DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

COOPERATIVE REPUBLIC OF GUYANA

GUYANA UTILITY SCALE SOLAR PHOTOVOLTAIC PROGRAM (GUYSOL)

(GY-G1007)

NON-REIMBURSABLE INVESTMENT FINANCING PROPOSAL

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ABBREVIATIONS	
AOP	Annual Operational Plan
BESS	Battery Energy Storage System
D&E	Development and Expansion Plan
DBIS	Demerara-Berbice Interconnected System
DG	Distributed Generation
EA	Executing Agency
ESA	Environmental and Social Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Management Report
GDP	Gross Domestic Product
GEA	Guyana Energy Agency
GoG	Government of Guyana
GPL	Guyana Power and Light Incorporated
GWh	Gigawatt-hour
HECI	Hinterland Electrification Company Incorporated
IPP	Independent Power Producer
kWh	Kilo-Watt hour
LAC	Latin America and The Caribbean
LCDS	Low Carbon Development Strategy
LECI	Linden Electricity Company
m^2	square meter
MW	Megawatts
NDC	Nationally Determined Contribution
NGG	Norwegian Fund for Guyana
NORAD	Norwegian Agency for Development Cooperation
PEU	Program Execution Unit
PEP	Pluriannual Execution Plan
POM	Program Operation Manual
PP	Procurement Plan
PV	Photovoltaic
RE	Renewable Energy
SJWD	Solar Job and Workforce Development
UNFCCC	United Nations Framework Convention on Climate Change

PROJECT SUMMARY
COOPERATIVE REPUBLIC OF GUYANA
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<tr><td rowspan="2">NORAD</td><td rowspan="2">83,300,000[a]</td><td rowspan="2">100%</td><td>Supervision and Inspection Fee:</td><td>N/A</td></tr>
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<tr><td rowspan="2">Total:</td><td rowspan="2">83,300,000</td><td rowspan="2">100%</td><td>Grant Fee:</td><td>US$1,600,000</td></tr>
<tr><td>Currency of Approval:</td><td>US Dollars ($)</td></tr>
<tr><th colspan="5">Project at a Glance</th></tr>
<tr><td colspan="5">Project Objective/Description: The general objective of the program is to support the diversification of Guyana's energy matrix towards the use of climate-resilient renewable energy sources in the electricity generation matrix. The specific objectives of the program are to: (i) avoid CO_2 emissions with the development of solar Photovoltaic (PV) generation plants; (ii) lower the cost of electricity generation while supporting the country´s transition towards renewable energy-based generation; and (iii) improve the operation and management of the isolated systems of Essequibo and Linden and develop local skills for services related to solar PV generation systems.</td></tr>
<tr><td colspan="5">Special Contractual Clauses prior to the first disbursement: The beneficiary will provide evidence to the satisfaction of the Bank of: (i) the entry into force of the Program Operation Manual (POM) (OEL#4) according to the terms and conditions previously agreed with the Bank; (ii) the entry into force of a subsidiary agreement between the Ministry of Finance (MoF) and Guyana Power and Light Inc. (GPL) establishing the obligations of the parties for the execution of the program and the manner in which the resources will be transferred; and (iii) the establishment of a Program Execution Unit (PEU) within GPL as well as the designation or appointment of its key personnel, that is, a program coordinator, a procurement specialist, a procurement assistant, a financial specialist, an executive assistant, an environmental management specialist, a social management specialist and a monitoring and evaluation officer (¶3.5).
Special Contractual Clauses of execution: Prior to execution of activities under Component 1, the beneficiary will provide evidence to the satisfaction of the Bank of the designation of additional key technical personnel of the PEU, that is, three electrical engineers. Prior to the contract award for the projects in the Linden area, the beneficiary will provide evidence to the satisfaction of the Bank, of the entry into force of an operational agreement between GPL and Linden Electricity Company Incorporated (LECI) establishing their respective roles and responsibilities for the implementation of the activities in Linden (¶3.6).
See environmental and social special contractual conditions in Annex B of the Environmental and Social Management Report (ESMR).</td></tr>
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[a] As of December 31st, 2021, the available balance on the Norwegian Grant to Guyana Fund was US$83,646,972. This amount is the result of the initial 2015 contribution by Norway in the amount of US$80,035,000, as increased by the income from investments accrued in the fund over seven years, minus the resources corresponding to the accompanying technical cooperation operation ATN/NG-19116-GY (of US$1,500,000), approved in 2021. To cover for the annual audit costs of the fund, as required by the Letter Agreement with the Government of Norway, and for other account expenses, a resource buffer is left in the account.

[b] The funds will be administered by the Bank through a Project Specific Grant (PSG) according to Document SC-114. To assist in the defrayment of the administrative costs in relation to the contribution, the Bank will charge and retain a nonrefundable fee in the amount of US$ 1.6 million, which will be distributed to the Bank departments that have supported the preparation, execution, and monitoring of the project.

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

[d] GE (Gender Equality) and DI (Diversity); CC (Climate Change) and ES (Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. PROJECT DESCRIPTION AND RESULTS MONITORING

A. Background, Problem Addressed, and Justification

1.1 **Macroeconomic data and context.** With an area of 216,000 square kilometers (km^2), Guyana is the largest country within the Caribbean Community and Common Market. Close to 80% of its landmass is forested[1] and known to be one of the largest virgin tropical rainforests in South America. Guyana has a relatively small population – approximately 787,000 people - with 90 % concentrated in and around Georgetown and along the coastline, whereas the rural areas in the interior (Hinterlands) are sparsely populated.

1.2 The macroeconomy of this country was shaken up when Guyana became one of the newest petroleum-producing nations in the world. Although traces of offshore oil were found as early as the 1700s, it was not until 2015 that drilling, and exploration began. Since then, with the discovery of 23 oil wells, Guyana's population has seen its Gross Domestic Product (GDP) per capita boom to US$7,300 in 2020 from US$3,800 in 2010.[2] This places Guyana 11th out of 26 countries in Latin America and the Caribbean (LAC) in GDP per capita.

1.3 The new oil economy means that oil and gas now represent 36% of GDP in 2020, followed by services at 25%, agriculture at 18% and gold production at 7%. Oil production is expected to drive GDP growth in the medium-term, with an average annual growth rate of 21% between 2020-2026.[3] The current estimate of recoverable petroleum resources positions Guyana in the top 20 worldwide in proven oil crude reserves.[4]

1.4 Nevertheless, local oil production has not meant readily available, cheaper, reliable energy for local consumption. Guyana continues to be dependent on fossil fuels import, which represents 92% of its energy needs. The power and transport sectors consume 70% of imported petroleum products. When oil prices rose significantly in 2010, the volume of oil imports in Guyana increased by 4% while the value of imports increased by 33%, reaching US$395 million that year. Then, in 2012 the value of oil imports rose, an additional 45% (US$573 million), after only increasing the volume of oil imports by 10%. Similarly, with the oil price crash in 2015, the import volume of oil increased by 21% while the value of imports declined by 36% to US$367 million. The most recent price crunch was in 2020 when import volumes increased by 16% but the value of imports fell by 22% to US$395 million.[5] For a country like Guyana that engages more and more in the trade of oil, price shocks, and volatility bring disruption and uncertainty to the security and cost of energy supply and are transmitted widely throughout the macroeconomy, impacting employment, inflation, trade balance, public accounts, and exchange rates.

1.5 It is widely recognized that an energy transition towards cleaner, greener, less volatile and indigenous sources of energy can mitigate the impact of commodity

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1 Inter-American Development Bank (2020) Latin America and the Caribbean Forests in the 2020s: Trends, Challenges, and Opportunities.
2 International Monetary Fund World Energy Outlook (IMF-WEO) 04/2021.
3 IMF-WEO April 2021.
4 International Monetary Fund (IMF), OpenOil, Wood McKenzie.
5 IMF, World Economic Outlook, April 2021.

price spikes.[6] As Guyana benefits from the fiscal windfall of the oil boom, the Government of Guyana (GoG) is aware that attention must also be given to the sustainability of its natural resources and the diversification of its energy matrix towards cleaner sources for power generation.

1.6 **Low carbon strategy and renewables in Guyana.** Recognizing the significance of natural resources to the sustainability of Guyana, in 2009, the Kingdom of Norway signed an agreement with Guyana to maintain the integrity of its forest, committing to pay US$250 million over the course of 5 years for Guyana's performance on Reducing Emissions from Deforestation and Forest Degradation's UNFCCC framework.[7] Building on this agreement, the GoG established that same year an integrated Low Carbon Development Strategy (LCDS), identifying investments in high-potential low carbon sectors to deliver sustainable economic development, avoid deforestation, and address climate change. The LCDS came at a pivotal point in the country's economic development, reflecting critical tradeoffs in the optimal rate of resource extraction as well as the sustainability of resource extraction. The LCDS's update draft in 2021, supported by Guyana's Nationally Determined Contribution (NDC),[8] provides a catalytic boost for the entrance of renewables, guides public investment towards low-carbon and climate-resiliency while diversifying the electricity generation matrix towards its target of 74% Renewable Energy (RE) by 2040.

1.7 **Renewable energy potential in Guyana.** Estimates showcase hydro, wind, and solar resources to be vast in the country. For example, the mean solar radiation in Guyana is 1,800 kWh/m^2/year.[9] The GoG has started to shape the diversification of its matrix and the transition to a cleaner sector by financing projects that support solar Photovoltaic (PV) systems in government buildings, small-scale solar PV plants,[10] and mini-hydro and micro-solar PV grid systems to provide energy access in the Hinterlands. Guyana Power and Light Inc. (GPL) has also moved towards the promotion of distributed generation opening the grid to independent power producers under 10 Megawatt (MWs) of capacity.[11] These activities mark an important step by the GoG in investments in the energy transition, aligning short-term priorities with long-term climate and sustainable development objectives.

1.8 **Institutional structure of the energy sector.** The governance of the energy sector in Guyana starts with the Office of the Prime Minister, as the head of the electricity sector and whose mandate is articulated in the Electricity Sector Reform Act 1999 (ESRA) and its amendment in 2010.[12] The Ministry of Public 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 operates the Demerara-Berbice Interconnected System (DBIS), the Essequibo Coast System, as well as other off-grid systems like the Bartica System. GPL operations comprise

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6 International Energy Agency World Energy Outlook 2021.

7 Framework created by the UNFCCC Conference of the Parties (COP) to guide activities in the forest sector that reduces emissions from deforestation and forest degradation, as well as the sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries.

8 First Guyana's Revised NDC.

9 Guyana Energy Agency.

10 ATN 4676/BL-GY,4676/BL-GY-1,4676/BL-GY-2 supports PV investment in Lethem, Bartica and Mahdia executed by the Guyana Energy Agency.

11 2019 Order Made Under the ESRA 1999.

12 Electricity Sector Reform Act – 1999: Electricity Sector Reform Act – 2010 Amendment.

generation, transmission, and distribution activities. Hinterland Electrification Company Inc. (HECI), is a state-owned company composed of all hinterland public electric utilities operating isolated systems including the Linden Electricity Company Inc (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 the utilization of indigenous owned RE resources. Finally, the Environmental Protection Agency oversees granting socio-environmental permits among other responsibilities.

1.9 **The electricity sector in Guyana.** The electricity grid in Guyana is largely managed by GPL - a vertically integrated state-owned power utility -that owns, operates, and manages the DBIS which is the main electricity grid in the country. GPL also operates the Essequibo Coast Isolated System. Both systems run mainly on fossil fuels[13] and provide electricity to about 85% of the total population of the country. The total available capacity of the DBIS today is approximately 204.1MW. Approximately 57.6MW of the generation capacity of the DBIS has been in operation for over 24 years, surpassing the lifespan threshold of the units, thus due for decommissioning. The Essequibo Coast Isolated System has 12MW of installed capacity, of which 7.2MW are also beyond their lifespan threshold.[14] Furthermore, the Essequibo System has challenges such as the lack of system monitoring infrastructure and the total reliance on the Anna Regina Power Plant to serve the growing system demand, which has direct implications on overall system reliability and resiliency. The Berbice system, although interconnected with the DBIS, is more than 100 km away from the largest power stations (closer to Georgetown) and is supplied via a single 69 kV transmission line, which in the event of failures in the DBIS, the area relies primarily on the Canefield power plant (5MW) for its energy needs, contributing to power deficits within the region. 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 (¶1.13).

1.10 **GPL's Development and Expansion Plan (D&E).** In light of the growth projections of this booming economy, the GoG recognizes the importance of energy security, providing reliable and clean electricity to replace and fortify aging and limited generation systems. The utility has developed an 5-year electricity expansion plan, that forecasts a tremendous surge in customer growth and electricity demand driven by economic growth. The D&E projects an increase in its customer base from 205,814 in 2020 to potentially 265,667 by the end of 2025, an increase in energy demand from 902 Gigawatts-hour (GWh) in 2020 to 2,778GWh in 2025, and in peak power demand from 134MW to 453MW in 2025, representing a 208% increase in energy demand. The plan seeks to satisfy this anticipated growth in the demand for electricity services, stemming in part from increased economic activities and opportunities streaming from the emerging oil and gas sector, and to provide services to un-served areas. The D&E indicates that Guyana requires different power generation technologies to generate electricity in the most

[13] The breakdown of fuel for generation capacity in 2020 is 80% Heavy Fuel Oil (HFO) and 20% Light Fuel Oil (LFO).

[14] Aged generation units have reduced level of reliability and lower output. Continued used of these units has an elevated risk of major mechanical and electrical failure.

economical and reliable way while transitioning towards maximum RE utilization by 2040, prioritizing the introduction of solar PV.[15] The D&E also recognizes the need to improve system operation via digitalization and modernization, and to improve local capacities.

1.11 GPL intends to increase the generation capacity from 204MW in 2021 to 572MW in 2025 for the DBIS and from 14MW in 2021 to 23.8MW in the Essequibo System.[16] The demand growth presents the opportunity to diversify the electricity generation mix with the introduction of RE technology versus "business-as-usual" that uses generators powered by fossil fuels.

1.12 **Linden System.** As an isolated system, the LECI, a subsidiary of the state-owned HECI, operates the Linden system. LECI purchases electricity from Bosai,[17] a private mining company, 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 5,292 customers and also sells electricity to the Linden Utility Service Co-operative Society Limited,[18] which supplies 5,372 customers on the western side of the Demerara River.[19] Currently, electricity generation in Linden is diesel-based and expensive. The GoG has subsidized electricity tariffs regularly for approximately 10,664 customers. From 2017 to 2020, in Linden, Government's subsidies accounted to more than US$14.8 million on average per year. Furthermore, the dependency of energy supply from a third party raises the risk of poor reliability, energy security and low monitoring and control of the power system.

1.13 **Electricity costs.** With an average tariff of US$0.30 per kilowatt-hour (kWh), electricity costs in Guyana are one of the highest in the world and higher than the US$0.16[20] LAC average representing a high portion of monthly expenditure for households and businesses. 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 or business expenditures, and eventually leads to consumption below what is necessary to fulfill basic needs, contributing to lack of competitiveness. This particularly affects the unprivileged and more vulnerable population, as in LAC, 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.

1.14 **Problem addressed.** As Guyana reaps the benefits of oil exports it is simultaneously embarking on a transition towards a cleaner energy matrix domestically. The main challenge to be addressed by this program is the current absence of a diversified generation matrix in the DBIS, the Essequibo and Linden systems. The over-dependence on oil imports leads to high CO_2 emissions and

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15 GPL intends to implement a total of 39.85MWh of utility-scale Solar PV energy systems over the next five years.

16 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 main economic activities are rice farming, sugarcane production, fruits and vegetable farming.

17 Bosai Minerals Group is a private company that runs the Bauxite Mining Plant in Linden.

18 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.

19 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.

20 Energy Prices in Latin America and the Caribbean. Olade Annual Report.

generation costs that negatively impact the utility's financial outlook, leading to high tariffs and low quality of service that ultimately hinder productive activities and competitiveness of private sector. The lack of a diversified energy matrix also implies a power sector very vulnerable to the fossil fuel price volatility and supply chain disruptions.

1.15 **Justification of intervention.** Solar PV generation constitutes an indigenous clean energy source, with quick and easy deployment, which provides energy security, resilience, local environmental benefits, domestic job creation, and improved balance of payments, amongst others.[21,22] Deploying RE improves energy security by diversifying the mix in terms of spatial diversity[23] and better withstand shocks to the system. Moreover, it also provides resource and fuel diversity making the system less vulnerable to price fluctuations.[24] The IRENA report on renewable power generation[25] costs indicates that RE costs have decrease in the last decade and are competitive with fossil fuels for new capacity. An IDB study[26] found evidence that emerging activities such as solar PV have the highest employment creation potential, between 11 and 36 direct jobs per 1 million dollars. In addition, they create more local, permanent and direct employment than projects from traditional generation. The proposed GUYSOL operation will increase the use of RE generation, with specific investments in innovative utility-scale solar PV and Battery Energy Storage System (BESS) technology. These investments will reduce the carbon-intensive nature of the electricity generation mix of both the DBIS and the isolated systems of Essequibo and Linden, mitigating Greenhouse Gas (GHG) emissions. Likewise, diversification will reduce the generation cost, increase resiliency in the systems, while also reducing the financial burden to the public utilities and associated GoG subsidies.

1.16 **Relationship between Guyana and Norway.** Given the significant benefits described above of investing in utility-scale solar PV generation, and in accordance with the conditions and obligations contained in the Memorandum of Understanding executed on November 9th, 2009, the GoG and Norway signed a partnership agreement for a results-based initiative to avoid deforestation and promote climate change. The funds allocated for this operation have already been paid by Norway to Guyana and are within the IDB. Guyana and Norway have decided to use these funds to implement this solar PV program. This program contributes to the advancement of the decarbonization goals as part of the country's LCDS and NDC. The IDB and NORAD relation will be governed by the Administration Agreement that will be signed after IDB Board approval with this project document annexed to the Administration Agreement.

1.17 **Bank experience and lessons learned.** The IDB has been supporting GoG's efforts to transform the energy sector through financing of several activities such

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21 IDB – DP- 292. Rethinking Our Energy Future, A White Paper on Renewable Energy for the 3GFLAC Regional Forum.

22 The Energy Smart Fund and the Public Sector Smart Energy Project in Barbados promoted by the IDB, has installed a capacity of 1.7 MW with outstanding results. These projects saved an estimated 3,105 MWh per year, worth an estimated US$1.3 billion at current electricity tariff rates. The PV systems are estimated to have reduced Barbados' fuel imports by 1,827 barrels per year. Final Progress Report to Gov´t of Barbados, Loan 2485/OC-BA.

23 Cox, Hotchkiss, Bilello, Watson, et al. 2017

24 Olz, Sims, and Kirchner 2007 'Contribution of Renewables to Energy Security'

25 IRENA – Renewable Power Generation Costs in 2020.

26 Implications of the energy transition on employment: today's results, tomorrow's needs.

as: (i) rural electrification, “Unserved Areas Electrification Program” (1103/SF-GY, US$27.4 million) (2002); (ii) legal, regulatory, and institutional framework strengthening and implementation of sector policies, “Power Sector Support Program” (1938/BL-GY, US$12 million) (2007) and “Strengthening the Energy Sector” (4698/BL-GY, US$11.6 million) (2018) ; and (iii) institutional strengthening, distribution network rehabilitation and loss reduction, “Sustainable Operation of the Electricity Sector and Improved Quality of Service” (2567/BL-GY, US$5 million) (2011), “Power Utility Upgrade Program” (3238/OC GY,3239/BL-GY, US$37.6 million) (2014) co-financed with the European Union (GRT/EX-14519-GY, US$26.9 million) (2014), and technical assistance and development of RE (GRT/FM-13897-GY, 4676/BL-GY). Lessons learned from these operations indicates that development of RE in Guyana requires associated local capacity to strengthen knowledge and experience in implementation; and a need to fortify coordination and collaboration between government agencies as well as between other stakeholders. Further, the operation “Energy Matrix Diversification and Institutional Strengthening of the Department of Energy” (4676/BL-GY, US$21.6 million) (2018) under its Component 1, showed positive progress for the realization of solar PV plants in Lethem and Bartica, which are planned to be commissioned by 2022, and execution will start soon in Mahdia. Despite COVID-related shipping and logistics delays, the current level of disbursement is 35% and the level of financial execution is 24%. This operation represents the first steps of having utility-scale renewable energy power plants in the country. As GPL is the operator of the power plant in Bartica, it will benefit from capacity support building as well as technical expertise from both operations. The IDB also has experience financing isolated systems with RE generation in several countries, as in Nicaragua with the National Sustainable Electrification and RE Program III (2342/BL-NI, US$30.5 million) (2010), solar mini-grids in Suriname through the programs “Support to Improve Sustainability of the Electricity Service”(3059/OC-SU US$30 million) (2013), “Development of Renewable Energy, Energy Efficiency and Electrification” (GRT/FM-13774-SU, US$4.4 million) (2013) financed by the Global Environmental Facility, and “Consolidating a Sustainable Energy Sector” (4931/OC-SU, US$30 million) (2019)); and recently approved a loan “Reconstruction with Resilience in the Energy Sector in The Bahamas” in The Bahamas (4978/OC-BH, US$80 million) (2020) for RE development and matrix diversification. Lessons learned in terms of bidding documents preparation procurement process, execution and implementation of RE systems in these operations will be considered to improve the execution of this program.

1.18 The operation ATN/NG-19116-GY provides finance for the implementation of a capacity-building program which will focus on strengthening GPL management and technical capacity to implement this operation with the support of international consultants. Additionally, for coordination purposes, and based on the positive experience with the EU operation,[27] a Program Steering Committee will be established to provide the required high-level support during implementation.

1.19 **Climate change and resilient infrastructure.** Guyana is very vulnerable to climate change, given that 35% of its population live below the poverty line and most of the economic activity, productive land, infrastructure and human settlements are located along the coastline. According to the country’s Second National Communication to the UNFCCC, the main climate change impacts in

[27] Utility Upgrade Program (3238/OC-GY,3239/BL-GY, GRT/EX-14519-GY).

Guyana include an increase in storm surges, sea level rise and more intense El Niño-Southern Oscillation events, leading to flooding, in particular in the coastal area. For instance, 2005 flood events affected more than 250,000 people and caused more than US$2.0 billion in economic losses.[28] Moreover, changes in temperature and rainfall patterns will lead to more frequent and severe droughts. The country's Climate Resilience Strategy and Action Plan has identified to energy security due to flooding of critical energy infrastructure as among the most serious climate risks. Guyana is estimated to have an infrastructure gap that would take between US$ 9.4 and US$ 23.8 billion over a period of 10 years to close, depending on the government's policy objective. Within these estimates, flood protection and climate resilience related costs represent approximately 12% of the infrastructure gap, highlighting their significance for policy development.

1.20 To respond to this risk, the NDC highlights the need for upgrading infrastructure and other assets as an adaptation measure against flooding. Aligned with this view, as part of the pre-feasibility studies, the selection process of sites at which PV infrastructure will be deployed, has included an analysis of exposure to flood events. Additional climate risk analysis will be conducted as needed during implementation so that solar PV infrastructure provides a reliable service under extreme events exacerbated by climate change.

1.21 **Gender and diversity gaps.** In Guyana women participation in the labor force continues to lag compared to men. Despite increase in the last years, it continues to be low,[29] and is one of the lowest in the LAC region. The COVID-19 pandemic has further exacerbated demands on women's time as they are disproportionally burdened by domestic chores along with higher levels of unemployment.[30] Data shows that the unemployment rate among men increased from 11.7% in 2020 Q1 to 13.3% in 2021 Q1, while for women it increased from 14.4% to 19.1% over the same period.[31]

1.22 In 2017, about 20% of the 58 million energy jobs worldwide were in the renewable sector.[32] Under the current policies and pledges, by 2050 the energy sector will grow to 114 million jobs, of which 21 million will be in RE.[33] RE jobs present an opportunity to promote gender equality given that female participation accounted for 32% of this workforce, higher than the 22% in the oil and gas industry, in 2018.[34] In Guyana, women participation in the energy sector is particularly low. Traditionally considered a male sector, there is a horizontal and vertical gender segregation in the electricity and energy sector with men predominating, especially on technical and higher paying positions. Women are mostly confined to administrative and other non-technical positions, therefore lower-paying positions. The International Labour Organization estimated that women represented 16% of the total workers in the mining and quarrying, electricity, gas and water supply in Guyana in 2019.[35] This project offers an opportunity to address the gender

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28 Guyana Second National Communication to the United Nations Framework Convention on Climate Change. (2012).
29 World Bank (2019). The Little Data Book on Gender.
30 IDB (2020) COVID-19 The Caribbean Crisis: Results from an Online Socioeconomic Survey.
31 Guyana Bureau of Statistics (2021). Guyana Labour Force Survey.
32 IRENA (2020). Global Renewables Outlook: Energy transformation 2050.
33 IRENA (2021). Renewable Energy and Jobs Annual Review 2021.
34 IRENA (2019). Renewable Energy: A Gender Perspective.
35 Own calculations using ILO data. (2019). Employment by sex and economic activity.

inequality in the energy sector by training women for technical positions where their participation at present is minimal.

1.23 With regards to Persons with Disabilities (PwD), according to the Guyana Bureau of Statistics in 2012, 9,240 (1.6% of the population) persons in Guyana live with a disability. PwD typically face low levels of education due to barriers to access, leading to social and economic exclusion, higher levels of poverty than the general population, and low levels of employment with the majority being self-employed, with incomes less than the minimum wage.[36]

1.24 **Innovation and digitalization.** The GUYSOL program seeks to promote innovative practices in the country through the introduction of utility scale PV plants, BESS and advances in digitalization. BESS plays a key role in enabling a greater penetration of non-conventional RE by managing the variability of the generation source and providing additional flexibility to the grid. BESS can provide key ancillary services to the network such as frequency regulation, flexible ramping and black start services improving the quality and security of electricity supply, and they can also provide transmission and distribution decongestion services.[37] Digitization is transforming the energy sector with the potential to lower the costs of service provision and increase resilience, quality, and improved affordability for the most vulnerable.[38] Digitization is essential for the management and rapid responses to the variability of solar PV and will increase the availability of data, optimizing planning capacity of GPL.

1.25 Currently, both isolated systems of Linden and Essequibo lack a real-time data gathering system for key indicators of the electric supply, including power, voltage, frequency, energy and reliability. The lack of information hinders the operational capacity to evaluate, manage and plan these systems operation. For example, in Linden, manual reading of load, voltage, frequency is taken weekly by operators. In Essequibo, while there are digital meters, these lack the ability to store historical data automatically, thus it must be recorded manually every hour. Incorporating real-time data gathering would allow having accurate information on the systems operation, providing a strong baseline to the utility to improve the operation and planning of the systems.

1.26 **Country Strategy.** The program is aligned with the IDB Group Country Strategy 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 continued work with key utilities to enhance their capacity to manage existing and future infrastructure assets.

1.27 **Strategic Alignment.** The program is consistent with the Bank's Second Updated Institutional Strategy (UIS) (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-

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[36] National Commission on Disability 2020 (interview with three members) and ND report, Guyana Chronicle September 10, 2021.

[37] IRENA – Utility-Scale Batteries Innovation Landscape Brief 2019.

[38] DIA 2020: From Structures to Services Chapter 9.

cutting themes: (i) Gender Equality and Diversity, by contributing to improve access to services and socioeconomic opportunities for women and PwD 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_2 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; and (ii) CO_2 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, 98.1% of total funding for this operation result in climate change mitigation and adaptation activities, contributing to the IDBG's climate finance goal. This operation is consistent with the IDB´s Vision 2025 pillars of: (i) Digitalization, as the operation promotes remote real-time monitoring and operation of the PV plants; (ii) Gender, as it will promote trainings and apprenticeship programs targeted for women; and (iii) Climate Change, as it will promote the use of RE in solar PV and battery storage climate resilience plants to avoid CO_2 emissions of the electricity sector.

1.28 **Regulatory Framework and Sustainability of the Electricity Sector.** This operation is consistent with the Public Utilities Policy (GN-2716-6) criteria and principles, in particular: (i) the promotion of access to and the increased efficiency and quality of public utilities, supports the introduction of renewable energy, network upgrades to increase efficiency and reliability of the electric system; and (ii) the scope of the sustainability of the public utilities based on the pillars of the policy: Financial, Economical, and Environmental and Social sustainability by the promotion of PV solar plants.

B. Objective, Components, and Cost

1.29 **Objective.** The objective of the program is to support the diversification of Guyana's energy matrix towards the use of climate resilient RE sources in the electricity generation matrix. The specific objectives of the program are to: (i) avoid CO_2 emissions with the development of solar PV generation plants; (ii) lower the cost of electricity generation while supporting the country's transition towards RE-based generation; and (iii) improve the operation and management of the isolated systems of Essequibo and Linden and develop local skills for services related to solar PV generation systems.

1.30 **Component 1. Solar PV Solutions in the Electricity Matrix (US$72.45 million).** This component will invest in solar photovoltaic plants as follows: (i) 10 MWp of generation 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 12MWh; and (iii) 15MWp connected to the Linden Isolated System inclusive of a BESS with a minimum capacity of 22MWh. Each facility will be connected to the 13.8kV primary distribution network in the area. GPL has preliminarily identified

the general location for the installation of each project (Concept Note), which will use public land and technical project designs which are under development.[39]

1.31 Given that the characteristics and needs of each site are different, the new electricity generation plants will have tailored system solutions to meet respective current and future demands. The installation of solar PV systems will partially displace the use of fossil fuel for electricity generation and contribute to climate change mitigation with the reduction of CO_2 emissions. This component, supports an innovative solution to satisfy a concrete need in the three areas, financing the first utility-scale solar PV and BESS investment project in Guyana. With the development of solar PV power plants, this component will contribute to the diversification of the energy matrix in the country towards a cleaner renewable electricity generation base.

1.32 **Component 2. Operation Efficiency, System and Capacity Building (US$5.85 million).** This component will finance upgrades and digital modernization, via energy management applications, in the isolated Essequibo and Linden electrical systems. This will promote real-time monitoring and control while also improving reliability, efficiency, and stability of the systems. The support includes: (i) the installation of automated monitoring and control systems; (ii) remote control systems for substations; (iii) a Disaster Risk Management Plan for flood-prone sites;[40] and (iv) training and apprenticeship programs with a gender and inclusion focus.

1.33 **Climate change mitigation actions under Component 2.** This component will support the development of Energy Management Systems on the isolated systems of the Essequibo and Linden power grids as well as support GPL's overall system digitalization. The support includes the financing of the hardware and/or cloud services (i.e., Servers, networking devices and field devices) and the software components alongside the necessary communications protocols,[41] which will be integrated into the power plant's final designs.[42] The main aim of the automated monitoring and control system for the PV power plants is to transmit data in a reliable, secure, and efficient manner. Automation, therefore, is an essential element that improves the optimizes performance and overall lifetime of the PV system.

1.34 Monitoring and control systems must consider the system design parameters as well as site conditions (i.e., humidity, heat generation, etc.). Each system will be tailored to exactly fit a particular site, so that the PV power plants will be able to

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[39] Utilizing its own funds, GPL is directly financing technical studies: (i) the electrical interconnection and battery optimization assessments; (ii) topographic surveys, geotechnical analysis, and flood risk assessments for all projects. These studies will be completed prior tender as they 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. The Bank is accompanying with the technical review of these studies to ensure project success.

[40] Based on the Environmental and Social Analysis Report only 2 out of 8 sites are under flooding risks due to high-intensity precipitation that could be exacerbated by climate change. Further studies will be carried out in those sites as part of Component 2.

[41] Solar PV plants produce a massive amount of varied data. Hence system software has to be able to handle this huge amount of data and it must be able to understand different communication protocols. There are several communication protocols, but the most common one used in the solar PV utility scale are Modbus protocol, the DNP3 protocol or IEC 61850 protocols.

[42] As part of the procurement plan, the systems will be procured in a Design and Build modality, this will allow the program to have the best technology option proposed by the bidders while easing execution of the works.

generate electricity that meets required parameters for the efficient distribution of power across existing electrical networks.

1.35 Additionally, sites prone to climate change risks will be targeted for further analysis following principles established under IDB's Risk methodology. The methodology will guide the identification and prioritization of specific adaptation measures to manage identified climate risks and make the solar PV infrastructure climate-resilient, including the development of a Disaster Risk Management Plan. This Plan will provide recommendations for the operation and maintenance of installed infrastructure and will guide the supervision of the specific risk-reduction actions for those sites potentially exposed to flooding.

1.36 **Gender and Diversity specific actions under Component 2.** To fully realize its potential, the renewables industry in Guyana must be more inclusive to tap a wider pool of talent. To meaningfully transform the energy sector and narrow the gender and diversity gaps (¶1.21), government energy agencies, energy contractors and companies would need to support actions that attract, develop, retain, and promote female and PwD talent as well as women's access to energy products and services. Under Component 2, the project will finance the following activities to promote gender equality and diversity: (i) training programs for women in solar PV, Solar Job and Workforce Development (SJWD), with paid apprenticeship opportunity; and (ii) the design and implementation of an apprenticeship program for diversity and inclusion within the Project Executing Unit in GPL and other Government Energy Agencies.

1.37 The SJWD training for women consists of a five-week (200 hours) solar installation training program designed to provide interactive classroom instruction, hands-on-lab activities and real-world solar PV installation experience. The training will cover technical skills related to solar installation, safety, job readiness and climate justice. A total of 50 women will be certified in solar PV installation. All women who complete the training will participate in a paid 8-month apprenticeship program to strengthen their technical skills and facilitate their incorporation to the RE sector workforce.

1.38 Recognizing the value of skilled and experienced personnel to design and implement Solar PV energy programs, this Component will also finance 10 apprenticeships for 1 year within the Project Executing Unit in GPL and other Government Energy Agencies (e.g., Guyana Energy Agency) in critical project management-related areas that advance RE. There will be a particular focus on gender and diversity in hiring apprentices in key areas such as energy management, financial, procurement, and environmental/social safeguards supervision. There will be parity between women and men in this apprenticeship program (50:50) and at least 20% of the total of apprentices selected will be PwD.

1.39 Accelerating the reliable deployment of these solar plants and digital systems requires creating the skills and employment to strengthen the sector. This component will be supported by the Technical Cooperation ATN/NG-19116-GY[43] that provides financial resources to develop a capacity building program for the

[43] Approved on 12/15/2021 for US$1.5 million. Objective of TC is to support the operation's development by strengthening GPLs' capacity toward a utility scale solar PV sector, as well as the advancement of required studies that serve the deployment of a transformative Solar PV Program in Guyana

utility's team. Training will also include activities on disaster risk management for GPL operators.

1.40 **Other costs (US$3.4 million).** This amount will finance project management costs such as PCU staff salaries, procurement of assets for the PCU, its administrative expenses, financial and technical audits, and a midterms and final monitoring and evaluation of the program.

1.41 **IDB Administrative fees (US$1.6 million).** The Bank will charge and retain a non-refundable administrative fee of US$1,600,000 from NORAD´s contribution to assist in the defrayment of the administrative costs in relation to the project contribution.). Such fee will be distributed to the Bank departments that have supported the preparation, execution, and monitoring of the project.

1.42 **Beneficiaries.** The main beneficiaries are the public utilities (GPL and LECI) as important quantities of fossil fuel currently used in power generation will be avoided with the use of solar PV technology reducing current electricity generation costs in the project areas of Linden, Essequibo and Berbice. Additionally, the program benefits the citizens of the three project areas by strengthening reliability in the provision of electricity with BESS and system operation upgrades in Linden and Essequibo, as well as increased power generation in Berbice. Overall, the program will also have important impacts in terms of CO_2 reduction contributing to the National Determined Contribution (NDC) targets that Guyana has committed as part of the Paris Agreement. Considering that all systems will be interconnected to the existing distribution network, it is foreseen that the solar farms will benefit all of the DBIS customer base, the Linden, and Essequibo systems for over 265,000 customers by 2025.

C. Key Results Indicators

1.43 As indicated in Annex II, the main expected outcomes of the investments of the program are: (i) CO_2 emissions avoided in power generation, due to the development of PV plants; (ii) lower cost of electricity generation, to be monitored by the avoided cost of generation from fossil fuels; (iii) improved operation and management of the isolated systems of Essequibo and Linden, thanks to upgrades and digital modernization of the energy management system; and (iv) the development of local skills for services related to solar PV systems, focused on the number of women and diversity groups employed in solar PV thanks to the certification and apprenticeships programs designed and implemented for diversity and inclusion. These outcomes will result in an increase of utility-scale solar PV generation in the matrix, in the areas of influence.

1.44 **Economic Analysis.** An economic analysis was prepared for the operation evaluation. This analysis considers not only the representative sample defined for the operation but all the projects to be financed. It is based on a cost-benefit analysis. The analysis concluded that each GUYSOL PV/BESS Project as well as the overall GUYSOL PV/BESS Program is economically viable and attractive using the assumptions modeled in the study. The estimated benefits are greater than the estimated costs under the base case assumptions. For the program, and assuming an 8% discount rate, the net present value of the economic cash flows totals US$17.1 million. The internal rate of return of the program is 11.7%. Given that the benefits exceed the costs, the projects and program would be most sensitive to increases in fuel prices, to cost overruns, and to increases in the discount rate. For example, if the program experiences cost overruns above 34%, or discount rates

above 12.24% the costs would exceed the benefits. For more information, please refer to the OEL#1.

II. Financing Structure and Main Risks

A. Financing Instruments

2.1 **Modality and financial structure.** 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 46% 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$83.3 million[44] for the program to be financed with non-reimbursable resources by NORAD. The deadline for commencement of the works under the program is two years, counted from the effectiveness of the Non-reimbursable Financing Agreement.

Table 1. Summary of Program costs (in US$)

Components	NGG	%
Component 1. Solar PV Solutions in the Electricity Matrix	**72,450,000**	**87.0**
Installed Capacity of PV Farms	72,450,000	87.0
Component 2. Operation Efficiency, System and Capacity Building	**5,850,000**	**7.0**
Program for women certified in solar PV installation implemented	520,000	0.62
Apprenticeship program designed and implemented for diversity and inclusion	300,000	0.36
Automated monitoring and control system installed	2,500,000	3.00
Substation upgraded with remote control system	2,500,000	3.00
Disaster Risk Management Plan	30,000	0.04
Other costs (PEU management)	**3,400,000**	**4.1**
IDB Administrative Fee	**1,600,000**	**1.9**
Total	**83,300,000**	**100**

2.2 **Representative Sample.** The execution of Component 1 is envisioned under the modality of a Multiple Works Program (Document PR-202). Three sites have been selected (in Linden - Block 37 and Retrieve and Prospect in Berbice) which provide a total investment of US$31.4 million and will result in 15MW solar PV, 12MWh BESS. The sample represents 46% of the total project investment and includes a scope of environmental and social impacts that is representative of expected impacts for future projects financed under the program, that is further ensured through a series of exclusions for upcoming projects, such as exclusion of involuntary resettlement, of significant impacts on IPs, of intervention in critical natural habitats, among others listed in the ESMR. All sites have undergone a careful site selection process which is included in the Environmental and Social Assessments (ESAs). The representative sample has all the required technical studies completed and the Cost-Benefit Analysis (OEL#1) provides a reference budget for all the solar PV plants. This reference cost considers comparable costs for the solar panels, BESS, interconnection, and site preparation costs. For the latter, these costs in Guyana reflect the price of clearing dense vegetation, accessing the site, particularly during the rainy season and revegetation costs. For

[44] The resources funds are currently held in a separate fund - The Norwegian Grant for Guyana (NGG), administered by the IDB. NORAD's commitment will be established through a separate Administration Agreement.

the remaining project sites not included in the sample, the team has received drafts of all the technical studies. The final reports including ESG studies will need to be finalized to feed into the request for proposal document. The final technical designs will be done by the contractor as part of the engineering, procurement, and construction contract as part of the design and build tender mode.

2.3 Alongside this sample, any work to be financed under this operation must comply with the following criteria: (i) compliance with social and environmental provision set out in the program's environmental and social management framework; (ii) necessary technical designs must have already been prepared within the jurisdictions of the electrical systems; (iii) not be classified as a Category "A" operation under the Bank's socio environmental classification within the Environment and Safeguards Compliance Policy; and (iv) compliance with the cost-benefit analysis methodology as outlined in the economic analysis OEL#1.

2.4 **Disbursement period.** The project is expected to follow a 5-year execution period, as shown in Table 2. The period was determined in close coordination with the executing agency considering the defects liability period that is required post commissioning and lessons learned from procurement, shipping and logistic timelines from other solar farms in execution in Guyana.

Table 2. Project Disbursements (US$ million and %)

Disbursement	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Total	17.25	52.55	10.34	2.56	0.6	83.30
%	20.70%	63.08%	12.41%	3.07%	0.73%	100%

B. Environmental and Social Safeguard Risks

2.5 In accordance with the IDB's Policy OP-703, this operation is classified as Category "B" due to the expected short-term and localized negative impacts of the proposed interventions that can be mitigated by the implementation of the required mitigation measures. An Environmental and Social Management Framework (ESMF) has been developed for the multiple works program, along with the Environmental and Social Assessment (ESA) and Environmental and Social Management Plans (ESMPs) for the representative sample projects. Additional details are presented in the Environmental and Social Management Report (ESMR) and a summary of key topics is presented in the paragraphs below. The main impacts and risks of the program will be associated with land clearing activities needed for the installation of the solar plants and their associated infrastructure. Key impacts and risks addressed in the environment and social documentation are the following: (i) biodiversity impacts on natural habitats; (ii) potential economic displacement in future projects; (iii) natural disaster risks with particular attention to flooding; (iv) generation of hazardous and non-hazardous waste, as well as soil contamination; and (v) labor and working conditions, including issues related to the supply chain. All solar sites for the sample projects are in public land ("State Land") which is available for development and can be allocated to the projects; future project sites will prioritize public lands. Resettlement is an exclusion criterium. The ESIA confirmed through site inspection that there are no occupants (legally recognized or otherwise) nor any use of land and resources that could be affected/displaced, and as such no need for involuntary resettlement is foreseen; likewise, intervention in indigenous people

territories is not expected at any project site. The ESMF for the multiple works program has established exclusion criteria to avoid activities related to Category A projects and significant impacts to the environment and local communities. The ESMP includes adequate measures to mitigate and compensate the identified risks and impacts related to the sample projects. Consultation events have been undertaken covering all sample project sites at Prospect on October 21st 2021, and at Linden on November 18th, 2021, and were considered to be meaningful. Consultations were carried out following Guyana COVID-19 guidelines. The consultation presented the project and its associated potential impacts and mitigation measures. Most questions were related to project benefits, potential positive impacts on electricity tariffs and availability of land for the project.

2.6 The environmental and social documents of this investment operation incorporate all measures to address risks of forced labor in the primary supply chain of solar panel suppliers aligned with the IDB Group Measures to Address Risk of Forced Labor in the Supply Chain of Silicon-based Solar Modules (GN-3062). In addition, bidding documents will incorporate provisions to mitigate E&S risks, including forced labor and impacts. Bidding Documents could include environmental and social evaluation criteria. Procurements processes that include Silicon-based Solar Modules will be subject to ex-ante review and centralized monitoring.

C. Fiduciary Risk

2.7 The Program Execution Unit (PEU) has previous experience with IDB financed projects and IDB financial management and procurement policies and procedures. It must be noted that this is the first operation to be executed under new IDB procurement policies and standard bidding documents. As detailed in Annex III, the fiduciary risk has been ranked as medium-low. The main fiduciary risk identified was procurement planning and management delays due to limited experience applying IDB's procurement policies and related procedures, which will be mitigated by hiring a dedicated procurement specialist and assistant. These fiduciary risks will be addressed through: (i) the design of an Operating Manual to provide adequate guidance and mitigation measures to discharge all fiduciary duties in accordance with the Banks's rules and procedures; (ii) the provision of continuous support to streamline the timely execution of all fiduciary activities (financial management and procurement); and (iii) the provision continuous technical supervision and training of financial management and procurement staff who will be responsible for fiduciary activities under the non-reimbursable financing.

D. Other Risks and Key Issues

2.8 **Risks:**

RISK TAXONOMY	RISK DESCRIPTION	RISK LEVEL	MITIGATION
Technical Design	If there is limited experience and capacity in relation to utility scale solar PV plants within the PEU, there could be delays in the development and implementation of the project, impacting the program performance and duration.	High	Experienced international consultants will be hired to support technical aspects of execution. There will also be training programs to build technical capacities in areas of solar PV project development and management and operation of solar PV plants.
	If the technical studies for the interconnection, BESS systems and geotechnical are unavailable, it could affect the scope and technical conditions of projects impacting the program execution.	Medium-high	GPL has procured experienced consulting firms to conduct the required studies to adequately inform the technical conditions for the tender process.
Execution Environment	If the current emergency related to COVID-19 continues, implementation of the planned works could delay the program execution.	High	The PEU will consider experiences and lessons learned through the execution of infrastructure projects during the pandemic and all field activities will be guided by prevailing national health and safety guidelines.
	If supply chain disruptions resulting from the COVID-19 pandemic continue, they could introduce delays in the construction of the solar PV plants, affecting project execution.	High	The PEU and contractor will work closely to ensure that construction workplans are realistic and consider the COVID-19 related challenges in the local and international business environment. Such workplans will ensure sufficient lead-times for the procurement of major equipment from international suppliers and timelines for local customs clearance.

RISK TAXONOMY	RISK DESCRIPTION	RISK LEVEL	MITIGATION
	If there are land related disputes, it could result in changes in identified project sites, impacting on project planning and execution.	Medium-high	It is important to secure the identified lands at an early stage of Project development with appropriate legal documentation and clear demarcation of Project boundaries. Appropriate signage should also be erected at the sites clearly indicating ownership and the plans for development of the site.
	If there are project sites located close to water bodies or in low-lying areas, they could be susceptible to floods, affecting project sustainability.	Medium-high	A Flood Risk Assessment is being undertaken to ascertain the potential flood risks at identified solar PV sites and to determine the appropriate mitigation measures and actions.

2.9 **Sustainability and Private Sector Participation.** The GoG is committed to supporting the program's sustainability beyond its execution as it has made important assurances to develop a cleaner and greener electricity matrix in the LCDS and commitments to the Paris Agreement. The development of solar PV plants will make significant contributions to cleaner and affordable electricity generation. The Bank, through the IDB|GEF Sustainable Energy Program (GRT/FM-13897-GY) conducted a study of the legal and regulatory framework of the electricity sector to facilitate private sector investment in RE development through Independent Power Producers (IPPs) and Distributed Generation (DG), allowing the country to establish a solid local solar PV market. This study provided recommendations for amendments and development of the legal and regulatory framework of the Guyana electricity sector to achieve the following GoG objectives: (i) promote hydropower and other indigenous RE to meet national generation requirements for the GPL grid as well as communities in the hinterlands; (ii) foster a major role for DG and IPPs in electricity generation; and (iii) facilitate private investment in RE development in DG and IPPs.

2.10 The IDB Group, through IDB Invest, is also providing support to solar PV contractors within the local private sector. In this regard, an uncommitted, secured working capital facility of US$5,000,000 was approved in October 2021 to support a solar PV consortium that was contracted under 4676/BL-GY to design, procure and construct two solar PV plants in Bartica (1.5MWp) and Lethem (1MWp). This operation will foster similar partnerships and collaborations with IDB Invest. The private sector will also be actively engaged through a market survey during program preparation, to assess the level of interest and capacity of eligible local and international firms to successfully execute the planned solar PV plants. The local solar PV market, which is now growing, is expected to be further augmented through the current Program, and active promotions such as procurement fairs.

Companies will be presented with opportunities for strategic partnerships with local and international contracting firms, equipment manufacturers and suppliers.

III. Implementation and Management Plan

A. Summary of Implementation Arrangements

3.1 **Execution.** The Beneficiary is the Cooperative Republic of Guyana, GPL will serve as the Executing Agency (EA) of the operation with a 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. A Program Steering Committee will be established with the participation of the GOG (including GPL and LECI), NORAD and IDB to share the program progress reporting role and get high-level advice/feedback as well as to coordinate strategic activities required with other GOG agencies as needed.[45]

3.2 An Institutional Capacity Assessment (PACI) of the EA was conducted and was favorable in light of the fact that the EA has solid experience implementing IDB projects. Nevertheless, given this is the first utility-scale solar project for GPL, the PACI recommended: (i) an extended PEU to include consultants that manage project functions particularly with respect to related overlapping projects, See Annex A of Project Operational Manual (POM) (OEL#4); (ii) strengthened procurement support, support to address ESG functions; and (iii) strengthened monitoring and evaluation and communications functions. The PEU has already implemented many of these recommendations. Therefore, the executing capacity of the EA will be strengthened with the establishment of a PEU that will be financed by the operation. The PEU will have a dedicated team of experts who will execute the components and activities funded and have responsibilities for all project administration. The PEU will include at a minimum: a program coordinator; procurement specialist; procurement assistant; financial specialist; three project engineers to supervise the different solar projects; an executive assistant; an environmental management specialist; social management specialist; and a monitoring and evaluation (M&E) officer. The social management specialist and monitoring and evaluation specialist will be tasked with communication functions, environmental and social support as needed given that this operation represents Guyana's first utility-scale government-owned renewable energy activity. Strong coordination between the IDB and the PEU Project Coordinator is recommended as part of the Institutional Assessment for this operation in addition to workshops, frequent supervision and coaching support for execution progress. Additionally, supervisory support for the operation, will come from the TC ATN/NG-19116-GY "Technical Consultancy to Support the Supervision of Solar PV Plants Construction & Installation" which will establish a firm hired to support GPL with this and other operations.

3.3 The PEU responsibilities will include: (i) preparation of semi-annual progress reports; (ii) preparation and implementation of the Annual Operational Plan (AOP); (iii) preparation of budgets and disbursements; (iv) preparation of the Procurement Plan (PP); (v) financial administration of the project according to accepted

[45] Expected coordination includes Guyana Lands and Survey Commission, and Environmental and Protection Agency.

accounting principles and presenting audited financial statements; (vi) ensure the quality and efficacy of procurement processes and their compliance with the policies of the Bank; (vii) ensure the consistent alignment of expected results with day-to-day project implementation; (viii) continuous data collection to enable the measurement of the indicators included in the Results Matrix (RM); and (ix) be project liaison with the Bank. The PEU is also responsible for the award and administration of contracts under the project, rests with the Executing Agency. The POM will establish the operational arrangements during the execution of the program, the institutional and technical framework of the program, and the level of responsibilities of the institutions involved in implementation.

3.4 **Management Tools.** The Procurement Plan (PP) (REL#4) includes details on procurement for the first 18 months of execution. Activities may be amended accordingly, by agreement between the EA and the Bank. The EA will update the PP at least once every 12 months. The Procurement Supervision method will be ex-ante. Every year during the implementation of the Program, the PEU will present an AOP (REL#1) to the Bank for its no-objection. The AOP will detail the Program's progress and execution of activities including goals, results, budget and implementation schedule for the year ahead. The Pluriannual Execution Plan (PEP) (REL#1) details the Program's progress and implementation schedule for the outstanding years of the operation. An initial AOP was prepared for the first year of execution, whereas an initial PEP was prepared for the whole execution period. These tools as well as the Execution Planning Annex (OEL#9) show an estimated execution period for the program.

3.5 **Special contractual clauses prior to first disbursement**. **The Beneficiary will provide evidence to the satisfaction of the Bank of: (i) the entry into force of the POM according to the terms and conditions previously agreed with the Bank;** this will support the proper execution of the program by detailing the guiding principles for execution and coordination of activities**; (ii) the entry into force of a subsidiary agreement between the MoF and GPL establishing the obligations of the parties for the execution of program and the manner in which the resources will be transferred;** this will comply with the national procedures for availing the funds from MoF to the Executing agency for program execution; **and (iii) the establishment of a PEU within GPL as well as the designation or appointment of key personnel as established in paragraph 3.2,**[46] to ensure that the Beneficiary begins the implementation of the program with a qualified team in the EA.

3.6 **Special contractual clauses of execution**. Prior to execution of activities under component 1, the beneficiary will provide evidence to the satisfaction of the Bank of the designation of additional key technical personnel of the PEU, that is, three electrical engineers, to ensure that the EA has a qualified technical team for the execution of the solar plants under component 1. Prior to the contract award for the projects in the Linden area, the Beneficiary will provide evidence to the satisfaction of the Bank, of the entry into force of an operational agreement between GPL and LECI establishing their respective roles and responsibilities for the implementation of the activities in Linden.

[46] The three projects' engineers will be considered a special contractual clause for execution and not for disbursement.

3.7 **Procurement policies.** The procurement of goods, works, and services, and the selection of consultants financed by the Bank will be carried out in accordance with the Polices for the Procurement of Goods and Works financed by the IDB (document GN-2349-15) and the Policies for the Selection and Contracting of Consultants Financed by the IDB (document GN-2350-15), respectively. The Procurement Plan (PP) includes details on program procurement. The procurement agreements and fiduciary requirements are included in Annex III.

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

3.9 **Retroactive financing.** The Bank may finance retroactively eligible expenses incurred by the Beneficiary prior to the approval date of the Non-reimbursable Financing , to finance consulting services for project preparation up to a sum equivalent to 5% of the proposed investment amount, if they satisfy requirements substantially similar to those established in the Non-reimbursable Financing Agreement. These expenses must have been incurred on or after the approval date of this project profile,[47] and no expenditure incurred more than 18 months prior to the non-reimbursable financing approval date should be included.[48]

B. Summary of Arrangements for Monitoring Results and Donor Reporting

3.10 **Monitoring.** The monitoring arrangements include administrative missions, semiannual progress reports, and annual external audits. All monitoring activities will be based on the RM, the M&E arrangements, the PP, and the PEP. GPL, through the PEU, will carry out the overall monitoring of the program, based on the targets established in the RM and using the AOP, which will be updated annually.

3.11 The AOP for the first 18 months of the execution of the project will be submitted within 60 days after the entry of the non-reimbursable investment financing contract. It will include: (i) an estimated budget; (ii) an updated PP; (iii) expected indicators for the RM; (iv) planned activities; and (v) schedule of implementation. The AOPs for each of the subsequent years will be submitted for the Bank's non-objection before December 5th of each calendar year and will cover the activities to be carried out in the following year. Also, the PEU will submit semiannual progress reports within 60 days of the end of each semester, containing: (i) a narrative description of activities, procurement process, and implementation issues for the reported period; (ii) RM indicators update; (iii) statement of costs by component activities and RM indicators; and (iv) identification of implementation risks/events and response measures. The Bank, through the Sector Specialist, will supervise program execution. The INE/ENE project team will be responsible for the preparation and submission to the donor of all the project reporting agreed in the Administration Agreement with NORAD for this project, with input from GPL and the other relevant offices of the Bank.

3.12 The Monthly and Annual Assistance Tool (OEL#9) will be used to monitor the operation. This tool details the activities to be carried out month by month,

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47 Approved on August 24th, 2021.

48 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.

identifies deviations in a timely manner, and aids in evaluating the operation from eligibility to completion.

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

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

3.15 **Audit.** During the program disbursement period, GPL will submit the annual audited financial statements to the Bank within 120 days following the close of the respective fiscal year. The audit will be conducted by the Audit Office of Guyana or an independent firm of auditors acceptable to the Bank, to be selected in accordance with the Bank's policies and procedures. The determination as to the scope and other related aspects will be governed in accordance with the Financial Management Policy for Bank financed Projects (document OP-273-12) and the Guide for the Preparation of Financial Statements and External Audits. Audit costs will be financed with the project resources and GPL, through its PEU, will be responsible for contracting the program auditor.

Development Effectiveness Matrix		
Summary	GY-G1007	
I. Corporate and Country Priorities		
Section 1. IDB Group Strategic Priorities and CRF Indicators		
Development Challenges & Cross-cutting Issues	-Social Inclusion and Equality -Productivity and Innovation -Gender Equality and Diversity -Climate Change	
CRF Level 2 Indicators: IDB Group Contributions to Development Results	-Emissions avoided (annual tons CO2 equivalent) -Installed power generation capacity from renewable sources (MW)	
2. Country Development Objectives		
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 2022 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution		9.0
3.1 Program Diagnosis		1.9
3.2 Proposed Interventions or Solutions		3.2
3.3 Results Matrix Quality		4.0
4. Ex ante Economic Analysis		8.5
4.1 Program has an ERR/NPV, or key outcomes identified for CEA		0.0
4.2 Identified and Quantified Benefits and Costs		3.0
4.3 Reasonable Assumptions		2.5
4.4 Sensitivity Analysis		2.0
4.5 Consistency with results matrix		1.0
5. Monitoring and Evaluation		8.8
5.1 Monitoring Mechanisms		4.0
5.2 Evaluation Plan		4.8
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood		High
Environmental & social risk classification		B
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Treasury, Accounting and Reporting, External Control.
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 objective of this Grant is to support the diversification of Guyana's energy matrix towards the use of climate-resilient renewable energy sources in the electricity generation matrix. To this end, three specific objectives are contemplated: (i) avoid CO2 emissions with the development of solar Photovoltaic (PV) generation plants; (ii) lower the cost of electricity generation while supporting the country´s transition towards renewable energy-based generation; and (iii) improve the operation and management of the isolated systems of Essequibo and Linden and develop local skills for services related to solar PV generation systems.*

The program diagnosis appropriately assesses the situation of the energy sector in the country which in general backs up the proposed interventions. In this regard, quantitative evidence is provided regarding the main challenges of the sector in its energy transition process as well their respective causes. Neither the POD nor its annexes present empirical evidence about the effectiveness of this type of interventions based on rigorous impact evaluations.

In general, the results matrix reflects the vertical logic described in the POD, covering the inputs, outcomes, and results. The indicators in the results matrix meet the SMART criteria and include the sources and means of verification that will be used to measure them.

The monitoring and evaluation plan is adequate. The main evaluation questions are adequate, and a schedule is contemplated with the activities and timeline to gather the necessary data. Finally, the program will evaluate the results achieved using the before-after comparison without attribution.

Results Matrix

Project Objective	The objective of the program is to support the diversification of Guyana's energy matrix towards the use of climate-resilient RE sources in the electricity generation matrix. The specific objectives of the program are to: (i) avoid CO_2 emissions with the development of solar PV generation plants; (ii) lower the cost of electricity generation while supporting the country's transition towards RE-based generation; and (iii) improve the operation and management of the isolated systems of Essequibo and Linden and develop local skills for services related to solar PV generation systems.

General Development Objective

Indicators	Unit of measurement	Baseline value	Baseline year	Expected year for achievement	Target	Means of verification	Comments
General development objective: to support the diversification of Guyana's energy matrix towards the use of climate-resilient renewable energy sources in the electricity generation matrix							
Utility-scale solar PV generation in the electricity matrix	% Share of RE capacity in the system	**0**	2021	Year 5	19%	Report from the Executing Agency	This refers to areas of influence of the program and utility owned systems. (DBIS system, Essequibo Coast Isolated System, and Linden).[1]

[1] Average % for ECIS (33.61%) and DBIS+LIS (4.47%). Utility Owned Installed capacity as of 2025 used based on 2021-2025 D&E.

Specific Development Objectives

Indicators	Unit of measurement	Baseline value	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	End of Project	Means of verification	Comments
Specific development objective 1: Avoid CO_2 emissions with the development of solar PV generation plants											
CO_2 emissions avoided	Tons of CO_2	0	2021	0	0	0	37,695	37,582	75,277	Report from the Executing Agency	The Bartica system emission factor was used for Linden emission factors due to similarity.[2] The end of project is the cumulative CO_2 emissions avoided.
Specific development objective 2: Lower the cost of electricity generation											
Avoided cost of generation	US$ Million	0	2021	0	0	0	3.58	1.95[3]	5.53	Report from the Executing Agency	This is avoided average cost of the three systems. Compares the LCOE from solar versus business as usual.
Specific development objective 3: Improve the operation and management of the isolated systems of Essequibo Coast and Linden, and develop local skills for services related to solar PV generation systems											
Electrical System performance indicators made available and in use for Linden and Essequibo	# Indicators	0	2021	0	0	0	4	0	4	Executing Agency Report	Performance indicators such as System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI)
Women employed in Solar PV	% Of women employed	0	2021	0	0	35%	35%	0%	70%	Executing Agency Report	The percentage is over the participants from the certification and apprenticeship program The indicator considers that women trained will start working the following year after finishing the program. Each program consists of 25 women trained.

[2] Emissions factors used (tCo_2/MWh): 0.661 for DBIS, 0.854 for Linden, 0.760 for Essequibo Coast.
[3] The interconnection with the use of NG will be completed by year 5. Therefore, matrix will be using a cheaper fuel compared to imported HFO/LFO.

Outputs

Indicators	Unit of measurement	Baseline value	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	End of Project	Means of verification	Comments
Component 1: Solar PV solutions in the Electricity Matrix											
PV farms capacity Installed	MW	0	2021	0	0	0	33	0	33	Executing Agency Report	Solar PV power capacity. All Solar PV is expected to be operational by Year 4. 25 MWh of Energy storage will also be installed
Component 2: Operation Efficiency, System and Capacity Building											
Program for women certified in solar PV installation implemented	# Programs	0	2021	0	1	1	0	0	2	Executing Agency Report	Programs are inclusive of trainings and the women to participate in apprenticeships in the solar PV sector. 50 women are expected to participate in the Program
Apprenticeship program designed and implemented for diversity and inclusion of people with disabilities	# Apprenticeship	0	2021	0	0	1	0	1	2	Executing Agency Report	Number of programs. At least 20% PwD and gender parity implementation.
Automated monitoring and control system installed	# Systems	0	2021	0	0	0	2	0	2	Executing Agency Report	Energy Management systems installed in the Linden and in Essequibo Systems
Substation upgraded with remote control system	# Substations	0	2021	0	0	0	2	0	2	Executing Agency Report	
Disaster Risk Management Plan finalized	# Plans	0	2021	0	0	1	0	0	1	Executing Agency Report	Training to operationalize the Plan will be financed through TC GY-T1164

Country: Guyana **Division**: INE/ENE **Operation No.:** GY-G1007 **Year**: 2022

Fiduciary Agreements and Requirements

Executing Agency (EA): Guyana Power & Light Inc (GPL)

Operation Name: Guyana Utility Scale Solar Photovoltaic Program (GUYSOL)

I. Fiduciary Context of Executing Agency

1. Use of country system in the operation[1]

☒ Budget	☐ Reports	☐ Information System	☐ National Competitive Bidding (NCB)
☒ Treasury	☐ Internal audit	☐ Shopping	☐ Others
☒ Accounting	☒ External Control	☐ Individual Consultants	☐ Others

2. Fiduciary execution mechanism

☒	Particularities of the fiduciary execution	The Guyana Power and Light Inc (GPL), the state-owned electricity company will be responsible for the execution of the program. The Program Coordination Unit (PCU) was established in 2014 to manage IDB financed projects. The PCU in GPL will be responsible for the program's technical, administrative and operational management and for carrying out all fiduciary activities related to the program.

3. Fiduciary Capacity

Fiduciary Capacity of the EA	An institutional capacity assessment of GPL was conducted in October 2021 using the PACI methodology. Following the assessment of the executing agency's fiduciary capacity, the fiduciary risk level is classified as medium. Financial management capacity is high. Although the PEU's limited experience using the new procurement policies and procedures, it is considered that the PEU has extensive experience managing projects financed under IDB financing and has a good grasp of procurement policies and procedures. Supervision and mitigation actions will be focused on efforts to strengthen the fiduciary capacity.

[1] (Any system or subsystem that is subsequently approved may be applicable to the operation, in accordance with the terms of the Bank's validation).

4. Fiduciary risks and risk response

Risk Taxonomy	Risk	Risk level	Risk response
Planning	The main fiduciary risks identified are delays in procurement planning and management due to the limited experience of the PEU in applying the Bank's new procurement policies and related procedures.	Medium-low	This risk will be mitigated i) by the hiring of dedicated procurement specialist and assistant in the PEU; ii) the design of an Operating Manual to provide adequate guidance and mitigation measures to discharge all fiduciary duties in accordance with the Banks's rules and procedures; iii) The provision of continuous technical supervision and training to the procurement and Financial Management staff who will be responsible for fiduciary activities under the program.

5. Policies and Guides applicable to operation: N/A

6. Exceptions to Policies and Rules: N/A

II. Aspects to be considered in the Special Conditions of the Agreement

Special conditions precedent to first disbursement: The beneficiary will provide evidence to the satisfaction of the Bank of: (i) the entry into force of the Program Operation Manual (POM) (OEL#5) according to the terms and conditions previously agreed with the Bank; (ii) the entry into force of a subsidiary agreement between the Ministry of Finance (MoF) and Guyana Power and Light Inc. (GPL) establishing the obligations of the parties for the execution of the program and the manner in which the resources will be transferred; and (iii) the establishment of a Program Execution Unit (PEU) within GPL as well as the designation or appointment of its key personnel, that is, a program coordinator, a procurement specialist, a procurement assistant, a financial specialist, an executive assistant, an environmental management specialist, a social management specialist and a monitoring and evaluation officer (¶I.3.5).

Special Contractual Clauses of execution: Prior to execution the beneficiary will provide evidence to the satisfaction of the Bank of the designation of additional key technical personnel of the PEU, that is, three electrical engineers. Prior to the contract award for the projects in the Linden area, the beneficiary will provide evidence to the satisfaction of the Bank, of the entry into force of an operational agreement between GPL and Linden Electricity Company Incorporated (LECI) establishing their respective roles and responsibilities for the implementation of the activities in Linden (¶I.3.6).

See environmental and social special contractual conditions in Annex B of the Environmental and Social Management Report (ESMR) as well as fiduciary conditions included in Annex III, section II.

Exchange rate on the effective date: TBD

Type of Audit: The audited financial report selected for supervision of the project is the Financial Audit Report of the project, audited by the Audit Office of Guyana or an eligible independent Audit firm. This report will be submitted to the Bank within 120 days after the end of each fiscal year, beginning with the fiscal year in which the first project expenditures are incurred. The final audited report will be submitted within 120 days after the last disbursement date of the program. The audit's scope and related considerations will be governed by the Financial Management Guidelines (document OP-273-12) and the Guide for Financial Reports and Management of External Audit.

III. Agreements and Requirements for Procurement Execution

☒	Bidding Documents	For procurement of Works, Goods and Services Different of Consulting executed in accordance with the Procurement Policies (document GN-2349-15), subject to ICB, the Bank's Standard Bidding Documents (SBDs) or those agreed between EA and the Bank will be used for the particular procurement. Likewise, the selection and contracting of Consulting Services will be carried out in accordance with the Policies for the Selection and Contracting of Consultants (document GN-2350-15) and the Standard Request for Proposals (SRP) issued by the Bank or agreed between the EA and the Bank will be used for the particular selection. The revision of the technical specifications, as well as the terms of reference of the procurements during the preparation of selection processes, is the responsibility of the sectorial specialist of the project. This technical review can be ex-ante and is independent of the procurement review method. "In the Procurement Processes that include the supply and/or installation of Solar Panels, the Standard Bidding Documents will include mitigation measures, considering the current Environmental and Social Policy Framework. Specific criteria will be defined on a case-by-case basis, considering market conditions and industry standards".
☒	Recurrent Expenses	The recurrent expenses required to put the project into operation approved by the Project Team Leader, which are financed, will be made following the Project Operation Manual approved by the Bank. Such procedures will be reviewed and accepted by the Bank, provided that they do not violate the principles of value for money, economy, efficiency, equality, transparency and integrity and in keeping with the Guidelines for the treatment of recurring expenses And GN 2331-5 Expense Eligibility Policy and updates.
☒	Advanced Contracting Retroactive financing	The Bank may retroactively finance up to a sum representing 5% of the proposed Non-reimbursable Financing Agreement, of eligible expenses .The eligible expenses may include: (i) Electrical Interconnection and Battery Optimization Assessments for the Berbice, Linden, and Essequibo PV Projects; (ii) Topographic Surveys, Geotechnical Analysis, and Flood Risk Assessments for all project sites; (iii) Procurement, and Construction of 33MWp of Solar Photovoltaic Plants with Battery Energy Storage Systems; and (iv) the Environmental and Social Assessment (ESA) consultancy provided that all requirements are substantially similar to those set out in the Non-reimbursable Financing Agreement. Such expenses must have been incurred on or after the approval date of the project profile (August 24th), but under no circumstances will expenses incurred more than 18 months before the non-reimbursable financing approval date be included. (See GN-2349-15, GN-2350-15 and l(a) Policy on Cost Recognition, Retroactive Financing and Advance Procurement, GN-2259-1).
☒	Procurement supervision	The method of supervision under the present Non-reimbursable Financing Agreement shall be Ex-Ante. The supervision method must be determined for each selection process and approved in the Project Procurement Plan. All procurement processes will be launched once all technical specifications and/or terms of reference are validated by the Bank's Sector Specialist; and will be documented in accordance with the Bank's general filing guidelines. All modifications to the present arrangement are subject to a prior written agreement between the Executing Agency and the Bank. The evaluation of

		capacity and the level of risk may vary during the project's execution depending on the findings of the regular supervision activities that will be conducted during the project's lifespan. As such, supervision modalities may vary as capacity increases.
☒	Records and Archives	All records and files will be maintained by the Borrower according to accepted best practices and to the general guidelines provided by the Bank. All records must be kept for seven (7) years beyond the end of the operation's execution period. It is also recommended that the Executing Agencies develop electronic filing to avoid losing project files.

Main Acquisitions

Description of the procurement	**Selection Method**	**New Procedures/Tools**	**Estimated Date**	**Estimated Amount in (US$)**
Works				
Installation of solar PV Farms (lot 1,2 ,3) Installation of automated monitoring and control and upgrade of substation with remote control system for lot 2 and lot 3	International Competitive Bidding (ICB)	N/A	April 18, 2022	76,900,000
Consulting Firms				
Consulting Services for certification process and apprenticeship support provided to Women to be trained on Solar PV installation	International Competitive Bidding (ICB)	N/A	[TBD]	520,000
Individuals				
Selection of 10 individual consultants for the energy program apprentices	3CV	N/A	[TBD]	300,000

Access to 18-month PA18 procurement plan here

IV. Agreements and Requirements for Financial Management

☒	Programming and Budget	The Borrower has committed to allocate, for each fiscal year of project execution, adequate fiscal space to guarantee the unfettered execution of the project.
☒	Treasury and Disbursement Management	•Precedent to the first disbursement, the Ministry of Finance will establish special bank account, denominated in US Dollars at the Bank of Guyana for project resources including the Advance of Funds disbursed by the Bank to the GPL. Required resources from the Project's US Dollar Bank Account will be transferred to another account, a denominated in Guyana Dollars to be utilized for payment of expenditures in local currency. The exchange rate to be used in the transaction will be the effective exchange rate on the date of payment of the expense in the local currency using the rate published by the Bank of Guyana. The financial plan will serve as the basis for the disbursement of funds to the EA to meet liquidity needs as justified in the project's operational instrument. The main disbursement methodology will be 1) Reimbursement to Borrower of Payments Made, and 2) the Advance of Funds based on a 6-month cash flow needs. Percentage for justification of expenditure will be 80% of outstanding balances pending justification.
☒	Accounting, information systems and reporting	Project accounting will be completed under the modified cash basis, in accordance with International Public-Sector Accounting Standards (IPSAS) and the Financial Management Guidelines for IDB-financed Projects (OP-273-12). Oracle Financial System will be used as the technology platform for the financial management of the operation and the cash-based method will be used. In addition to the policies and guides applicable to the operation, the Financial Manual for the project will be used with the documented definition of internal workflows and controls.
☒	External control: external financial audit and project reports	The EA will select and/or contract external audit services in accordance with the terms of reference previously agreed between the EA and the Bank. These will establish the type of review, opportunity and scope. The selected external auditor and the audit rules to be applied must be acceptable to the Bank. The type of Audited Financial Report that will be required to meet the external audit financial reporting needs in the operation is the Audited Financial Statements whose cut-off date is the project's fiscal year end and the filing deadline will be not more than 120 days after the fiscal year end.
☒	Project Financial Supervision	Based on the low level of financial management risk, the operation requires financial supervision for ex-post review of disbursements and internal controls review. Under the responsibility of the fiduciary financial management specialist "on-site" and desktop reviews and accompaniment will also be carried out annually, subject to adjustments during execution. The supervision will be of a financial and accounting nature and ensuring compliance with the agreement.

GUYANA UTILITY SCALE SOLAR PHOTOVOLTAIC PROGRAM (GUYSOL)

GY-G1007

CERTIFICATION

The Grants and Co-Financing Management Unit (ORP/GCM) certifies that the referenced operation will be financed through:

Funding Source	Code	Currency	Amount Up to
Norwegian Grant For Guyana	NGG	USD	83,300,000

For operations financed by funds where the Inter-American Development Bank (IDB) does not control liquidity, the availability of resources is contingent upon the request and the receipt of the resources from the donors. Additionally, in case of operations financed by funds that require a post-approval agreement with the donor, the availability of resources is contingent upon the signature of the agreement between the Donor and the IDB. (i.e.: Project Specific Grants (PSG), Financial Intermediary Funds (FIF), and single donor trust funds).

Approved By: Original Signed — April 21, 2022

Maria Fernanda García
Chief
Grants and Co-Financing Management Unit
ORP/GCM

Date

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/22

Guyana. Nonreimbursable Investment Financing GRT/NG-____-GY
Guyana Utility Scale Solar Photovoltaic Program (GUYSOL)

The Board of Executive Directors

RESOLVES:

1. That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such agreement or agreements as may be necessary with the Co-operative Republic of Guyana, for the purpose of granting it a nonreimbursable investment financing for a sum of up to US$83,300,000 chargeable to the resources granted by the Norwegian Agency for Development Cooperation, pursuant to the agreement or agreements specified in paragraph 2 below, and to adopt any other measures as may be pertinent for the execution of the project proposal contained in document PR-____.

2. That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such agreement or agreements with the Norwegian Agency for Development Cooperation as may be necessary to receive and administer resources for the purposes described in the project proposal specified in paragraph 1 above, and to adopt any other measures as may be pertinent for the execution of said agreement or agreements.

3. That the authorization granted in paragraph 1 above will be effective once the Bank and the Norwegian Agency for Development Cooperation have entered into the corresponding agreement or agreements to which reference is made in paragraph 2.

(Adopted on ___ _____ 2022)

LEG/SGO/CCB/EZSHARE-281104290-7639
GY-G1007