement is not expected; however, it will be verified	During preparation it will be identified if resettlement is necessary for the
Impoverishment Risk Analysis			

Resettlement Plan and/or Resettlement Framework Requirement		during the preparation phase when more information on the projects will be available.	Operation. If so, it will be properly assessed and managed in the ESMF, ESA and ESMP(RP).
Resettlement Plan Consultations			
Livelihood Restoration Program Requirement <sup>3</sup>			
Consent (Indigenous Peoples and other Rural Ethnic Minorities)			
<b>OP-765 Operational Policy on Indigenous Peoples</b>			
Sociocultural Evaluation Requirement	TBD	Impacts to indigenous people are not expected, however it will be verified during the preparation phase when more information on the projects will be available.	During preparation the applicability the OP-765 will be identified and if needed potential impacts to indigenous people will be properly assessed and managed in the ESMF, ESA and ESMP.
Good-faith Negotiations and proper documentation / agreements with Affected Indigenous Peoples			
Indigenous Peoples Compensation, and Development Plan and/or Framework Requirement			
Discrimination Issues			
Transborder Impacts			
Impacts on Isolated Indigenous Peoples			
<b>OP-761 Operational Policy on Gender Equality in Development</b>			
Consultation and effective participation of women and men	Yes	Women and men will 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.

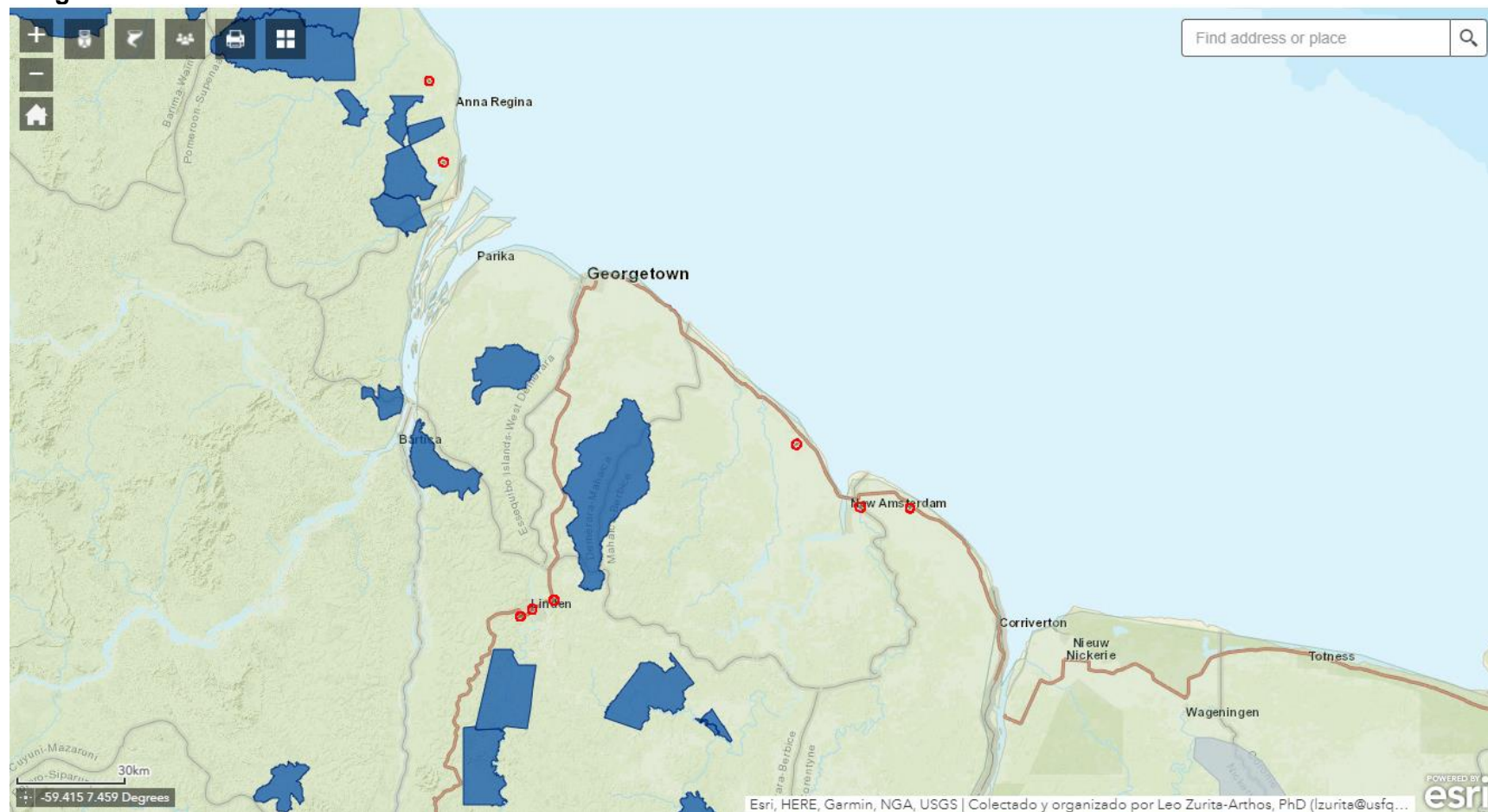
<sup>3</sup> OP-710 applies when livelihood impacts lead to physical displacement (see *Transitional Guidance in instruments for Physical Displacement, Economic Displacement and Economic Losses under OP-710 and OP-703 (TG-005)* for more information)

Application of safeguard and risk <sup>4</sup> analysis	TBD	The ESA will analyze the risks of the Project through a gender analysis, including regarding the presence of an external work force in the proximity of local communities.	The ESA will ensure that the Project does not include any unequal access to paid and unpaid activities. The ESA will ensure that there is an appropriate Code of Conduct for workers and any other mitigation measures necessary.
<b>OP-102 Access to Information Policy</b>			
Disclosure of relevant Environmental and Social Assessments Prior to Analysis Mission, QRR, OPC and submission of the operation for Board consideration	Yes	The ESMF, ESA and ESMP must be disclosed before analysis mission through the IDB web page and the Beneficiary's web page.	The IDB will publish all necessary environmental and social 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, including those relating to future projects, they will also be made available to the public.	This will be included as specific conditions of the Loan Agreement.

<sup>4</sup> Risks may include: (i) Unequal access to project benefits/ compensation measures, (ii) Men or women disproportionately affected due to gender factors, (iii) Non-compliance with applicable legislation related to equality between men and women, (iv) Increased risk of gender-based violence, including sexual exploitation, human trafficking and sexually transmitted diseases, and (v) Disregard of women's ownership rights.

### Appendix 1: Maps

#### Indigenous Territories

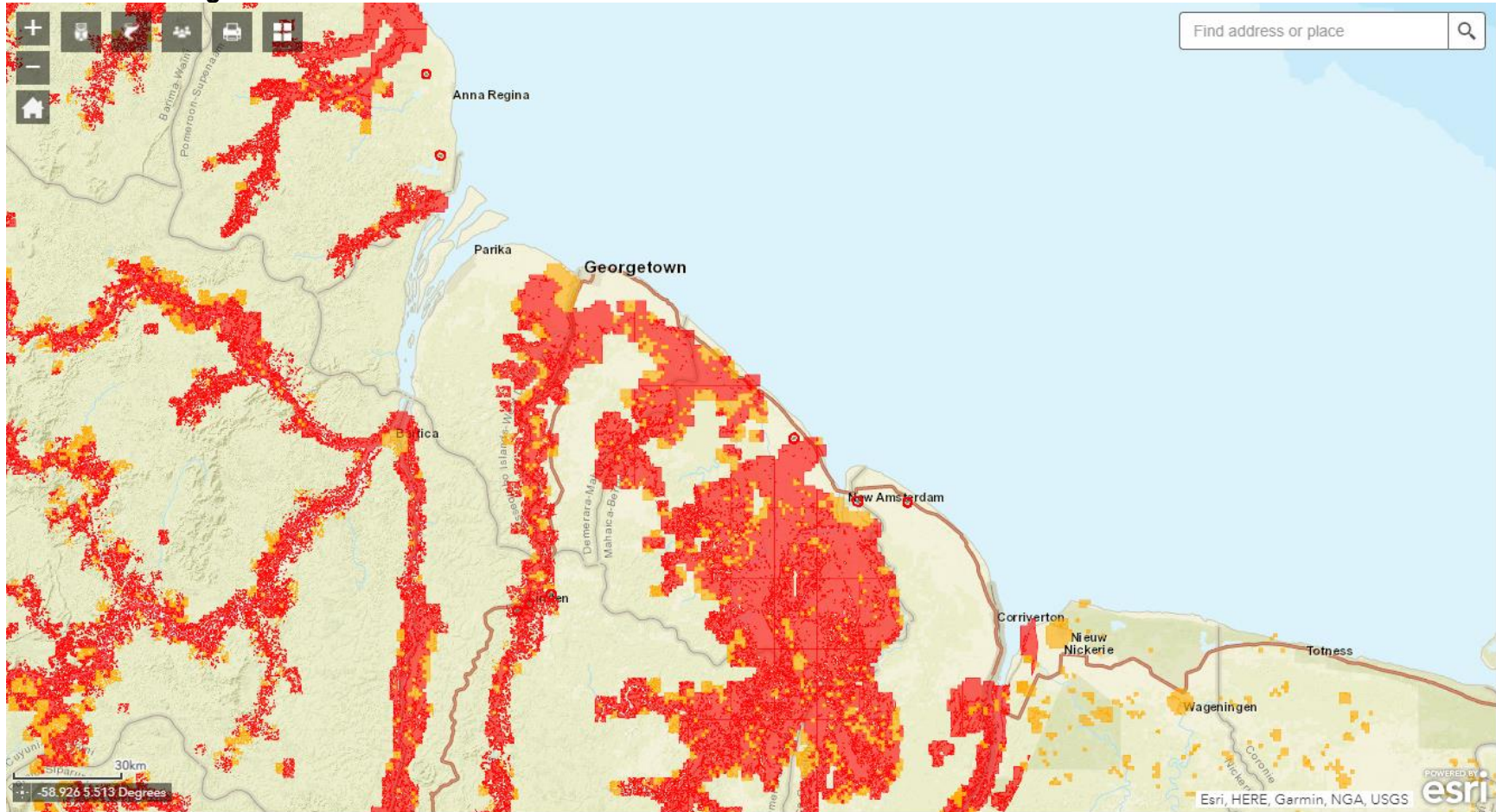


### Protected Areas and Key Biodiversity Areas





### Riverine Flooding hazard













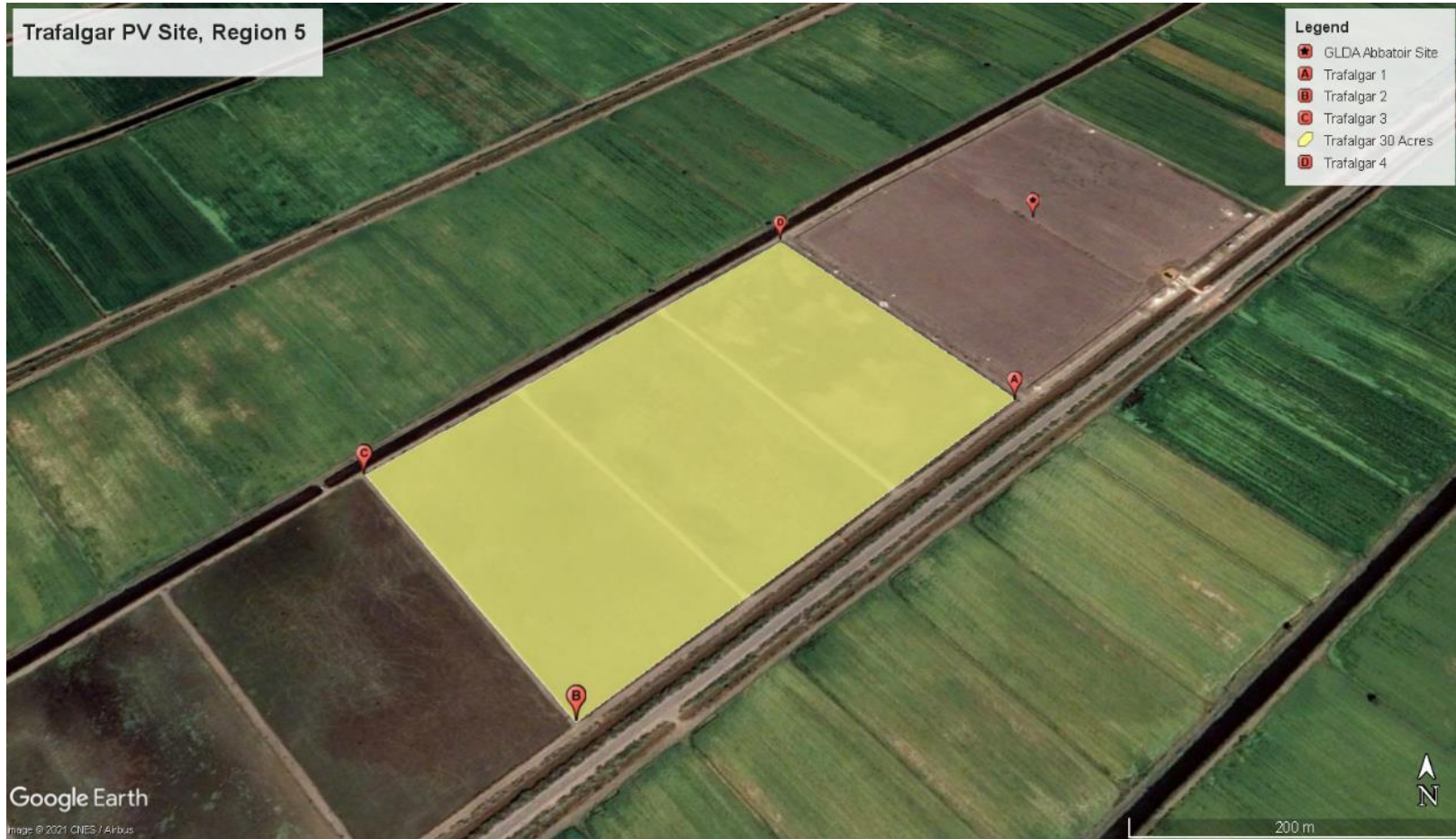






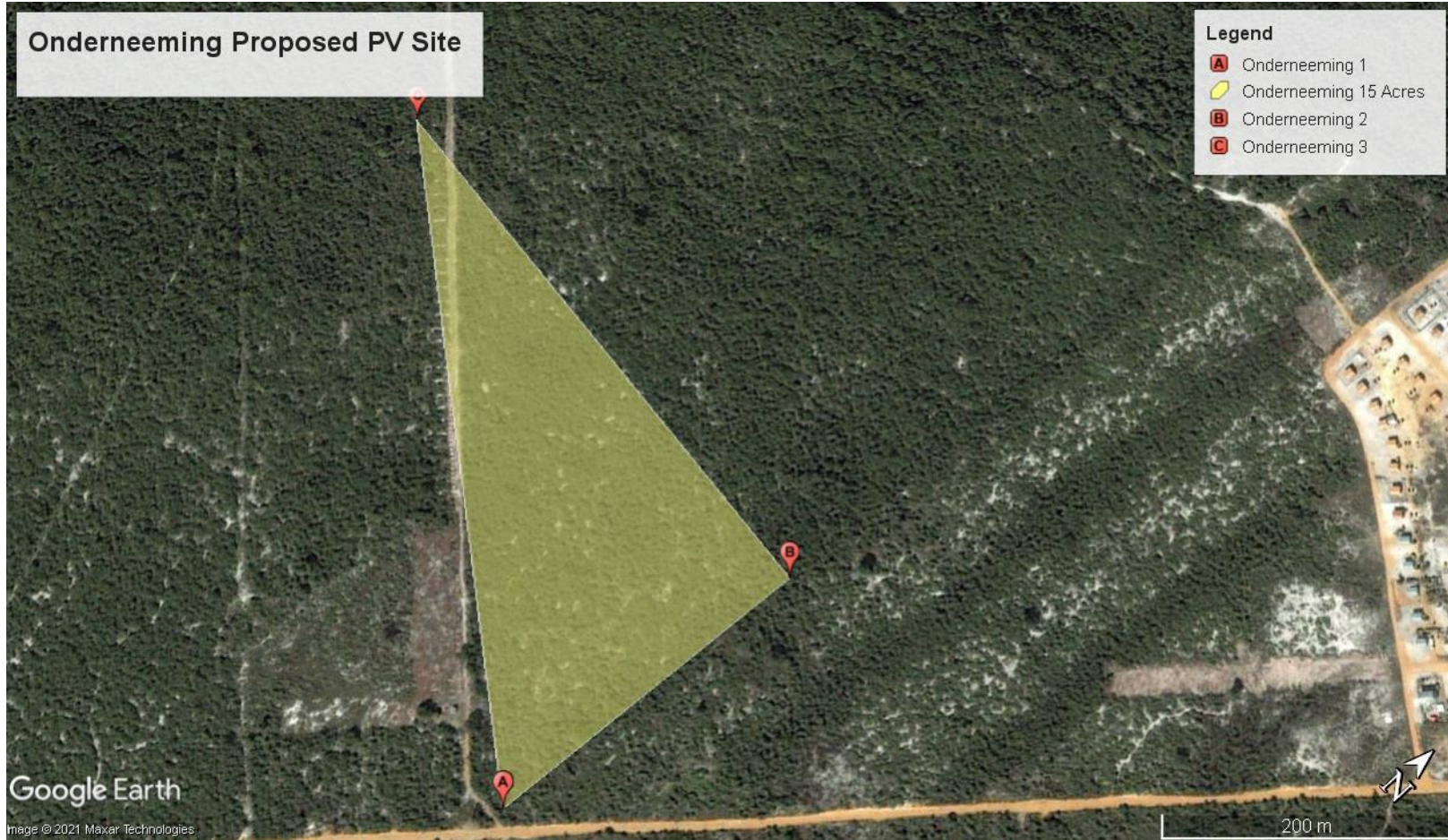














### INDEX OF COMPLETED AND PROPOSED SECTOR WORK

Area	Description of Works	Estimated Dates	References and Electronic Links
Technical Knowledge	The following document have been received by GPL: - Program Concept Note	July 2021	<a href="#">Concept Note</a>
Technical Documents	Result Matrix, detail Budget, disbursement plan, Risk Management (GRP), Program Operations Manual (POM), Annual Operational Plan (AOP), Procurement Plan (PA), Risk Matrix, initial PMR.	TBD	To be annexed at POD stage
Technical Cooperation – Operational Support	(GY-T1164) Renewable Energy Actions in the Energy Matrix in Guyana - Project Document and annexes	July 2021	<a href="#">TC Doc</a> Client Request <a href="#">Results Matrix</a> <a href="#">Procurement Plan</a> <a href="#">Terms of Reference</a>
Technical studies	1. Electrical Interconnection and Battery Optimization Assessments for the Berbice, Linden and Essequibo PV Projects. 2. Topographic Surveys, Geotechnical Analysis, and Flood Risk Assessments for all project sites.	Nov 2021	To be annexed at POD stage
Economic analysis	Cost Benefit Analysis for the Solar power plants.	September 2021	To be annexed at POD stage
Gender and Diversity	Gender and Diversity Assessment for the identification of program interventions in the program areas	September 2021	To be annexed at POD stage
Environmental and Social Safeguards	Environmental and Social Assessment (ESA) and of an Environmental and Social Management Plan (ESMP) for the representative sample; and an Environmental and Social Management Framework (ESMF) for the full project.	October 2021	To be annexed at POD stage
Institutional Analysis	Preparation of the Institutional Capacity assessment (ICAS) for GPL as executing agency	October 2021	To be annexed at POD stage
Geographic Spread of Project Sites	Maps of the project sites	July 2021	To be annexed at POD stage

**Resources**

Staff Time						# of days	FTEs
Team Leader						60	0.293
Alternate team Leader I						30	0.146
ORP Specialist						15	0.073
ORP Specialist 2						5	0.024
Operations Analyst (INE/ENE)						50	0.244
Operation Analyst (CCB/CGY)						50	0.244
Project Assistant□						20	0.098
Attorney						10	0.049
ESG Primary Team Member						20	0.098
CSC Specialist						10	0.049
Fiduciary Financial Management Specialist						10	0.049
Procurement Specialist						10	0.049
Team Member - Supervision Support						40	0.195
<b>Total</b>						<b>330</b>	<b>1.610</b>
Per Division Contribution						% contribution	
ENE/CGY						27%	
INE/ENE						27%	
CSD/CCS						3%	
VPS/ESG						6%	
VPC/FMP						6%	
CCB/CGY						21%	
ORP/REM						2%	
ORP/GCM						5%	
LEG/SGO						3%	
<b>Total</b>						<b>100%</b>	
Missions	Staff / days*	Hotel	Per Diem	Tickets	Cost US\$		
Identification Mission					-		
Analysis Mission	2 persons/2 days	880.00	432.00	1,600.00	2,912.00		
Management Workshop I (Taller Gestion I)	4 persons/2 días	1,760.00	864.00	1,600.00	4,224.00		
Negotiation Mission	4 persons/2 días	1,760.00	864.00	3,200.00	5,824.00		
Management Workshop II (Taller Gestion II)	4 persona/2 días	1,760.00	864.00	3,200.00	5,824.00		
<b>Sub-total</b>						<b>18,784.00</b>	
Consulting services						Cost US\$	
Development of Economic Analysis (such as a Cost-Benefit Analysis) to be financed by GY-T1164						40,000	
Elaboration of the Program Operation Manual to be financed by GY-T1164						60,000	
gender analysis to be financed by GY-T1164						60,000	
<b>Sub-total</b>						<b>160,000.00</b>	
<b>TOTAL**</b>						<b>\$ 178,784.00</b>	

